A Summary of Cases

June 4, 2018

2016/0257 On June 28, 2016, I went to Young's Greenhouse & Flower Shop to conduct a routine Worker Protection Standard (WPS) inspection. I met with owners Blake and Brian Young.

Disposition: Young's Greenhouse & Flower Shop, Blake Young and Brian Young were cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding agricultural use requirements. A civil penalty in the amount of $250.00 was assessed to Young's Greenhouse & Flower Shop for this violation.

2016/1178 On September 2, 2016, the Office of Indiana State Chemist (OISC) received a complaint regarding an improper termite treatment. The complainant, Dawn Wafford, alleged Orkin Pest Control did not perform a complete termite treatment on her mother's property because no rod holes were evident in the trench in the crawl space.

Disposition: Orkin and Bill Graves were warned for violation of section 65(6) of the Indiana Pesticide Use and Application Law, specifically 355 IAC 4-5-2(5), for failure to keep mandatory termiticide application records. Orkin and Bill Graves were cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application methods of a termiticide. A civil penalty in the amount of $250.00 was assessed for this violation.

2017/0690 On April 26, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report agricultural pesticide drift to his wife. He stated his wife and another lady were on a walking trail in a county park when an ag applicator backed up to the trail and drifted onto his wife. He also stated she has clothing we can have with the understanding the clothing will be destroyed in the analysis.

Disposition: Joe Walterhouse and Westville Farm Supply were cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift to people. A civil penalty in the amount of $250.00 was assessed for this violation. Consideration was given to the fact there was potential for human harm.

2017/0754 On May 12, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report his neighbor sprayed some kind of pesticide on his (neighbor's) property and runoff from the pesticide has killed vegetation on the complainant's property.

Disposition: David Braatz was cited for violation of section 65(7) of the Indiana Pesticide Use and Application Law for refusing to supply information when required or

requested by the state chemist in the course of an investigation. A civil penalty in the amount of $250.00 was assessed for this violation. David Braatz was warned for violation of section 65(6) of the Indiana Pesticide Use and Application Law, specifically 357 IAC 1-12-2, for applying a pesticide in a manner that allows it to drift from the target site in sufficient quantity to cause harm to non-target site. Consideration was given to the fact this was his first violation of similar nature.

2017/0799 On May 25, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) via email to report agricultural pesticide drift to his plants from a helicopter. He also stated he 'felt bad' after the pesticide application. The application allegedly took place on May 23, 2017.

Disposition:
A. Brian Townsend and Townsend Aviation were cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $500.00 was assessed for this violation. Consideration was given to the fact this was his second violation of similar nature within the past five (5) years. See case number 2016/1157.
B. OISC received an email from Brian Townsend dated March 9, 2017, indicating he wanted a formal hearing. An Informal Conference was scheduled for March 28, 2017 at 9:00 am at the White County Airport. Dave Scott, Secretary to the Indiana Pesticide Review Board, was notified on March 12, 2017.
C. On March 28, 2017, an informal conference was held with Mr. Townsend. Mr. Townsend asked questions about the investigative process and what the lab findings meant. At the conclusion of the conference, Mr. Townsend stated he did not wish to pursue a formal hearing.

2017/0820 On June 5, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report an agricultural pesticide drift to her ornamentals.

Disposition: Joshua Butt was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift and cleaning of the sprayer after use. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact this was his first violation of similar nature. Consideration was also given to the fact a restricted use pesticide was involved.

2017/0829 On June 7, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report agricultural pesticide drift to his trees.

Disposition: Mike Sisson and Premier Ag were cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $250.00 was assessed. Consideration was given to the fact this was Mr. Sisson's first violation of similar nature. Consideration was also given to the fact two (2) restricted use pesticides were involved.

2017/0830 On June 7, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report agricultural pesticide drift to her garden.

Disposition: Marvin Houin was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact this was his first violation of similar nature. Consideration was also given to the fact a restricted use pesticide was involved.

2017/0921 On June 24, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report agricultural pesticide drift to his beans. He stated Mr. McDonald applied dicamba to his own field that drifted onto the Complainant's beans.

Disposition: Cody Crowder of Alan H. McDonald Farms was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of sensitive crop registries and registrant's website. Cody Crowder of Alan H. McDonald Farms was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/0924 On June 22, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report agricultural pesticide drift of what he believed to be dicamba herbicide to his non-dicamba tolerant (DT) soybeans.

DISPOSITION: Strasburger Farms, Inc. was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding protection of sensitive areas; specifically for applying when wind is blowing towards susceptible crops; not checking manufacturer's website before application and for not checking Field Watch or any other sensitive crop registry. A civil penalty in the amount of $100.00 was assessed for this violation. Cory Fordice and Co-Alliance were cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding protection of sensitive areas, specifically for applying when wind is blowing towards susceptible crops. A civil penalty in the amount of $250.00 was assessed for this violation.

2017/0929 On June 27, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report dicamba agricultural pesticide drift to his soybeans.

Disposition: Adam Sieber was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding

application when wind is blowing towards a neighboring sensitive crop. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/0935 On June 28, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Mike Rose was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the application site, checking registrant's website and local sensitive crop registry before application. Mike Rose was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/0953 On July 3, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Cory Fordice was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the registrant's website before application. Cory Fordice was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $250.00 was assessed to Co-Alliance for this violation.

2017/0956 On July 3, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Alex Rusch was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the registrant's website and sensitive crop registry before application. Alex Rusch was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when winds were blowing toward a sensitive specialty crop. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/0971 On July 6, 2017, Ed Jaynes spoke with Joe Becovitz, Pesticide Program Specialist for the Office of Indiana State Chemist (OISC), regarding a pesticide drift complaint. Mr. Jaynes stated he first noticed dicamba-type injury to his Liberty Link soybeans around the end of June. Mr. Jaynes stated he believed the injury was the result of an application made to a field that is located south of his soybean field. Mr. Jaynes did not know who made the application.

Disposition: Bart Roger Barnett was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label language regarding checking sensitive crop registry and registrant's website before application.
Bart Roger Barnett was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $250.00 was assessed for this violation. Consideration was also given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/0978 On July 10, 2017, the Office of Indiana State Chemist (OISC) received a report of dicamba drift to tomatoes and snap beans. The complainant, Mr. Scott Stewart, stated the tomatoes and snap beans in his personal garden were wilted and dying.

Disposition: Brad Crum was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of sensitive crop registries and registrant's website. Brad Crum was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift to non-target vegetation. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/0981 On July 10, 2017, Dwayne Wade spoke with Joe Becovitz, Pesticide Program Specialist for the Office of Indiana State Chemist (OISC) regarding a dicamba drift complaint. Mr. Wade stated approximately 80 percent of a 110 acre field of Liberty Link soybeans had dicamba injury.

Disposition: Jay Sensmeier was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry before application. Jay Sensmeier was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when wind is blowing toward sensitive crops. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/1001 On July 10, 2017, Steve Hoke spoke with Joe Becovitz, Pesticide Program Specialist for the Office of Indiana State Chemist (OISC) regarding a dicamba drift complaint. Mr. Hoke stated he has five or six different soybean fields that have dicamba drift injury.

Disposition: Clay Williams was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of registrant's and sensitive crop websites. Clay Williams was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to

follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/1002 On July 10, 2017, Steve Hoke spoke with Joe Becovitz, Pesticide Program Specialist for the Office of Indiana State Chemist (OISC) regarding a dicamba drift complaint. Mr. Hoke stated he has five or six different soybean fields that have dicamba drift injury.

Disposition: Curtis Horton was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label language regarding the checking of the registrant's and sensitive crop websites. Curtis Horton was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label language regarding the potential for drift. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/1010 On July 13, 2017, Shannon Barr spoke with Joe Becovitz, Pesticide Program Specialist for the Office of Indiana State Chemist (OISC) regarding a dicamba drift complaint. Mr. Barr stated he first noticed injury to his soybeans on July 10 and believed the dicamba application was made about July 2.

Disposition: Anthony Herd was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding checking sensitive crop registry and registrant's website before application. Anthony Herd was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift to non-target vegetation. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/1021 On July 11, 2017, I spoke with Mr. Jaynes who stated he first noticed dicamba type injury to his Liberty Link soybeans around the end of June. Mr. Jayne stated he believed the injury was the result of an application made to a field that is located near his soybean field. Mr. Jayne did not know who made the application.

Disposition: Kyle Wischmeier was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label language regarding the checking of the Registrant's website before application. Kyle Wischmeier was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow all label language regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/1049 On July 18, 2017, the Complainant filed a second complaint with me while I was investigating another complaint of a dicamba drift/volatilization in the area.

Disposition: Andrew Englehart was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the sensitive crop registry. Consideration was given to the fact this was his first violation of similar nature. Tony Walton was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the registrant's website or the sensitive crop registry. Tony Walton was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $250.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/1050 On July 18, 2017, the complainant filed a complaint with me, Agent Brian Baker of OISC, while I was investigating two other complaints of an alleged dicamba drift/volatilization.

Disposition: Ross Dinkins was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to check sensitive crop registry before making an application. Ross Dinkins was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for applying in winds less than three miles per hour and for allowing contact of the herbicide with foliage, green stems, exposed non-woody root crops, and desirable plants including beans. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/1055 On July 19, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Jerry Ferguson was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the site, checking the registrant's website and checking a sensitive crop registry before application. Jerry Ferguson was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding applying when winds are blowing towards neighboring specialty crops. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1057 On July 11, 2017, the Office of Indiana State Chemist (OISC) received a complaint regarding dicamba drift. The complainant, Gary Alldredge, stated he has several soybean fields that are devastated by dicamba injury.

Disposition: Charles Roby was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the sensitive crop registry website before application. Charles Roby was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/1063 On July 21, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans. Although he lives in Illinois, the bean field he farms is in Clay County, Indiana.

Disposition: Brad Youngblood was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the application site; checking the registrant's website and checking sensitive crop registry before application. Brad Youngblood was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1066 On July 21, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Jerry Ferguson was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the application site; checking the registrant's website; checking the local sensitive crop registry before application. Jerry Ferguson was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when winds are blowing towards a sensitive crop and in winds over fifteen (15) miles per hour. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1075 On July 24, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba pesticide agricultural drift to his beans.

Disposition: Tony Herd was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the registrant's website and failure to check sensitive crop registry before application. Tony Herd was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was

given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/1079 On July 24, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Jerry Ferguson was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the application site, checking registrant's website and local sensitive crop registry before application. Jerry Ferguson was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when wind is blowing in the direction of a sensitive crop. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1084 On July 26, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Jeff Knittle was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry before application. Jeff Knittle was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1087 On July 25, 2017, Amy Beebe contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to beans in her field as well as in a field farmed by her dad, Jerry Losure.

Disposition: Greg Comer was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1090 On July 27, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to their beans.

Disposition: Alan Lape was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the registrant's website and local sensitive crop registry before application. Alan Lape was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding applying when wind is blowing in the direction of neighboring sensitive crop. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1098 On July 28, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his soybeans.

Disposition: Greg Comer was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift management. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1108 On July 31, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected aerial agricultural pesticide drift. The complainant stated the aerial applicator drifted onto him. He stated he has a shirt he can surrender for analysis with the understanding the shirt will not be returned to him.

Disposition: Eric Mitchell was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift to people. A civil penalty in the amount of $250.00 was assessed for this violation. Consideration was given to the fact there was potential for human harm.

2017/1110 On August 1, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural drift to his beans.

Disposition: Greg Comer was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1162 On August 1, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report aerial agricultural pesticide drift to his garden.

Disposition: David Ryan of Milhon Air, Inc. was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. Consideration was given to the fact this was his first violation of similar nature. David Ryan of Milhon Air, Inc. was cited for eight (8) counts of violation of section 65(6) of the Indiana Pesticide Use and Application, specifically 355 IAC 4-2-2, for making aerial pesticide applications without an Indiana certification. A civil penalty in the amount of $2,000.00 (8 counts x $250.00 per count) was assessed.

2017/1164 On August 1, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Keith White was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application in winds less than three miles per hour. A civil penalty in the amount of $250.00 was assessed for this violation.

2017/1166 On August 1, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his Liberty beans.

Disposition: Ryan Michael was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding checking the Registrant's website, sensitive crop registry and for failure to survey the site before application. Ryan Michael was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application in winds less than three (3) miles per hour. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1168 On August 2, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Seth Pollert was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry. Seth Pollert was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1171 On August 2, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition:
A. Tim Reibold was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.
B. Tim Reibold was cited for violation of section 65(7) of the Indiana Pesticide Use and Application Law for refusing to make reports and supply information when required or requested by the state chemist in the course of an investigation or inspection. A civil penalty in the amount of $100.00 was assessed for this violation. In addition, the Private Applicator permit issued to Tim Reibold was suspended until such time as he complies with the records request.
C. On April 17, 2018, the requested records were sent to OISC. The suspension of Mr. Reibold's Private Applicator permit was lifted.

2017/1180 On August 7, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Brandon Koester was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry website before application. Brandon Koester was

cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $250.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/1188 On August 9, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Bart Barnett was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the site, checking registrant's website and checking local sensitive crop registry before application. Bart Barnett was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when the wind is blowing towards a sensitive crop. A civil penalty in the amount of $250.00 was assessed for this violation. Bart Barnett was cited for violation of section 65(6) of the Indiana Pesticide Use and Application Law for failure to comply with an Order of the state chemist by not providing all of the requested information. A civil penalty in the amount of $250.00 was assessed for this violation.

2017/1190 On August 10, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Earl Worland Jr. was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry and registrant's website before application. Earl Worland Jr. was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when spray drift may occur. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1195 On August 7, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Clyde Lee Viers was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry before application. Clyde Lee Viers was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1208 On August 15, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Bart Barnett was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the site, checking registrant's website and checking local sensitive crop registry before application. Bart Barnett was cited for violation of section 65(6) of the Indiana Pesticide Use and Application Law for failure to comply with an Order of the state chemist by not providing all of the requested information. A civil penalty in the amount of $250.00 was assessed for this violation.

2017/1226 On August 25, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Joseph E. Steinkamp was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the sensitive crop registry or registrant's website before application. Joseph E. Steinkamp was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when spray drift may occur. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

2017/1302 On August 11, 2017, the complainant made contact with me, Agent Brian Baker of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his soybeans.

Disposition: Ryan Collins was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry or registrant's website 7 days before application. Ryan Collins was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when wind is blowing toward adjacent commercially grown dicamba sensitive crops. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1303 On August 10, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Ryan Collins was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry and registrant's website before application. Ryan Collins was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when wind is blowing toward adjacent commercially grown crops. A civil penalty in the amount of $100.00 was assessed for this violation.

2017/1304 On August 9, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Jeremy Sharp was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the site, checking registrant's website and checking local sensitive crop registry before application. Jeremy Sharp was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when the wind is blowing towards a sensitive crop. A civil penalty in the amount of $250.00 was assessed for this violation. Jeremy Sharp was cited for violation of section 65(6) of the Indiana Pesticide Use and Application Law for failure to comply with an Order of the state chemist by not providing all of the requested information. A civil penalty in the amount of $250.00 was assessed for this violation.

2017/1305 On August 15, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Jeremy Sharp was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the application site, checking the registrant's website and local sensitive crop registry before application. Jeremy Sharp was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when the wind is blowing towards a susceptible crop. A civil penalty in the amount of $250.00 was assessed for this violation. Jeremy Sharp was cited for violation of section 65(6) of the Indiana Pesticide Use and Application Law for failure to comply with an Order of the state chemist by not providing all of the requested information. A civil penalty in the amount of $250.00 was assessed for this violation.

2017/1307 On July 27, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

Disposition: Greg Comer was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

2018/0140 On August 21, 2017, I was investigating an aerial drift/fish kill complaint (OISC Case # 2017-1219) near Wabash, Indiana. During the investigation, I learned Vertical Vegetation out of Darlington, Indiana made the aerial application.

Disposition: William Powell was cited for fifteen (15) counts of violation of section 65(6) of the Indiana Pesticide Use and Application Law, specifically 355 IAC 4-2-2, for making aerial pesticide applications without being a certified applicator in Indiana. A

civil penalty in the amount of $3,750.00 (15 counts x $250.00 per count) was assessed. However, the civil penalty was reduced to $1,875.00. Consideration was given to the fact Mr. Powell and Xtreme Aviation cooperated during the investigation and corrective action was taken.

CASE SUMMARY

Case #2016/0257

Complainant: Office of Indiana State Chemist (OISC)
175 South University Street
West Lafayette, IN 47907-2063
800-893-6637

Respondent: Blake & Brian Young
Young's Greenhouse & Flower Shop
5867 Lake Avenue
Fort Wayne, IN 46815
260-245-0012

1. On June 28, 2016, I went to Young's Greenhouse & Flower Shop to conduct a routine Worker Protection Standard (WPS) inspection. I met with owners Blake and Brian Young.

2. During our discussion, it was determined that several family members and three seasonal employees work at the operation. Both Blake and Brian Young reportedly made pesticide applications at the greenhouse but neither was licensed. While the greenhouse employees are trained on basic safety, it was determined that no formal pesticide safety training was provided. Further, there was no central posting area where the EPA safety poster was displayed and pesticide application records were accessible to workers. Decontamination supplies were on-site as was personal protective equipment for pesticides applied.

3. The Youngs reported that employees are verbally notified when applications are made at the greenhouse and that they are made after-house when no employees are at the business. The applications are not posted. The last pesticide applied to plants at the greenhouse was Topflor (EPA Reg. #67690-20) on April 22, 2016. The application records for the business were being kept electronically and were later forwarded to me via email.

4. The Topflor label contained the Agricultural Use Requirements box which states, in part, **"Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170."**

5. I provided a safety poster and posting signs to Blake and Brian Young. We discussed the WPS requirements which were not being fulfilled, including the lack of pesticide safety training for workers, the absence of a central posting area with accessibility to application records and the posting of applications at the greenhouse.

Andrew R. Roth
Investigator

Date: December 2, 2016

Disposition: Young's Greenhouse & Flower Shop, Blake Young and Brian Young were cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding agricultural use requirements. A civil penalty in the amount of $250.00 was assessed to Young's Greenhouse & Flower Shop for this violation.

George N. Saxton
Compliance Officer

Draft Date: January 30, 2017
Final Date: April 11, 2018

CASE SUMMARY

Case #2016/1178

Complainant: Dawn Wafford
6739 Brouse Avenue
Indianapolis, Indiana 46220
317-880-7517

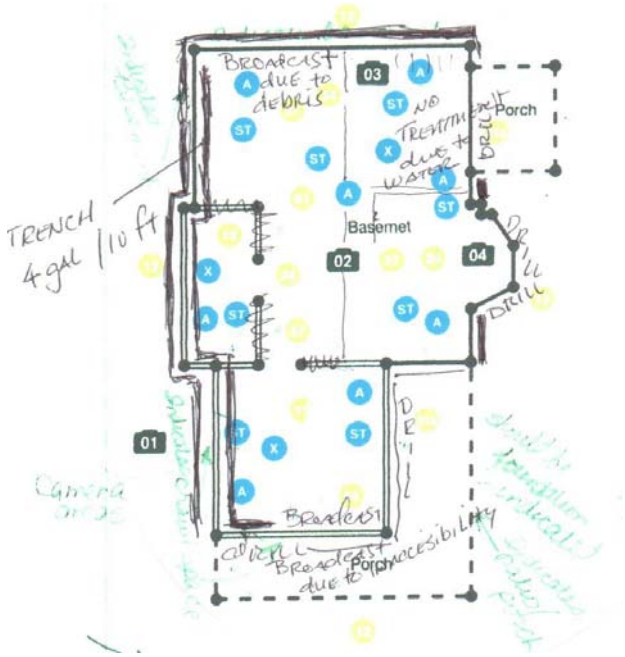
Respondent: Bill Graves **Licensed Applicator**
Orkin **Licensed Business**
3932 Pendleton Way
Indianapolis, Indiana 46226
317-545-8541

1. On September 2, 2016, the Office of Indiana State Chemist (OISC) received a complaint regarding an improper termite treatment. The complainant, Dawn Wafford, alleged Orkin Pest Control did not perform a complete termite treatment on her mother's property because no rod holes were evident in the trench in the crawl space.

2. On September 12, 2016, Agent Rosch and I met with and issued a Notice of Inspection (NOI) to the complainant Dawn Wafford. She told us she had reservations about a recent pesticide application made to her mother's rental property at 223 E. 6th Street in Rushville, Indiana. The first time the Orkin pesticide applicator made the application she believed they did not make a full liquid barrier treatment as promised. She said based on their inaccurate diagram, some areas did not receive any treatment. She also stated in some areas on the outside and inside of the house, she could not locate any evidence of "rodding holes" where a pesticide treatment was made.

3. Ms. Wafford explained she could not find evidence of any trenching next to the walls in the crawl space of the basement. She also told us there was no evidence of "rodding holes" in the basement floor next to the walls.

4. When she spoke to the Orkin manager (Dan McGhiey), she was not satisfied with his assurance they would fix the any problems. She did admit the applicator (Bill Graves) returned and made another pesticide application to areas she discussed with the manager. Agent Rosch and I checked the area around the exterior of the house. It was difficult to determine if any pesticide application had been made by the "rodding" method. We also checked the basement. We could not find evidence of any "rodding holes" on the basement floor next to the outer walls. We also could not find any evidence of "trenching" along the inside walls of the crawl space. (See diagram below)



5. I met with Orkin manager Dan McGhiey. He told me he had several conversations with the complainant. He assured her his company would take care of any problems. He gave me copies of the paperwork associated with the complaint. According to the paperwork, **Termidor SC** (**EPA** #7969-210; **active ingredient**: fipronil) was applied at a rate of .06% dilution solution.

6. I spoke to the Orkin pesticide applicator Bill Graves. When I asked him about the lack of "trenching" and "rodding" in the basement, Mr. Graves told me he did not "trench" in some areas of the crawl space because he couldn't access the area to do the "trenching". Instead, he did a "broadcast" treatment of 4 gallons to 10 linear feet to those areas. He stated he stood as close as he could before spraying the chemical into the affected area. He admitted he did not drill (rod) holes into the basement floor as required by the label because there was standing water at the time of the treatment. I told him according to the **Termidor SC** label, he should not to have made a broadcast treatment. I also told him I could find no evidence of a signed "disclosure form" when he failed to make an application to the basement floor. He admitted he did not have a signed "disclosure form". He reiterated he was afraid water would come up through the drill holes if he had "rodded" the floor.

7. After reviewing the available information, Mr. Graves was in violation of failing to have the complainant sign a disclosure form when he failed to make a complete by the label application. He was also in violation for making a pesticide application against the **Termidor SC** label which read in part, "*Do not broadcast or power spray with high pressures."*

Kevin W. Gibson
Investigator

Date: November 28, 2016

Disposition: Orkin and Bill Graves were warned for violation of section 65(6) of the Indiana Pesticide Use and Application Law, specifically 355 IAC 4-5-2(5), for failure to keep mandatory termiticide application records.

Orkin and Bill Graves were cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application methods of a termiticide. A civil penalty in the amount of $250.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: January 30, 2017
Final Date: April 11, 2018

CASE SUMMARY

Case #2017/0690

Complainant: Jeff Mueller
585 Pheasant Drive
Westville, Indiana 46391
(219) 405-1050

Respondent: Joe Walterhouse — Certified Applicator
Westville Farm Supply
4725 S. US Highway 421
Westville, Indiana 46391
(219) 785-2624

1. On April 26, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report agricultural pesticide drift to his wife. He stated his wife and another lady were on a walking trail in a county park when an ag applicator backed up to the trail and drifted onto his wife. He also stated she has clothing we can have with the understanding the clothing will be destroyed in the analysis.

2. On May 4, 2017, I met the complainant and his wife Amanda Mueller at their residence. Mrs. Mueller stated that she was walking east on the trail around 8:30 am and was sprayed by a sprayer at the Bluhm County Park in La Porte County, Indiana.

Figure 1

- Figure 1 is a screen shot of Mrs. Mueller's run the day she was sprayed at Bluhm County Park. This image is from her "map my run" application.

Figure 2

- Figure 2 is a map of the Bluhm County Park area. Marker A shows the park location and Marker 1 shows the location of Mrs. Mueller when she was sprayed. The white arrow indicates where the sprayer was and the direction it was going when Mrs. Mueller was sprayed. The yellow arrow indicates the North direction on the photo.

3. Mrs. Mueller stated she was walking east on the trail when the sprayer backed up to the walking trail area and just started spraying. Mrs. Mueller did not want to submit the items to the OISC Residue Laboratory, so I took swab samples on the right side of Mrs. Muellers sweatshirt and right shoe. These areas would have been facing the sprayer when Mrs. Mueller was on the trail.

Figure 3

Figure 4

- Figure 3 is the sweatshirt Mrs. Mueller was wearing when she was sprayed. The orange markers indicate the places I took the swab samples.
- Figure 4 are the shoes Mrs. Mueller was wearing when she was sprayed. I took swab samples of the right side of her shoe.

4. I went to the Blum County Park to take samples from the target field and spray area (figure 5 below). Mrs. Mueller showed me where she was standing on the asphalt trail (blue star) when she was sprayed. I did not take any grass vegetation between the target field and the asphalt track because it was just freshly mowed. I only took vegetation from the target field and from the tree line that would have been behind Mrs. Mueller (red stars).

Figure 5

- Red Stars above indicate where samples were taken from the target field and tree line behind where Mrs. Mueller was walking
- Blue Star indicates where Mrs. Mueller was walking when she was sprayed
- Green Arrow indicates the approximate sprayer location and direction it was facing (to the south)

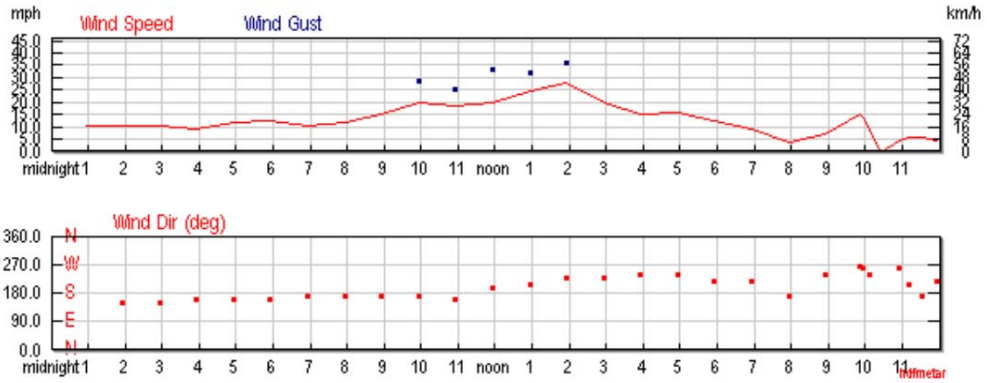
Figure 6

- Figure 6 shows the cupping and curling of vegetation to the north of the trail (would be behind Mrs. Muller when she was walking)

5. On May 4, 2017, I received the spray records from Westville Farm Supply. The certified applicator Joe Walterhouse applied the following pesticides on April 26, 2017 :

   - **Roundup Powermax**-EPA #524-549- Active Ingredient: Glycine 48.7%
   - **Authority MTZ**- EPA #279-3340- Active Ingredients: Metribuzin 27%, Sulfentrazone 18%
   - **Tricor DF**-EPA # 70506-103-Active Ingredient: Metribuzin 75%

6. I checked the weather data on weather underground for April 26, 2017 and it shows the following:



7:56 AM	66.0 °F	-	55.9 °F	70%	29.54 in	10.0 mi	South	11.5 mph	-	N/A	Overcast
8:56 AM	71.1 °F	-	57.0 °F	61%	29.49 in	10.0 mi	South	15.0 mph	27.6 mph	N/A	Partly Cloudy
9:56 AM	73.0 °F	-	57.9 °F	59%	29.44 in	10.0 mi	South	19.6 mph	28.8 mph	N/A	Clear

*Note-approximate time of application was 8:30am. Winds ranged from 11.5 mph to 19.6mph and gusting max speed of 28.8 mph out of the south.

7. On May 16, 2017, I received the sample analysis results from the OISC Residue laboratory. The results are as follows:

Case # 2017/0690		**Investigator: Melissa Rosch**		
Sample #	Sample Description	Matrix	**Amount Found (ng/swab for swabs or ppb for vegetation)**	
			Metribuzin	**Sulfentrazone**
2017-355282	Trip blank	Swab	BDL	BDL
2017-355283	Control Swab	Swab	BDL	BDL
2017-355284	Hood swab/Top	Swab	0.645	1.83
2017-355285	Right shoulder sweatshirt	Swab	1.47	12.7
2017-355286	Right sleeve cuff	Swab	0.838	6.89

2017-355287	Right flank sweatshirt	Swab	4.77	15.4
2017-355288	Right shoe top/side	Swab	6.84	6.36
2017-355289	45 ft tree veg	Vegetation	294	35.5
2017-355290	Target field veg	Vegetation	188	15.2
2017-355291	Target field soil	Soil	Not analyzed	Not analyzed

PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC

LOQ =0.2 ng/swab for swabs and 0.6 ppb for vegetation

Signature		**Date**	5/15/17

8. In this case, the applicator Mr. Walterhouse made a pesticide spray application to an agricultural field on April 26, 2017. The pesticide products that he used are listed in paragraph 5 of this report. It appears there was drift of the pesticide products in this case based on the following points:
   - The pesticide products used by the applicator were found on Mrs. Mueller's sweatshirts and shoes.
   - The pesticide products that were used by the applicator were also found on the vegetation behind (to the north) of the walking trail where Mrs. Mueller was walking when she was sprayed.
   - The winds were blowing from the South between 11.5mph and 19.6mph directly towards Mrs. Mueller on the walking trail from where the sprayer was.

9. The pesticide label violations are as follows:

   The label for **Authority MTZ**- EPA #279-3340- Active Ingredients: Metribuzin 27%, Sulfentrazone 18% reads:

   -*"Do not apply in a way that will contact workers or other persons, either directly or through drift."*

Melissa D. Rosch — Date: November 22, 2017
Investigator

Disposition: Joe Walterhouse and Westville Farm Supply were cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift to people. A civil penalty in the amount of $250.00 was assessed for this violation. Consideration was given to the fact there was potential for human harm.

George N. Saxton — Draft Date: January 30, 2018
Compliance Officer — Final Date: March 22, 2018

CASE SUMMARY

Case #2017/0754

Complainant: Raymond Ferry
7112 W. 138th Avenue
Cedar Lake, Indiana 46303
219-746-2321

P.O. Box 567
Cedar Lake, Indiana 46303

Respondent: David Braatz — Property Owner
1201 North Main Street, Suite A
Crown Point, Indiana 46307
219-663-8044

1. On May 12, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report his neighbor sprayed some kind of pesticide on his (neighbor's) property and runoff from the pesticide has killed vegetation on the complainant's property.

2. On May 12, 2017, I arrived at the complainant's address and spoke to Raymond Ferry. Mr. Ferry stated that there was someone on a sprayer on the vacant lot adjacent to this address spraying an unknown substance and now there is damage to his grass and garden area. I stated to Mr. Ferry that I would be there the next day to take swab and vegetation samples from his property. Mr. Ferry stated that David Braatz is the owner of the adjacent lot. Mr. Ferry is concerned that the pesticide may have gotten onto his garden area.

Figure 1
- Red Outlined area is the target lot
- Blue Outlined area is the complainant's property
- Yellow Outlined Area is the complainant's garden area

3. On May 13, 2017, I went to Mr. Ferry's residence and took samples from the target lot and Mr. Ferry's property as shown below. Mr. Ferry also added that the application took place about two weeks ago and that he saw some kind of tank sprayer spraying the field. I saw grass on Mr. Ferry's property, which was now a yellow color, as well as leaves on his trees which started to cup and curl.

Figure 2

Figure 3

- Figure 2 and Figure 3 show Mr. Ferry's property to the left and Mr. Braatz's lot to the right. In Figure 2, the white arrow indicates his garden area.

Figure 4

Figure 5

4. On May 15, 2017, I called David Braatz's office in Crown Point, Indiana. I spoke to his secretary and left a message for a return phone call.

5. On May 17, 2017, I went to David Braatz's office in Crown Point, Indiana, issued a Notice of Inspection to his secretary, and left my business card for a return phone call.

6. On May 17, 2017, I received a return phone call from David Braatz's secretary stating that David said that they sprayed "Round Up". I told her that I would need a little more information regarding which product, the EPA #, and applicator information and I needed Mr. Braatz to call me back.

7. On June 20, 2017, OISC sent by certified mail a Pesticide Investigation Inquiry to Mr. Braatz.

8. On June 28, 2017, the certified mail receipt was signed for Mr. Braatz.

9. On June 29, 2017, I received a voice mail from Attorney Kevin Milner stating that he was representing Mr. Braatz and to call him back at 219-406-0556.

10. I contacted Mr. Milner two times at 219-406-0556 leaving voice mails with no return phone call. The first phone call was on June 29, 2017 and second on July 5, 2017.

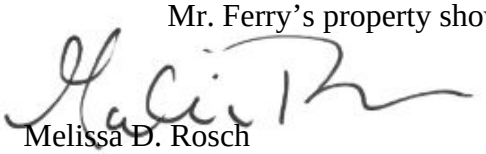
11. On August 14, 2017, I spoke to the OISC Compliance Officer Dr. George Saxton about submitting the samples for the active ingredient in Round Up, which is glyphosate to verify the statement made by Mr. Braatz,'s secretary. Dr. Saxton advised to submit the samples taken from Mr. Ferry's property to the OISC Residue Laboratory for analysis for glyphosate.

12. On September 16, 2017 I received the OISC Pesticide Residue Laboratory Lab Report which shows the following results:

Case # 2017/0754		**Investigator: M. Rosch**		
Sample #	Sample Description	Sample Matrix	**Amount Found (ng/swab or ppb)**	
			Glyphosate	AMPA
2017-355292	Trip blank	Swab	BDL	BDL
2017-355293	Control sample acetone	Swab	Not tested	Not tested
2017-355294	Control sample water	Swab	BDL	BDL
2017-355295	Acetone veg swab 0-1	Swab	Not tested	Not tested
2017-355296	Acetone veg swab 0-2	Swab	Not tested	Not tested
2017-355297	Water veg swab 0-1	Swab	BDL	BDL
2017-355298	Acetone veg swab 1-1	Swab	Not tested	Not tested
2017-355299	Acetone veg swab 1-2	Swab	Not tested	Not tested
2017-355300	Water veg swab 1-1	Swab	BDL	BDL
2017-355301	Acetone veg swab 2-1	Swab	Not tested	Not tested
2017-355302	Acetone veg swab 2-2	Swab	Not tested	Not tested
2017-355303	Water veg swab 2-1	Swab	BDL	BDL
2017-355304	Acetone veg swab 3-1	Swab	Not tested	Not tested
2017-355305	Acetone veg swab 3-2	Swab	Not tested	Not tested
2017-355306	Water veg swab 3-1	Swab	BDL	BDL

2017-355307	Target field acetone veg swab 1	Swab	Not tested	Not tested
2017-355308	Target field acetone veg swab 2	Swab	Not tested	Not tested
2017-355309	Target field water veg swab 1	Swab	6819	BDL
2017-355310	Veg -Tree-0	Vegetation	BDL	BDL
2017-355311	Veg -Tree-1	Vegetation	43.9	BDL
2017-355312	Veg -Tree-2	Vegetation	11.4	BDL
2017-355313	Veg -Garden-3	Vegetation	307	BDL
2017-355314	Target field vegetation	Vegetation	Not tested	Not tested
2017-355315	Target field soil	Soil	Not tested	Not tested
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC				
LOQ (ppb)	Swab		10	100
LOQ (ppb)	Vegetation		5	25
Signature		**Date**	9/16/17	

13. In this case, it appears there is a violation of the Indiana Pesticide Use and Application Law based on the following:
    - Mr. Braatz and/or his representative refused to provide information as requested in the Pesticide Investigation Inquiry, which was certified mailed to Mr. Braatz. The receipt states it was received on June 28, 2017.
    - The chemical "glyphosate" commonly found in the product "Round Up" tested positive in samples from the target field and the non-target area, Mr. Ferry's property.
      Mr. Ferry's property showed signs of damage on his grass, garden, and trees.



Melissa D. Rosch — Date: November 24, 2017
Investigator

Disposition: David Braatz was cited for violation of section 65(7) of the Indiana Pesticide Use and Application Law for refusing to supply information when required or requested by the state chemist in the course of an investigation. A civil penalty in the amount of $250.00 was assessed for this violation.

David Braatz was warned for violation of section 65(6) of the Indiana Pesticide Use and Application Law, specifically 357 IAC 1-12-2, for applying a pesticide in a manner that allows it to drift from the target site in sufficient quantity to cause harm to non-target site. Consideration was given to the fact this was his first violation of similar nature.

George N. Saxton — Draft Date: January 26, 2018
Compliance Officer — Final Date: March 22, 2018

CASE SUMMARY

Case #2017/0799

Complainant: Hibbard Cox
6632 Sugar Maple Court
Monticello, Indiana 47960
281-546-0404

Respondent: Townsend Aviation
Brian Townsend — Licensed Applicator
2411 S. Airport Road
Monticello, Indiana 47960
574-583-9900

1. On May 25, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) via email to report agricultural pesticide drift to his plants from a helicopter. He also stated he 'felt bad' after the pesticide application. The application allegedly took place on May 23, 2017.

2. On May 30, 2017, I met with Mr. Cox. Mr. Cox stated that he saw a helicopter flying in the field adjacent to his property spraying an unknown substance. Mr. Cox stated that he "didn't feel well" afterwards but did not seek any medical attention. Mr. Cox also stated that some of the vegetation on his property appeared to be "damaged" with leaves that were cupping and curling, including grape plants that he had planted in his front yard. I took swabs and vegetation samples from Mr. Cox's property and submitted them to the OISC Residue Laboratory.

*Photographs of the pesticide exposure symptoms on the complaint's property

*Photograph above shows the target field outlined in Red & the complainant's property outlined in Green

3. On May 30, 2017, I received spray records from the aerial applicator Brian Townsend. Mr. Townsend's records showed that he did make a pesticide application in the above-mentioned field on May 23, 2017 from 3:15pm to 5:15pm. The pesticide products Mr. Townsend used are the following:

    - *RoundUp Power Max EPA #524-549 Active Ingredient Glyphosate 48.7%*
    - *Lamcamp EPA #100-1112, Active Ingredient Iambda-Cyhalothrin 11.4%*
    - *Drexel De-Ester LV-4 EPA #19713-345, Active Ingredient 2,4-D 65.4%*

4. I checked the website for Weather Underground for weather data on May 23, 2017 during the time of application and it shows the following:

Time	Temp					Dir	Speed			
3:15 PM	69.8 °F	48.2 °F	46%	29.74 in	10.0 mi	ESE	6.9 mph	-	N/A	Mostly Cloudy
3:35 PM	68.0 °F	48.2 °F	49%	29.74 in	10.0 mi	SSE	3.5 mph	-	N/A	Clear
3:55 PM	68.0 °F	46.4 °F	46%	29.74 in	10.0 mi	ESE	3.5 mph	-	N/A	Scattered Clouds
4:15 PM	68.0 °F	48.2 °F	49%	29.74 in	10.0 mi	ESE	3.5 mph	-	N/A	Mostly Cloudy
4:35 PM	68.0 °F	46.4 °F	46%	29.73 in	10.0 mi	ENE	4.6 mph	-	N/A	Scattered Clouds
4:55 PM	68.0 °F	48.2 °F	49%	29.73 in	10.0 mi	NE	3.5 mph	-	N/A	Scattered Clouds
5:15 PM	69.8 °F	48.2 °F	46%	29.72 in	10.0 mi	East	3.5 mph	-	N/A	Clear

5. The OISC Residue Laboratory results are as follows:

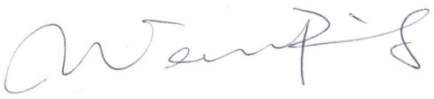
Case # 2017/0799		Investigator: M. Rosch		
Sample #	Sample Description	Sample Matrix	Amount Found (ng/swab or ppm)	
			2,4-D	**Lambda-cyhalothrin**
2017-355353	TB	Swab	BDL	Not tested
2017-355354	CS	Swab	BDL	Not tested
2017-355355	A 0	Swab	27.1	Not tested
2017-355356	A 1	Swab	17.5	Not tested
2017-355357	A 2	Swab	32.1	Not tested
2017-355358	A 3	Swab	161	Not tested
2017-355359	VEG 0	Vegetation	NA	BQL
2017-355360	VEG 1	Vegetation	NA	BDL
2017-355361	VEG 2	Vegetation	NA	BDL
2017-355362	VEG 3	Vegetation	NA	BDL
2017-355363	TF SWAB	Swab	69.5	Not tested
2017-355364	TF VEGETATION	Vegetation	NA	BDL

PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC

NA= not analyzed

LOQ = 2 ppm for Lambda-Cyhalothrin in vegetation

LOQ = 1 ng/swab for 2,4-D in swabs

Signature		**Date**	12/8/17

6. The label violations for Mr. Townsend are the following:

- *Drexel De-Ester LV-4 EPA #19713-345, Active Ingredient 2,4-D 65.4%*

  Page 2 of the label reads

  "Do not apply this product where spray drift may contact nearby susceptible crops or other desirable plants or may contaminate water for irrigation or domestic use."

  Page 3 of the label reads

  ***"Susceptible plants:** Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use, or consumption Susceptible crops include, but are not limited to, Beans, Cotton, Flowers, Grapes (in growing stage), Fruit trees (foliage), Okra, Ornamentals, Soybeans (vegetative state), Sunflowers, Tobacco, Tomatoes, and other Vegetables. Small amounts of spray drift that might not be visible may injure susceptible broadleaf plants."*

7. In this case, it appears there is a violation of the Indiana Pesticide Use and Application law because of the following:
    - The pesticides Mr. Townsend used were found in the target field and on the complainant's property.
    - The above mentioned label violations in paragraph 6

Melissa D. Rosch Date: January 10, 2018
Investigator

Disposition:

A. Brian Townsend and Townsend Aviation were cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $500.00 was assessed for this violation. Consideration was given to the fact this was his second violation of similar nature within the past five (5) years. See case number 2016/1157.

B. OISC received an email from Brian Townsend dated March 9, 2017, indicating he wanted a formal hearing. An Informal Conference was scheduled for March 28, 2017 at 9:00 am at the White County Airport. Dave Scott, Secretary to the Indiana Pesticide Review Board, was notified on March 12, 2017.

C. On March 28, 2017, an informal conference was held with Mr. Townsend. Mr. Townsend asked questions about the investigative process and what the lab findings meant. At the conclusion of the conference, Mr. Townsend stated he did not wish to pursue a formal hearing.

George N. Saxton Draft Date: March 29, 2018
Compliance Officer Final Date: May 3, 2018

CASE SUMMARY

Case #2017/0820

Complainant: Lorie Leloup
13846 N CR 200 W
Carbon, Indiana 47837
812-531-0272

Respondent: Butts Prairie Acres
Joshua Butt — Private Applicator
4313 W. Lower Bloomington Rd.
Cory, Indiana 47846
812-249-8548

1. On June 5, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report an agricultural pesticide drift to her ornamentals.

2. On June 6, 2017, I met with the complainant at her residence to follow up on her report of alleged pesticide drift to the ornamentals on her property.

3. While at the scene I took photos, prepared a diagram for future reference and collected physical samples for analysis by the OISC residue lab as well samples for symptom analysis by the Purdue Plant and Pest Diagnostic Lab (PPPDL).

4. What I observed while at the scene appeared to be speckling on numerous ornamentals located on the complainant's property. (See Figures 1,2,3 and 4)


Figure One


Figure Two

Figure Three

Figure Four

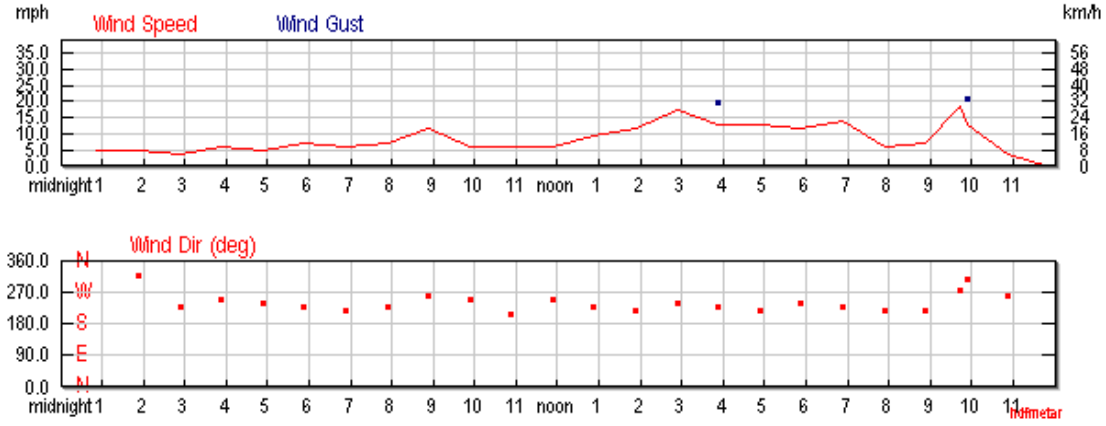
5. The complainant's property is located directly east across a road separated by 45 feet from the first row in the field. (See Figure 5)

Figure Five

6. According to a signed Pesticide Investigation Inquiry form, a pesticide application was made by Mr. Butt on May 29, 2017, to the field located to the west of the complainant's property. The application consisted of a tank mix that included Metribuzin 75 (EPA Reg. #34704-876) active ingredient metribuzin, Gramoxone (EPA Reg. #100-1217) active ingredient paraquat and Clarifier (EPA Reg. #7969-137-33270) active ingredient dicamba. Mr. Butt also advised that this application was made for failed corn after replanted. Previous tank mix was Realm-Q (EPA Reg. #352-837) active ingredients rimsulfuron and mesotrione, Abundit (EPA Reg. #352-922) active ingredient glyphosate and Atrazine (EPA Reg. #33270-10) active ingredient atrazine. Mr. Butt stated that the tank was not cleaned out prior to the application on May 29, 2017. Mr. Butt stated the wind speed and direction was 5mph with 15mph gusts out of the west.

7. I searched wind data from www.weatherunderground.com for zip code 47837 in Carbon, Indiana for the reported dates and times of the application. The results of that search indicated that wind speeds and directions during the application were as follows:

May 29, 2017
As recorded at Terre Haute 12 mph out of the southwest



Terre Haute Wind Data 12 Miles Southwest

8. The wind would have been blowing in the direction of the complainant's property.

9. The report from the PPPDL states, *"Apple scab was confirmed on the crab apple leaves however no fungal pathogens were confirmed to be associated with the dead, round spots on the samples submitted. Necrotic speckling and burns on leaves are indicative of the type of injury that can be caused by a contact herbicide like paraquat. I did not see any symptoms of metribuzin or dicamba drift."*

10. The results of the OISC residue lab are as follows:

Case # 2017/0820		**Investigator: K. Neal**				
Sample #	Sample Description	Sample Matrix	**Amount Found (ng/swab)**			
			Dicamba	**Metribuzin**	**Atrazine**	**Paraquat**
2017-22-0565	Trip Blank	Swab	BDL	BDL	BDL	Did not test
2017-22-0566	Swab Vegetation next to house side	Swab	19.4	BQL	75.5	Did not test
2017-22-0567	Swab Vegetation crab apple SW corner	Swab	26.7	7.19	297	Did not test
2017-22-0568	Swab Vegetation 14 yards west of house iris	Swab	18.4	BDL	143	Did not test
2017-22-0569	Swab Vegetation target field	Swab	74.4	9.41	459	Did not test
2017-22-0570	Vegetation sample next to house west	Vegetation	Did not test	Did not test	Did not test	899
2017-22-0571	Vegetation sample Crab apple SW corner	Vegetation	Did not test	Did not test	Did not test	3606*
2017-22-0572	Vegetation sample 14 yards west of house iris	Vegetation	Did not test	Did not test	Did not test	261
2017-22-0573	Vegetation target field	Vegetation	Did not test	Did not test	Did not test	49870*

PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC

*Results reported as minimum amount found due to concentrations exceeded calibration curve range.

Swabs: LOQ =10 ng/swab for Dicamba; 1 ng/swab for Atrazine and Metribuzin

Veg: LOQ = 12.5 ppb for Paraquat

Signature		**Date**	1/29/18

11. Active ingredients from the application made on May 29, 2017, as well as atrazine from the previous tank mix were found in the samples from the complainant's property.

12. The label for Gramoxone states, *"Do not apply under conditions involving possible drift to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use, or consumption. Do not apply when weather conditions favor drift from treated areas."*

13. The label for Clarifier states, *"Avoid off-target movement."*

14. The label for Metribuzin 75 states, *"Do not allow sprays to drift on to adjacent desirable plants."*

15. The label for Atrazine states, *"Clean sprayer thoroughly immediately after use by flushing system with water containing a detergent*."

Kevin W. Neal
Investigator

Date: January 30, 2018

Disposition: Joshua Butt was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift and cleaning of the sprayer after use. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact this was his first violation of similar nature. Consideration was also given to the fact a restricted use pesticide was involved.

George N. Saxton
Compliance Officer

Draft Date: March 12, 2018
Final Date: May 1, 2018

CASE SUMMARY

Case #2017/0829

Complainant: Don Royalty
4383 E. SR 252
Franklin, Indiana 46131
317-403-6923

Respondent: Mike Sisson Certified Applicator
Premier Ag
2738 W. 300 S.
Trafalgar, Indiana 46181
317-878-4630

1. On June 7, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report agricultural pesticide drift to his trees.

2. On June 8, 2017, I met with the complainant at his residence. I identified myself verbally and with OISC credentials. I explained the role of OISC in drift investigations and issued a Notice of Inspection. The complainant and I went about his property looking primarily at his trees. The complainant's property is bordered to the south by an agricultural crop field which had standing 4-6" corn. The complainant was mowing his grass along the edge of the property that borders the ag field and he noticed his tress were exhibiting "injury symptoms" (brown curled up leaf margins, fig. 3) that he feels may have been caused by drift of a pesticide when the pesticide application was made to the agricultural crop field. The complainant's spruce trees were dead and any vegetation on them was completely brown. I collected a branch sample for the Purdue Plant and Pest Diagnostic Laboratory (PPDL). The complainant told me the pesticide burn down line (figs. 1&4) was clearly on his property and it seemed to him it has come onto his property more and more each year when the pesticide applications are made to the field south of his property. The injury symptoms were heaviest along the edge of the aforementioned Ag field and diminished as you moved north across the complainant's property.


Fig. 1


Fig. 2


Fig. 3


Fig. 4


Fig.5

- Figure 1-3 are of an Ash tree on the edge of the Ag field in this case.
- Figure 4-5 are of a blue spruce on the edge of the Ag field in this case.

3. I collected swab samples, vegetation and branch samples from the complainant's property. I collected swabs, vegetation and soil from the Ag field. The samples were tagged and transported to the appropriate laboratory for analysis. The branch samples were taken to The Purdue Plant and Pest Diagnostic Laboratory (PPDL) and all others were turned into the OISC Residue Laboratory for analysis. The OISC samples were collected in a gradient fashion, north to south from the maple tree to the Ash tree along the field edge.

4. I completed a field sketch of the area with sampling data. The diagram which follows (fig.6) was made from the field sketch and the weather data was added in.

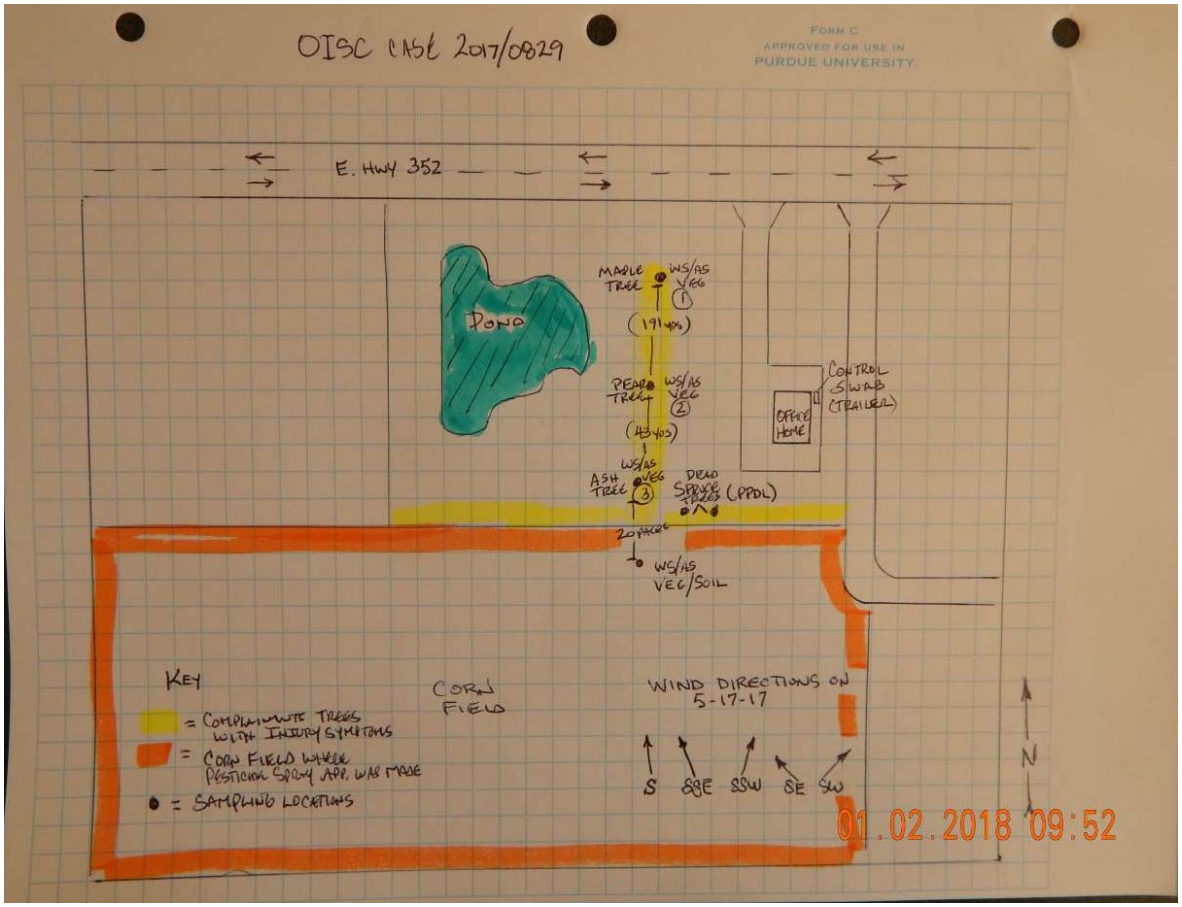


Fig. 6

5. The complainant told me the farmer that farms the field in this case is Scott Dehart. I was able to locate the Dehart Farm in Trafalgar Indiana and found that Premier Ag Company in Trafalgar Indiana in this case made all pesticide applications to the Ag field. I went to Premier Ag and spoke to Wes Mitchell. Mr. Mitchell was able to provide a pesticide spray application record (fig.7) and the pesticide product labels for the pesticide application made to the Ag field that borders the complainant on the south side. The records are attached to the case file. The pesticide spray application was made on **5-17-17 from 7:00am to 10:35am** by Mike Session of Premier Ag. The pesticide products used in the tank mix were:

- *Atrazine 90 DF, EPA Reg# 9779-253, AI=atrazine*
- *Corvus, EPA Reg# 264-1066, AI=thiencarbazone 7.60%, isoxaflutole 19.0%*

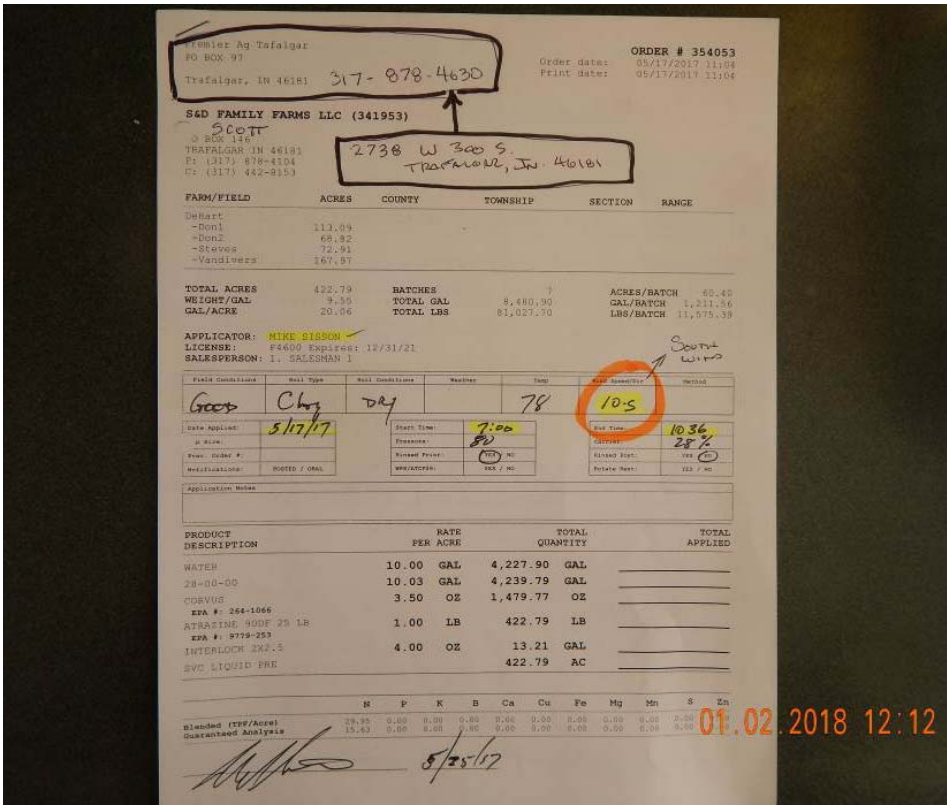
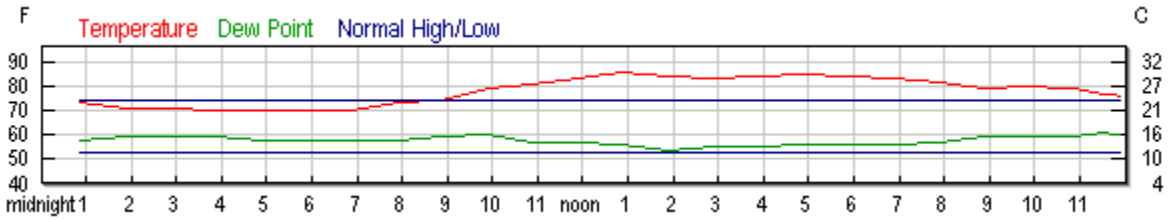


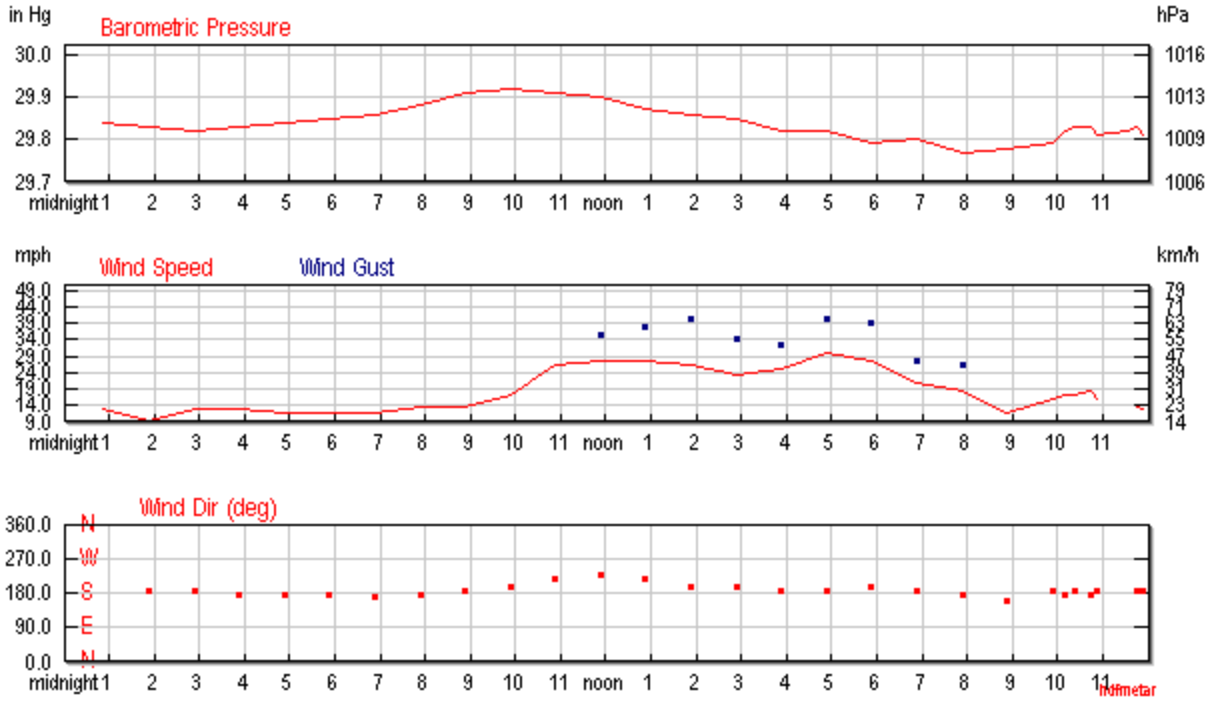
Fig. 7

6. The triangulated weather data that follows was taken from weatherunderground.com under weather history for Franklin Indiana, Bloomington Indiana and Indianapolis Indiana for the date of the pesticide spray application under examination in this case. The weather data for Franklin Indiana defaults to Shelbyville Indiana. Shelbyville Indiana is approximately 18 miles northeast of Franklin Indiana. Bloomington Indiana is approximately 32 miles southwest of Franklin Indiana and Indianapolis Indiana is approximately 22 miles north of Franklin Indiana.

Franklin-Shelbyville 18 miles NE

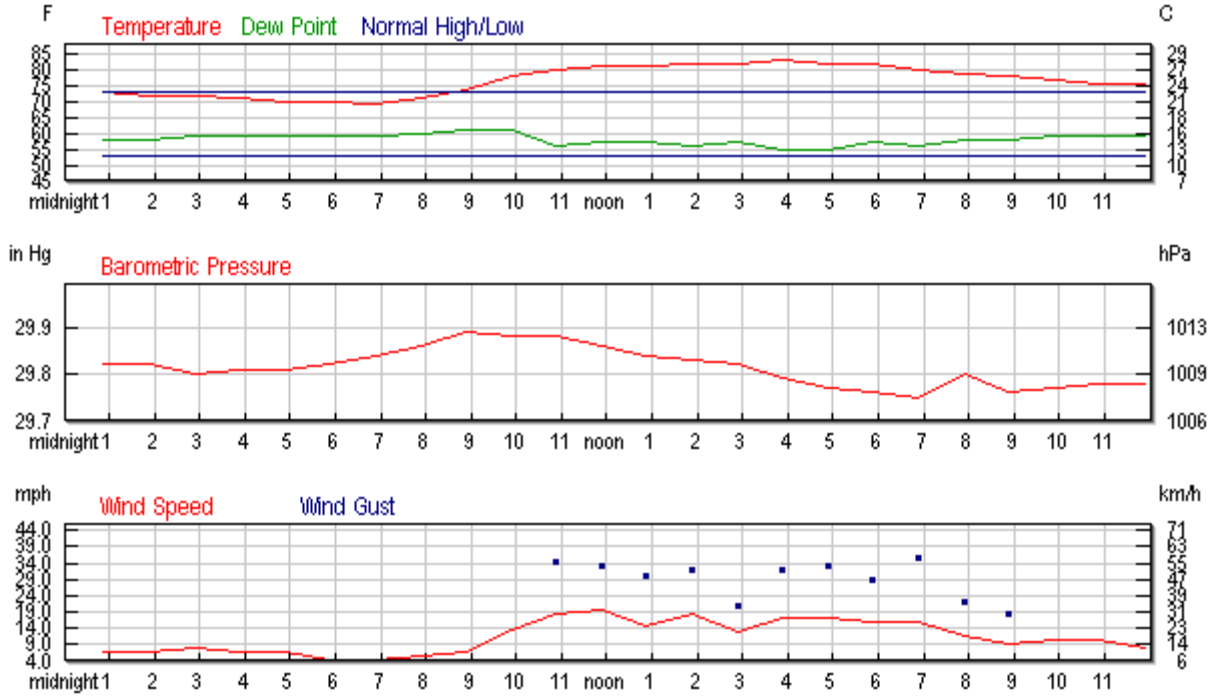
DATE	TIME	WIND DIRECTION	WIND SPEED
5-17-17	6:53am	South	11.5mph
5-17-17	7:53am	South	13.8 mph
5-17-17	8:53am	South	13.8 mph
5-17-17	9:53am	SSW	17.3 mph
5-17-17	10:53am	SW	26.5mph gusting to 35.7 mph

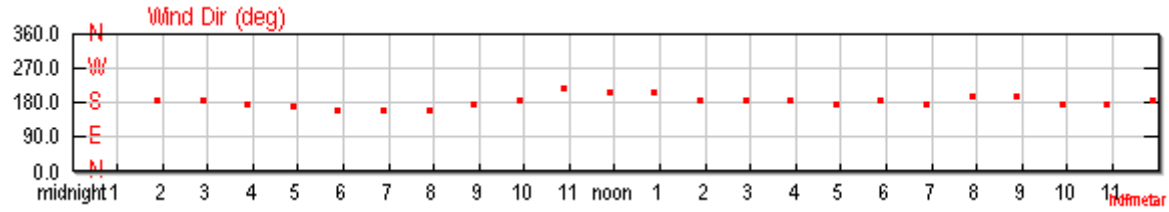




Indianapolis-Eagle Creek 22 miles N

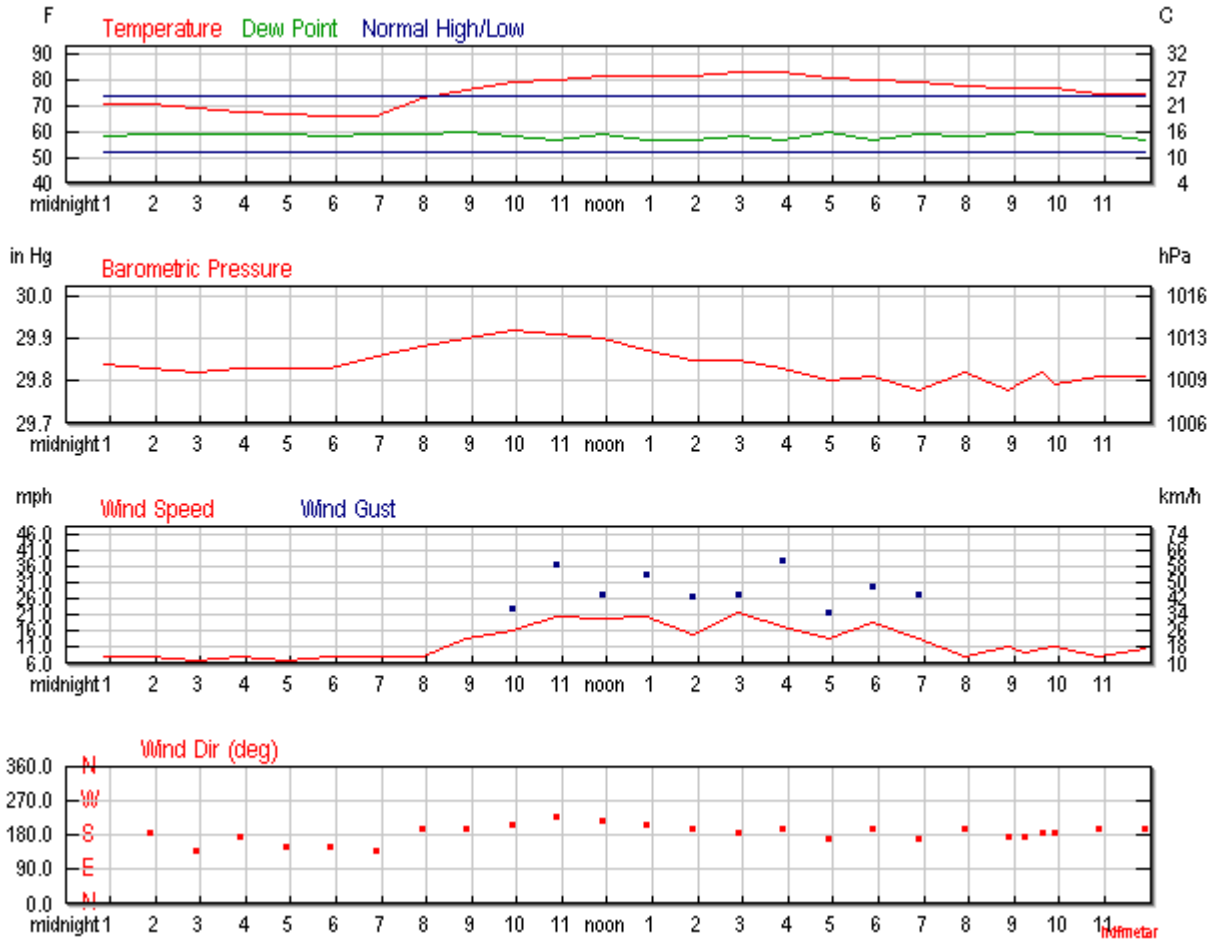
DATE	TIME	WIND DIRECTION	WIND SPEED
5-17-17	6:53am	SSE	4.6 mph
5-17-17	7:53am	SSE	5.8 mph
5-17-17	8:53am	South	6.9 mph
5-17-17	9:53am	South	13.8 mph gusting to 23 mph
5-17-17	10:53am	SW	18.4 mph gusting to 34.5 mph





Bloomington Indiana-32 miles SW

DATE	TIME	WIND DIRECTION	WIND SPEED
5-17-17	6:53am	SE	8.1 mph
5-17-17	7:53am	SSW	8.1 mph
5-17-17	8:53am	SSW	13.8 mph gusting to 23 mph
5-17-17	9:53am	SSW	16.1 mph gusting to 23 mph
5-17-17	10:53am	SW	20.7 mph gusting to 36.8 mph



7. On 6-9-17, I received the final report from PPDL on Diagnosis of the samples submitted. The report reads in part:

Final Report

"Leaf margin necrosis and interveinal chlorosis on the ash tree is indicative of injury from atrazine".

Joe Ikley
Weed Science Research Associate
Purdue University

"The spruce trees are suffering primarily from long term neglect, poor growing conditions, weed competition and Rhizosphaera needle cast. The dead branch material submitted would not be suitable for finding evidence of herbicide injury since it has been dead for some time, probably 6 months or longer since needles were absent even from the tips. Spruce spider mite also frequently causes significant damage to blue spruce. I saw none on this sample but they could be present on the living trees".

"The ash trees have sprouting from the base, often an indicator of damage by emerald ash borer. You may want to look for the "D" shaped borer exit holes in the trunk".

"Sprouting at the base can also result from old wounds such as lawn mower damage or cankers. No close up photos of the base of the tree were included to allow an evaluation".

Diagnosed By:
Tom Creswell
(creswell@purdue.edu) Completed Date: 6/9/2017

8. On Friday 12-29-17, I received an e-mail of the final report from the OISC Residue Laboratory for the analysis of the samples submitted in this case. The chart that follows is a copy and paste of that report.

OFFICE OF INDIANA STATE CHEMIST

Pesticide Residue Laboratory

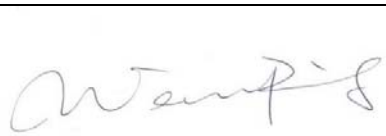
Lab Report

Case # 2017/0829		**Investigator: B. Baker**		
Sample #	Sample Description	Sample Matrix	**Amount Found**	
			Atrazine	Thiencarbazone -methyl
2017-323668	Trip Blank Swab Acetone	Swab	BDL	BDL
2017-323669	Control Sample Swab Acetone	Swab	3.16 ng/swab	BDL
2017-323670	Water Swab of a Maple Tree	Swab	NA	NA
2017-323671	Acetone Swab of Maple Tree	Swab	75.2 ng/swab	BQL
2017-323672	Water Swab of a Pear Tree	Swab	NA	NA
2017-323673	Acetone Swab of Pear Tree	Swab	158 ng/swab	3.58 ng/swab
2017-323674	Water Swab of an Ash Tree	Swab	NA	NA
2017-323675	Acetone Swab of an Ash Tree	Swab	58.8 ng/swab	BDL
2017-323676	Vegetation sample from maple tree	Veg	NA	NA

2017-323677	Vegetation sample from pear tree	Veg	NA	NA
2017-323678	Vegetation sample from ash tree	Veg	NA	NA
2017-323679	Water Swab of Veg in suspect field	Swab	NA	NA
2017-323680	Acetone Swab of Veg in suspect field	Swab	36.3 ng/swab	BDL
2017-323681	Vegetation sample from suspect field	Veg	NA	NA
2017-323682	Soil sample from the suspect field	Soil	NA	NA

PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC

LOQ =1 ng/swab

Signature		**Date**	6/23/17

9. The pesticide label for **Atrazine 90DF**, a Restricted Use Pesticide, reads in part, under the heading;
ENVIRONMENTAL HAZARDS

"*Do not apply when weather conditions favor drift from treated areas*".

There are also five label restrictions for setbacks under the same heading. All of the label required setbacks were met in this case.

The pesticide label for **Corvus**, a Restricted Use Pesticide, reads in part under the heading:
ENVIRONMENTAL HAZARDS

"*Do not apply when weather conditions favor drift from treated areas*".

There are also two label restrictions for setbacks under the same heading. All of the label required setbacks were met in this case.

Also under the heading;
SPRAY DRIFT MANAGEMENT
Wind Speed
"*Only apply this product when the potential for drift to adjacent non-target areas is minimal (e.g., when the wind is 10 MPH or less and is blowing away from sensitive areas)".*

10. **Conclusion:**

In this case, the respondent made a pesticide spray application of the pesticide products listed in paragraph 5 of this report. The pesticide spray application was made on May 17, 2017 from 7:00am to 10:36am to an agricultural crop field that borders the complainant's property to the north. The complainant believed the pesticide spray application made by the respondent overlapped his property line and drifted onto his property causing the injury symptoms seen in figures 1-5 of this report. It is highly likely a drift of the pesticide products occurred based on the facts that follow:

1. An examination of the weather history for the date and time of the pesticide spray application taken from weather underground.com history (para. 6), shows the prevailing wind direction to be blowing onto the complainant's property;

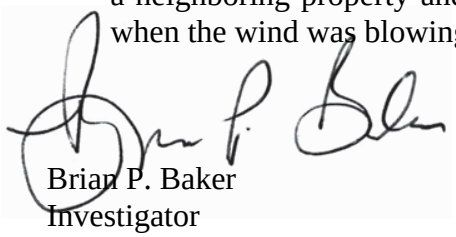
2. The results from PPDL (para. 7) state the injury symptoms present in the samples submitted are "indicative of injury from Atrazine";

3. The OISC Residue Laboratory (para. 8) show both active ingredients from the tank mix in the pesticide spray application, present in the samples submitted for analysis;

4. The pesticide spray application records submitted by the respondent indicate a 10 mph South wind on the date and time of the pesticide spray application;

5. The triangulated weather history in paragraph 6 indicates wind speeds in excess of 10 mph on 10 time periods and wind gusts in excess of 10 mph in 6 time periods.

11. There are two label violations in this case both noted in the label language in paragraph 9 of this report namely applying the pesticide products listed when the wind was blowing toward a neighboring property and off the target site along with applying the pesticide product(s) when the wind was blowing in excess of 10 mph.



Brian P. Baker — Date: January 2, 2018
Investigator

Disposition: Mike Sisson and Premier Ag were cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $250.00 was assessed. Consideration was given to the fact this was Mr. Sisson's first violation of similar nature. Consideration was also given to the fact two (2) restricted use pesticides were involved.

George N. Saxton — Draft Date: February 9, 2018
Compliance Officer — Final Date: May 18, 2018

CASE SUMMARY

Case #2017/0830

Complainant: Belinda Griffith
32701 Smith Trail
Walkerton, Indiana 46574
574-276-0568

Respondent: Charlie Houin — **Applicator**
Marvin Houin — **Private Applicator**
5125 West Shore Drive
Bremen, Indiana 46506
574-850-3879

1. On June 7, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report agricultural pesticide drift to her garden.

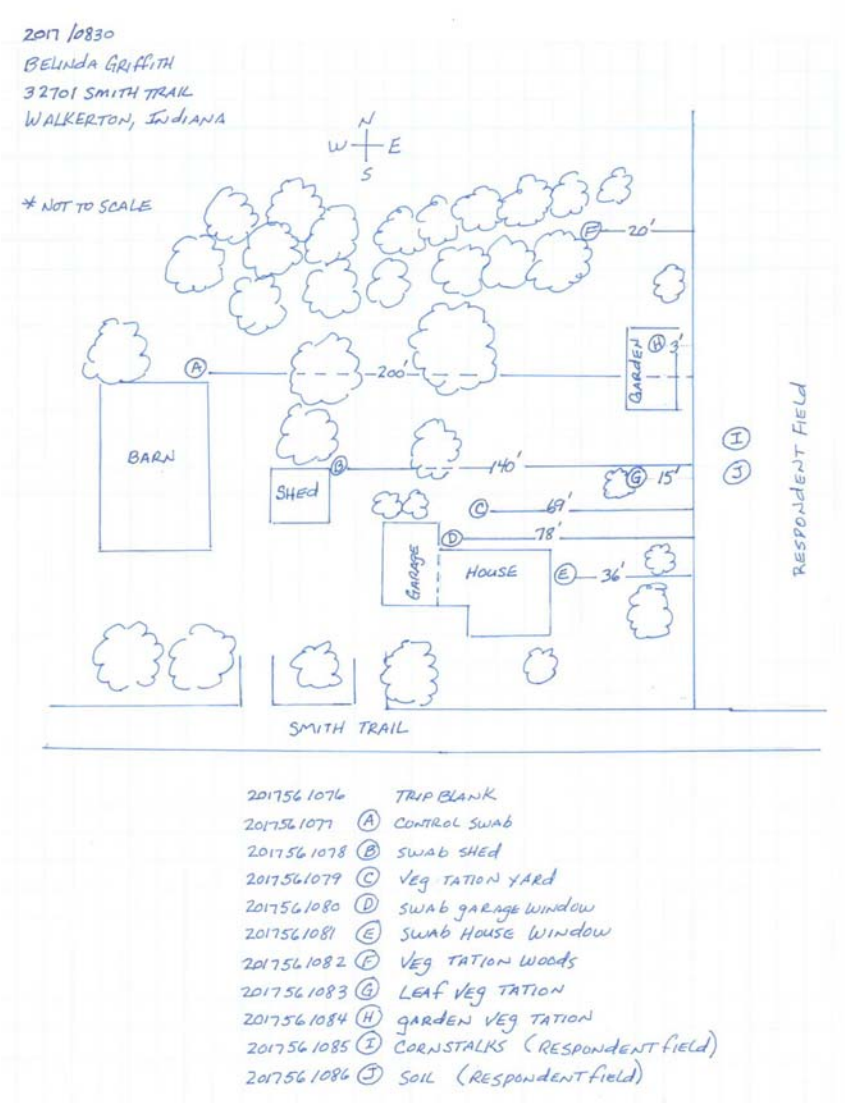
2. On June 9, 2017, I met with and issued a Notice of Inspection (NOI) to the complainant, Belinda Griffith. She told me the respondent sprayed an unknown chemical to the field east of her property on May 9, 2017 in "high winds". She said she believed it drifted onto her garden causing the vegetation to die.

3. I checked the garden area as well as other areas of the complainant's property for symptoms of herbicide exposure. I observed some necrosis and "bleaching" symptoms on garden vegetation. I also observed similar symptoms of other vegetation on the complainant's property. (See photos).




4. I obtained several vegetation samples for submission to the Purdue University Plant and Pest Diagnostic Lab (PPDL) for analysis. I placed the following vegetation samples in Mylar bags for submission to the OISC Residue Lab for analysis. (see diagram)

2017561077	Control Swab	2017561078	Swab Shed
2017561079	Vegetation Yard	2017561080	Swab Garage Window
2017561081	Swab House Window	2017561082	Vegetation Woods
2017561083	Leaf Vegetation	2017561084	Garden Vegetation
2017561085	Corn Stalks Respondent Field		
2017561086	Soil Respondent Field		



5. I made contact with the respondent, Charlie Houin. He told me he made a pesticide application on May 9, 2017 and a pesticide application on May 20, 2017 to the field next to the complainant's property. The most recent pesticide application of May 20 was **Atrazine 4L** (EPA #19713-11; active ingredient: atrazine) and **Corvus** (EPA #264-1066). I told him I would send a Pesticide Investigation Inquiry (PII) to be completed and returned.

6. I received the following information from PPDL: "*Interveinal chlorosis and necrosis on berry leaves is indicative of a photosystem II inhibitor like atrazine. Bleaching on leaves is indicative of a HPPD-inhibitor herbicide like tembotrione*" and

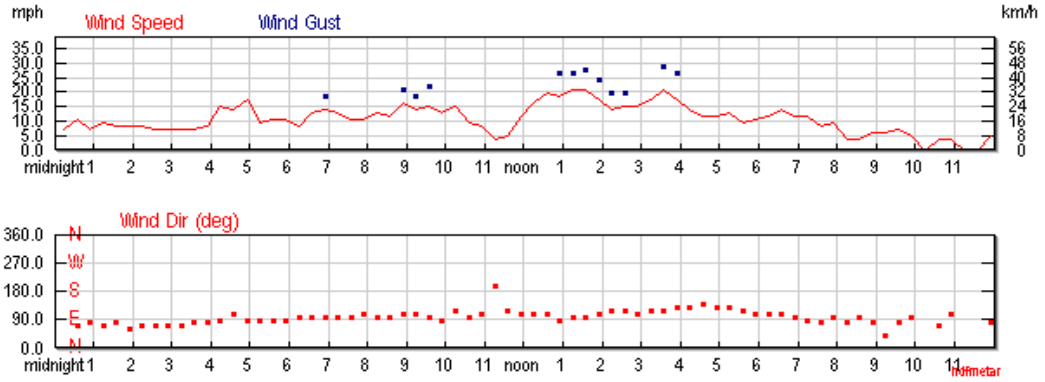
   "*Rhubarb: The plant had internal crown rot/decay caused by a borer*
   Polkweed: The mottle on these leaves is probably caused by a virus infection
   Raspberry: No disease or insects found
   Strawberry: Some spider mite injury is contributing to symptoms on lower leaves. The crowns showed some decay, probably due to anthracnose."

7. I received two completed PIIs from the respondent. I focused on the more recent pesticide application from May 20, 2017. According to the PII, the respondent made a pesticide application

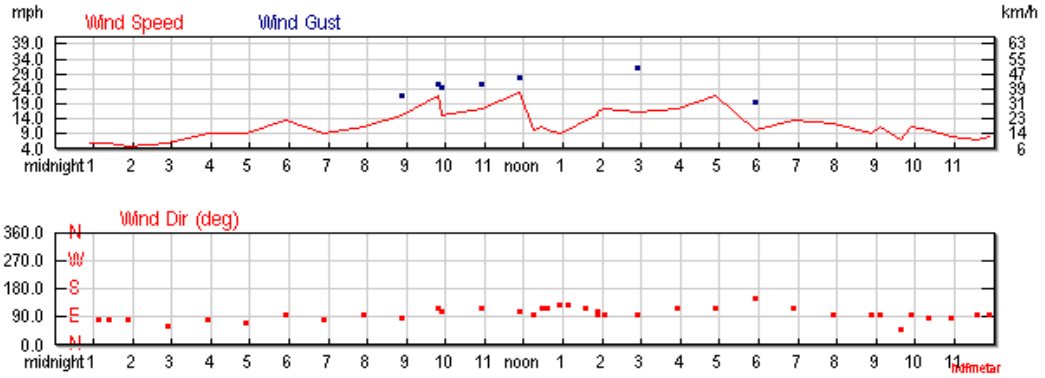
of **Atrazine 4L** (EPA #19713-11; active ingredient: atrazine) and **Corvus** (EPA #264-1066; active ingredient: thiencarbazone-methyl) beginning at 1:57pm and ending at 4:24pm. He recorded the wind as calm.

8. I obtained the weather date for May 20, 2017 from the www.wunderground.com. Weather data was obtained from Knox, Indiana (14 miles southeast from Walkerton, Indiana), South Bend, Indiana (19 miles northwest from Walkerton, Indiana) and Rochester, Indiana (32 miles southeast from Walkerton, Indiana). Each weather station recorded the wind blowing at least 10 miles per hour from the east in a westerly direction toward the complainant's property. (see tables)

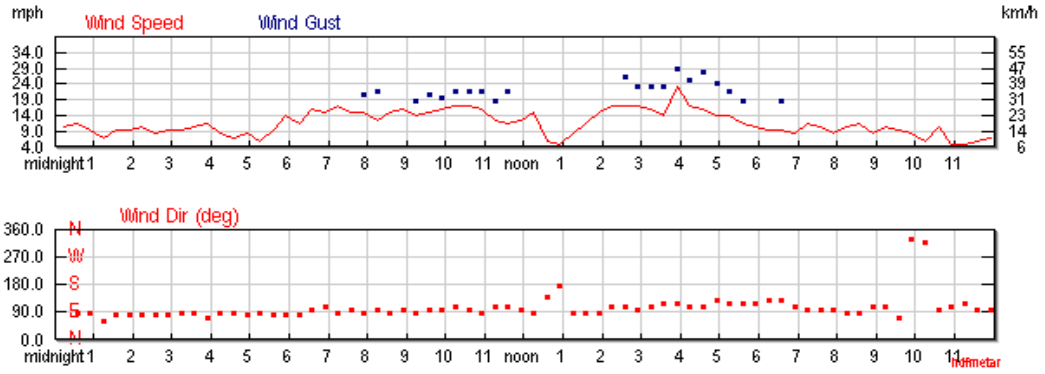
Knox, Indiana



South Bend, Indiana



Rochester, Indiana



9. I received the following analysis results from the OISC Residue Lab:

Case # 2017/0830		**Investigator: K. Gibson**			
Sample #	Sample Description	Sample Matrix	**Amount Found (ng/swab or ppb)**		
			Atrazine	Thiencarbazone-methyl	
2017-561076	Trip blank swab	Swab	BDL	BDL	
2017-561077	Control swab	Swab	39.4	BDL	
2017-561078	Swab of shed	Swab	317	3.2	
2017-561079	Vegetation from yard	Vegetation	144	3.5	
2017-561080	swab from garage window	Swab	75.0	BDL	
2017-561081	swab from house window	Swab	77.7	0.4	
2017-561082	vegetation from woods	Vegetation	122	5.5	
2017-561083	Leaf vegetation	Vegetation	396	3.3	
2017-561084	Garden vegetation	Vegetation	136	16.9	
2017-561085	Corn stalks from respondent field	Vegetation	5.8	BDL	
2017-561086	soil from respondent field	Soil	6.9	3.4	
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ	Swab	Atrazine=10 ng/swab; Thiencarbazone-methyl=0.2 ng/swab			
LOQ	Veg	Atrazine=0.3 ppb; Thiencarbazone-methyl=0.3 ppb			
LOQ	Soil	Atrazine=0.3 ppb; Thiencarbazone-methyl=0.3 ppb			
Signature			**Date**	10/10/17	

The label for Corvus reads in part, "*Do not apply when weather conditions favor drift from treated areas"*. And . . . "***Wind Speed*** *Only apply this product when the potential for drift to adjacent non-target areas is minimal (e.g., when the wind is 10 MPH or less and is blowing away from sensitive areas)"*.

10. After reviewing all available information from PPDL, OISC Residue Lab and the weather data, the respondent is in violation of the Corvus label.

Kevin W. Gibson
Investigator

Date: November 28, 2017

Disposition: Marvin Houin was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact this was his first violation of similar nature. Consideration was also given to the fact a restricted use pesticide was involved.

George N. Saxton
Compliance Officer

Draft Date: January 31, 2018
Final Date: March 22, 2018

CASE SUMMARY

Case #2017/0921

Complainant: Kyle Brown
1100 Wea Valley Drive
Lafayette, Indiana 47909
765-366-7352

Respondent: Cody Crowder
Alan McDonald — Private Applicator
Alan H. McDonald Farms
1759 E. US 136
Hillsboro, Indiana 47949
765-366-1703

1. On June 24, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report agricultural pesticide drift to his beans. He stated Mr. McDonald applied dicamba to his own field that drifted onto the Complainant's beans.

2. On June 26, 2017, I met with the complainant to conduct an on-site physical investigation of the alleged off-target pesticide movement incident reported to OISC. The complainant advised me that he believed his non-DT Liberty Link beans had been damaged by an application made by Mr. Crowder to a nearby DT soybean field.

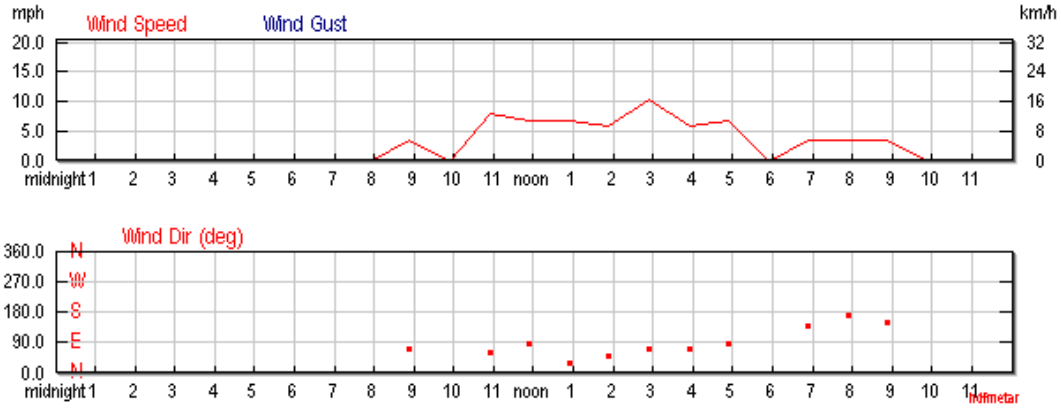
3. During my on-site investigation I did the following:
   a) Looked for and did not observe another potential dicamba application made in the area adjacent to the impacted site.
   b) Observed and photographed what I believed to be fairly uniform dicamba exposure symptoms (figure 1) throughout the complainant's non-target, non-DT soybean field (figure 2) located to the north of the target field. The target field and the complainant's non-target field were separated by a road approximately 33 feet. (figure 3).
   c) Collected soybean plant samples from impacted areas of the complainant's non-target soybean field for visual analysis by the Purdue Plant and Pest Diagnostic Lab (PPPDL).
   d) Collected samples for chemical analysis by the OISC Pesticide Residue Laboratory from the following areas:
      i) Impacted soybean plants from complainant's non-target soybean field;
      ii) Normal looking soybean plants from the target soybean field
      iii) Vegetation from road side area between two fields
   e) Made a diagram/map of the investigation site, depicting locations of relevant fields, sample collection, roads, structures, and other landmarks (figures 4&5).

4. On June 29, 2017, I collected written records from Cody Crowder. The written records and statements addressed the below items as follows:
   a) Application date & time: June 8, 2017; from 10:00am-12:00pm
   b) Target field: soybean field to the south of complainant's soybean field;

c) Pesticides: Engenia (dicamba) EPA Reg. #7969-345 & Roundup Powermax (glyphosate) EPA Reg. #524-549;
d) Application rate: 12.8 oz. per acre Engenia; 32 oz. per acre Powermax first pass 22 oz. per acre remainder of field
e) Adjuvants: AG 16098;
f) Nozzles: TTI 11004
g) Boom height: 22 inches
h) Ground speed: 12-15 mph
i) Winds: 8-12 mph from the northeast;
j) Applicator: Cody Crowder;
k) Certified supervisor: Alan McDonald;
l) Left a 110' untreated buffer next to non-target site: No
m) Checked registrant's web site before application: No
n) Checked Field Watch before application: No
o) Surveyed application site before application: Yes

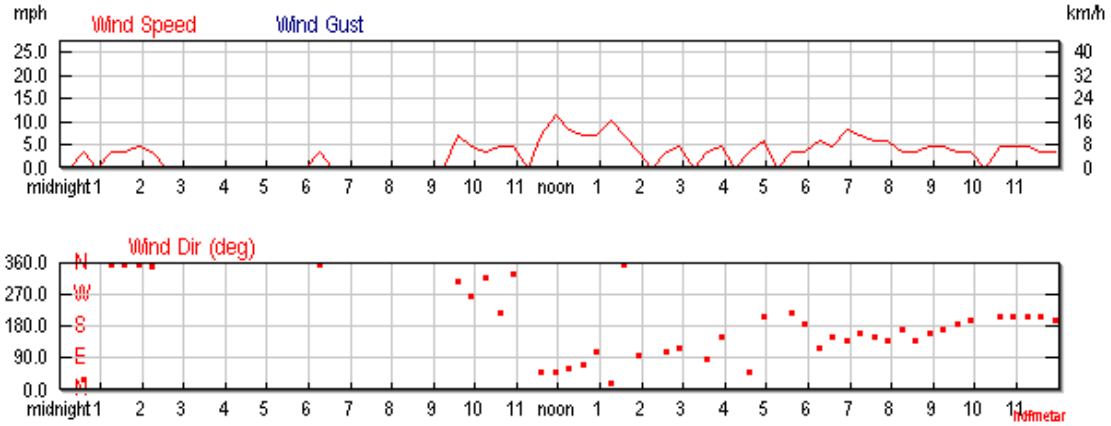
5. I searched wind data from www.weatherunderground.com for zip code 47949 in Hillsboro, Indiana for the reported dates and times of the application. The results of that search indicated that wind speeds and directions during the application were as follows:

June 8, 2017
As recorded at Lafayette 5-8 mph out of the east northeast



Lafayette Wind Data 22 Miles Northeast

June 8, 2017
As recorded at Danville 5-10 mph out of the northeast



Danville Wind Data 41 Miles Southeast

6. The winds would have been blowing away from the complainants field.

7. The report from the PPPDL states, *"Cupping of new leaves is indicative of injury from dicamba. Marginal chlorosis on leaves can be indicative of injury from glyphosate"*

8. The report from the OISC Pesticide Residue Laboratory states:

Case #	**2017/0921**			**Investigator**			**K. Neal**
Sample #	Sample Description	Amount of Analyte (ppb)					
		Matrix	**Dicamba**	**5-OH Dicamba**	**DCSA**	**Glyphosate**	**AMPA**
2017-220602	Soybean Veg McDonald Target Field 80 N	Veg	1.58	BDL	183	845	BDL
2017-220603	Soybean Veg Brown Field 80 N	Veg	BDL	BDL	BQL	BDL	BDL
2017-220604	Veg Sample Between McDonald and Brown Fields	Veg	1056*	13.2	19.3	1184	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC *minimum concentration reported due to amount exceeding calibration curve range.							
LOQ		Veg	2 ppb	2 ppb	0.2 ppb	25 ppb	125 ppb
Signature				**Date**		8/13/2017	

Figure One

Figure Two

Figure Three

Figure Four

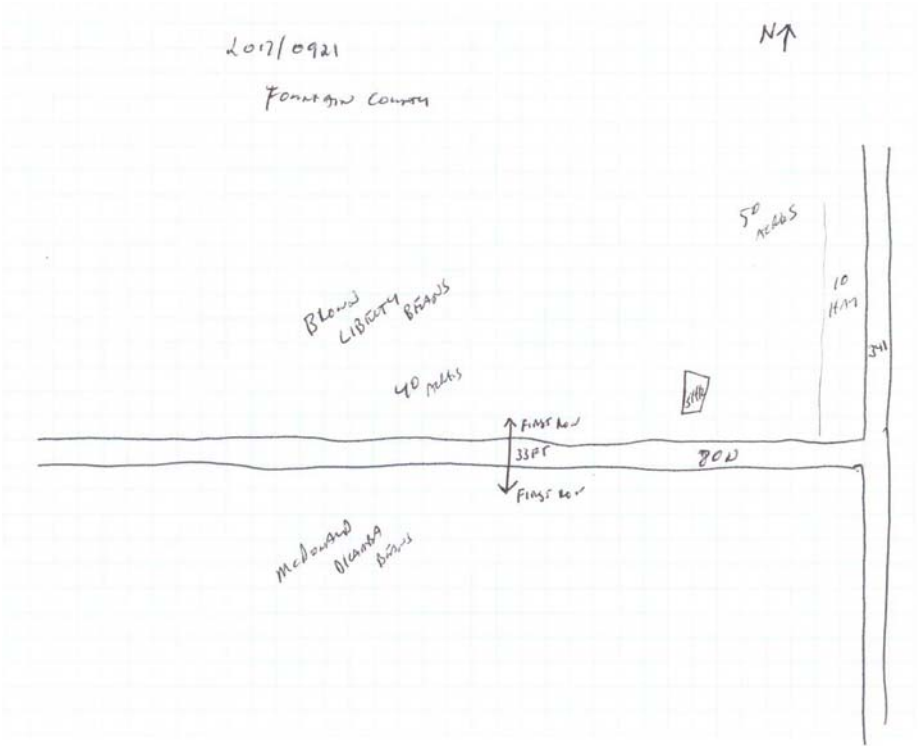


Figure Five

9. The PPPDL report and OISC residue lab, albeit BQL (below quantification limits this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC) suggests that dicamba from the application to the target field moved off-target to the complainant's non-target soybean field. The absence of any detectable glyphosate in the non-target soybeans, the 16 day period between application and sample collection, the higher water solubility of glyphosate compared to dicamba, and the significantly higher analytical limit of quantitation of glyphosate as compared to dicamba, make it difficult to determine if the dicamba moved off target from direct particle drift, application during a temperature inversion, or volatility at some point after the application.

10. The label for Engenia states, *"DO NOT allow herbicide solution to mist, drip, drift, or splash onto desirable vegetation because severe injury or destruction to desirable broadleaf plants could result."* The label also states, *"DO NOT tank mix any product with Engenia unless . . . You check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia . . ."* and *"The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available."*

Kevin W. Neal
Investigator

Date: November 17, 2017

Disposition: Cody Crowder of Alan H. McDonald Farms was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of sensitive crop registries and registrant's website.

Cody Crowder of Alan H. McDonald Farms was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton
Compliance Officer

Draft Date: January 31, 2018
Final Date: March 22, 2018

CASE SUMMARY

Case #2017/0924

Complainant: Marvin Graham
1748 W 1150 S
Ladoga, Indiana 47954
765-401-6233

Respondent: Strasburger Farms, Inc.
Colby Strasburger — Private Applicator
5618 W 1400 N
Russellville, Indiana 46175
765-366-1321

Co-Alliance — Licensed Business
Cory Fordice — Certified Applicator
403 E. Railroad Street
Russellville, Indiana 46175
765-435-2252

1. On June 22, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report agricultural pesticide drift of what he believed to be dicamba herbicide to his non-dicamba tolerant (DT) soybeans.

2. On June 26, 2017, I met with the complainant to conduct an on-site physical investigation of the alleged off-target pesticide movement incident reported to OISC. The complainant advised me that he believed his non-DT Liberty Link beans had been damaged by an application made by Co-Alliance and or Strasburger Farms, Inc. to a nearby DT soybean field.

3. During my on-site investigation I did the following:
   a) Observed and photographed what I believed to be fairly uniform dicamba exposure symptoms (figure 1) throughout the complainant's non-target, non-DT soybean field (figure 2) located to the north of the Strasburger DT soybean target field. The Strasburger target field and the complainant's non-target field were separated by a county road and vegetative roadside areas totaling 36 feet (figures 3 and 4).
   b) The Co-Alliance target field and the complainant's non-target field were separated by two feet.
   c) Collected soybean plant samples from impacted areas of the complainant's non-target soybean field for visual analysis by the Purdue Plant and Pest Diagnostic Lab (PPPDL).
   d) Collected samples for chemical analysis by the OISC Pesticide Residue Laboratory from the following areas:
      i) Impacted soybean plants from complainant's non-target soybean field;
      ii) Normal looking soybean plants from the target soybean field; and
      iii) Roadside vegetation from the area in between the two soybean fields.
   e) Made a diagram/map of the investigation site, depicting locations of relevant fields, sample collection, roads, structures, and other landmarks (figure 5).

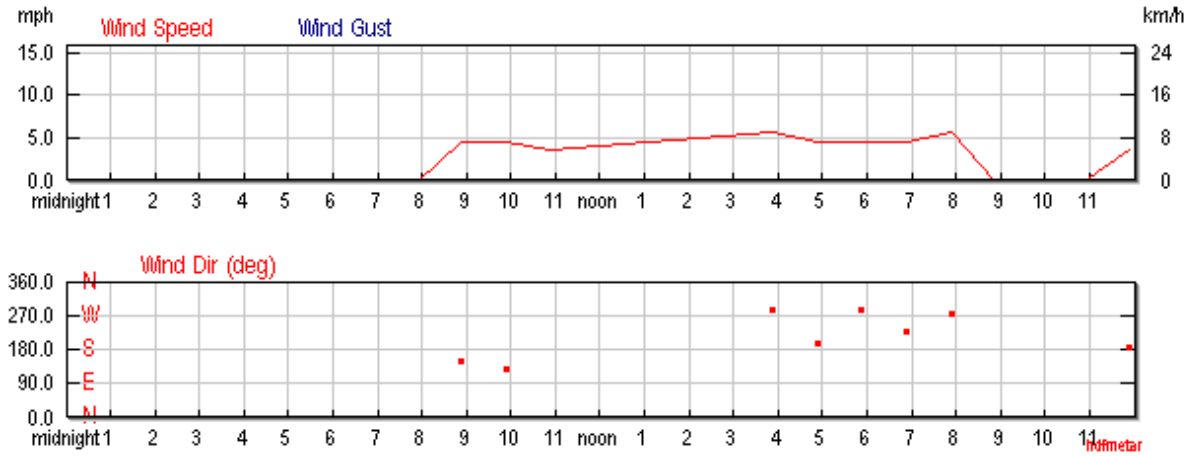
Figure One

Figure Two

4. On June 26, 2017, I collected written records from the applicator company Co-Alliance. The written records and statements addressed the below items as follows:
   a. Application date & time: June 2, 2017; from 11:00am-2:20pm;
   b. Target field: soybean field to the west of complainant's soybean field;
   c. Pesticides: Xtendimax (dicamba) EPA Reg. #524-617 & Roundup Powermax (glyphosate) EPA Reg. #524-549;
   d. Application rate: 22 oz. per acre;
   e. Adjuvants: Class Act Ridion & AG16098;
   f. Nozzles: TTI 11004
   g. Boom height: 24 inches
   h. Ground speed: 14.5 mph
   i. Winds: 3-5 mph from the southwest;
   j. Applicator: Cory Fordice;
   k. Certified supervisor: not applicable;
   l. Left a 110' untreated buffer next to non-target site: NO
   m. Checked registrant's web site before application:
   n. Checked Field Watch before application: applicator did not however someone in the office does that and provides information if.
   o. Surveyed application site before application: yes

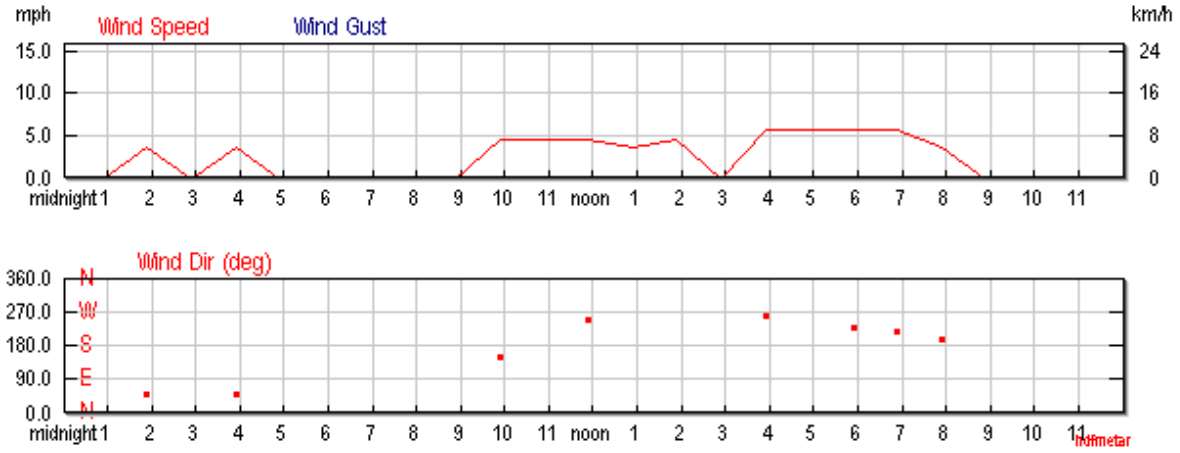
5. I searched wind data from www.weatherunderground.com for zip code 47954 in Ladoga, Indiana for the reported date and time of the application. The results of that search indicated that wind speeds and directions during the application were as follows:

As recorded at Eagle Creek 4-5mph unknown direction



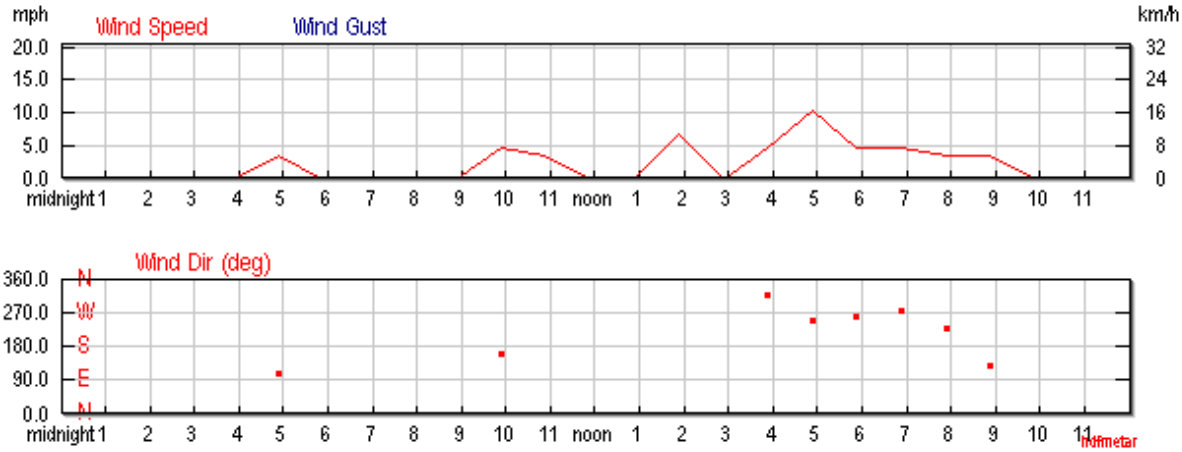
Eagle Creek Wind Data 38 Miles East

As recorded at Lafayette 4-5 mph out of the west southwest



Lafayette Wind Data 40 Miles North

As recorded at Terre Haute 0-6mph unknown direction

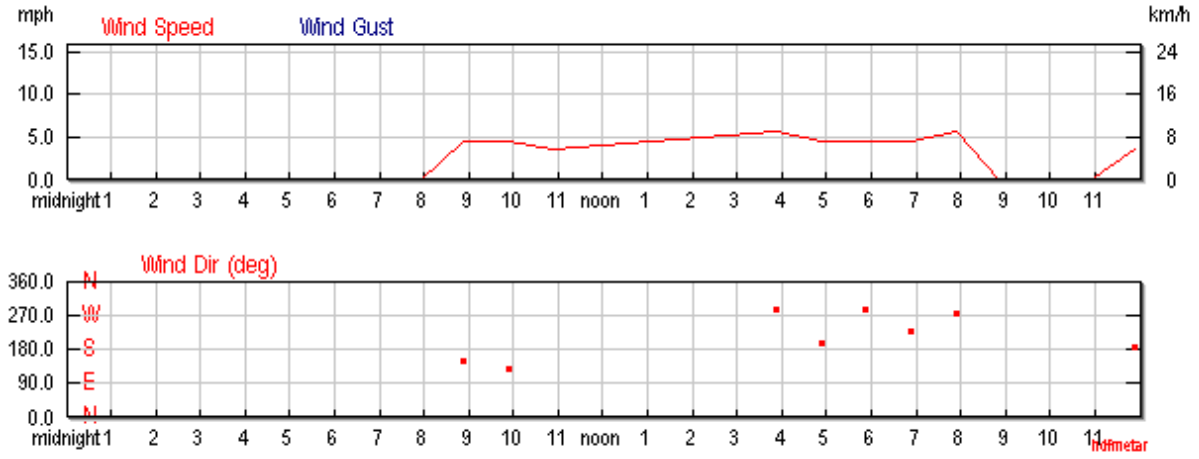


Terre Haute Wind Data 58 Miles Southwest

6. On June 26, 2017, I collected written records from the applicator Strasburger Farms, Inc. The written records and statements addressed the below items as follows:
   a. Application date & time: June 2, 2017; from 3:30-4:00pm;
   b. Target field: soybean field to the south of complainant's soybean field;
   c. Pesticides: Xtendimax (dicamba) EPA Reg. #524-617 & Roundup Powermax (glyphosate) EPA Reg. #524-549;
   d. Application rate: not provided
   e. Adjuvants: Class Act Ridion & AG16098
   f. Nozzles: TTI 11004
   g. Boom height: 25 inches
   h. Ground speed: 10 mph
   i. Winds: 3-5 mph from the south
   j. Applicator: Colby Strasburger
   k. Certified supervisor: not applicable
   l. Left a 110' untreated buffer next to non-target site: NO, stated used the road 40-45 feet
   m. Checked registrant's web site before application: NO
   n. Checked Field Watch before application: NO
   o. Surveyed application site before application: yes

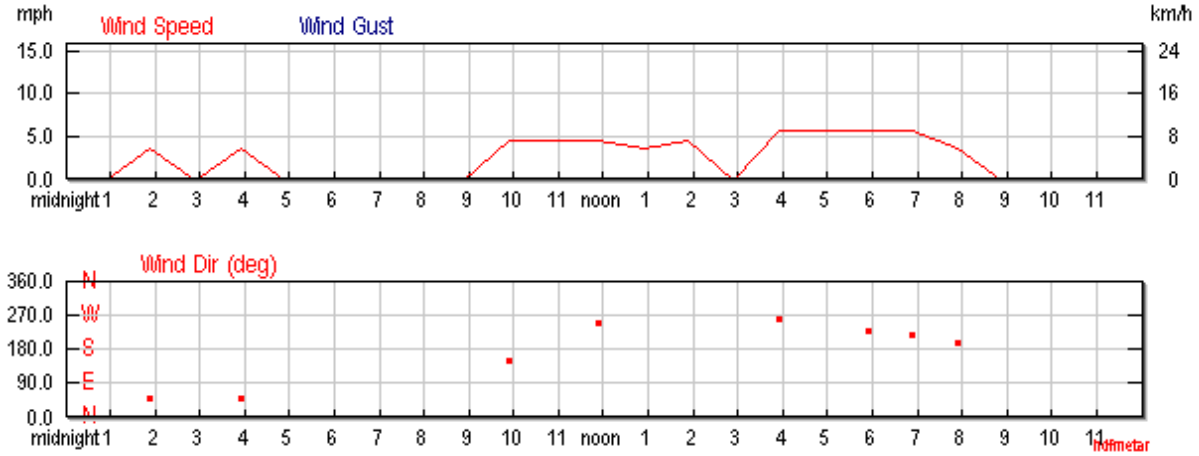
7. I searched wind data from www.weatherunderground.com for zip code 47954 in Ladoga, Indiana for the reported date and time of the application. The results of that search indicated that wind speeds and directions during the application were as follows:

As recorded at Eagle Creek 5mph out of the west



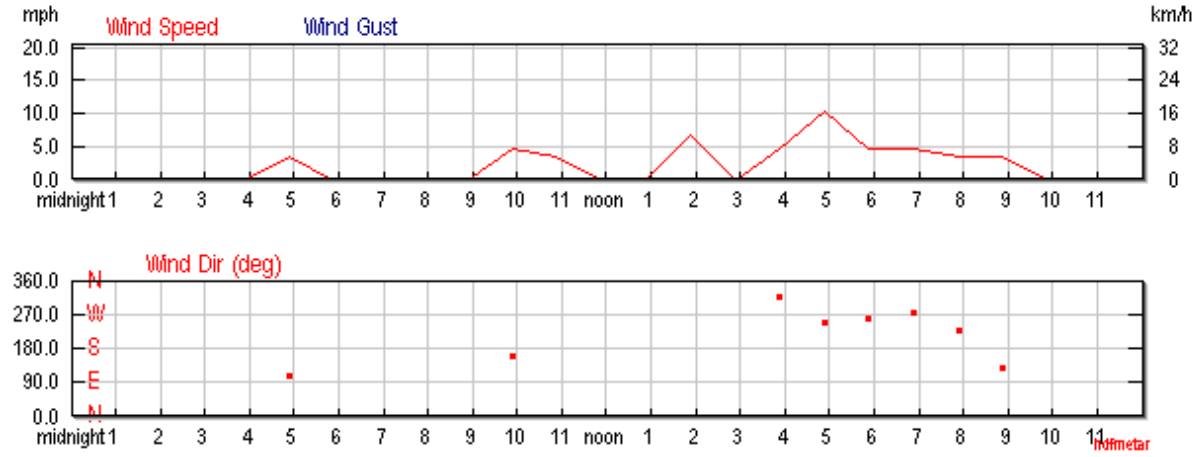
Eagle Creek Wind Data 38 Miles East

As recorded at Lafayette 3-5 mph out of the west southwest



Lafayette Wind Data 40 Miles North

As recorded at Terre Haute 3-5mph unknown direction



Terre Haute Wind Data 58 Miles Southwest

8. The report from the PPPDL states, *"Cupping of new leaves is indicative of injury from dicamba. Puckering on some of the other leaves could be indicative of injury from dicamba, or a POST application of a group 15 herbicide."*

Figure Three

Figure Four

9. The report from the OISC Pesticide Residue Laboratory states:

Case #	**2017/0924**			**Investigator**		**K. Neal**	
Sample #	Sample Description	Amount of Analyte (ppb)					
		Matrix	**Dicamba**	**5-OH Dicamba**	**DCSA**	**Glyphosate**	**AMPA**
2017-220599	Soybean Veg Strasburger Target Field 1100 S	Veg	BDL	BDL	23.4	448	BDL
2017-220600	Soybean Veg Graham Field 1100 S	Veg	16.3	BDL	BQL	BDL	BDL
2017-220601	Veg Sample Between Strasburger and Graham 1100 S	Veg	24.9	BDL	0.593	57.1	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC							
LOQ	Vegetation		2 ppb	2 ppb	0.2 ppb	25 ppb	125 ppb
Signature				**Date**		8/13/2017	

10. The labeling for Xtendimax states, PROTECTION OF SENSITIVE AREAS:
"DO NOT APPLY this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops, including but not limited to, commercially grown tomatoes and other fruiting vegetables (EPA crop group 8), cucurbits (EPA crop group 9), and grapes."

11. The Xtendimax labeling further states, *"Do not allow contact of herbicide with foliage, green stems, exposed non-woody roots of crops, and desirable plants, including beans, cotton, flowers, fruit trees, grapes, ornamentals, peas, potato, soybean, sunflower, tobacco, tomato, and other broadleaf plants because severe injury or destruction may result including plants in a greenhouse."*

12. The labeling continues to state, *"Before making an application, the applicator must survey the application site for neighboring non-target susceptible crops. The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site."*

13. The PPPDL report, the OISC Lab report, and the wind direction data suggest that dicamba moved off-target to the complainant's non-target non-DT soybean field from the dicamba application to one or more of the DT tolerant target soybean fields. However, the absence of any detectable glyphosate in the non-target soybeans; the 25 day period between application and sample collection, the higher water solubility of glyphosate compared to dicamba; and the significantly higher analytical limit of quantitation of glyphosate as compared to dicamba; make it difficult to determine if the dicamba moved off target from direct particle drift, application during a temperature inversion, or volatility at some point after the application. Regardless, the wind direction data supports that the Xtendimax was applied when the wind was blowing toward the sensitive non-DT soybeans.

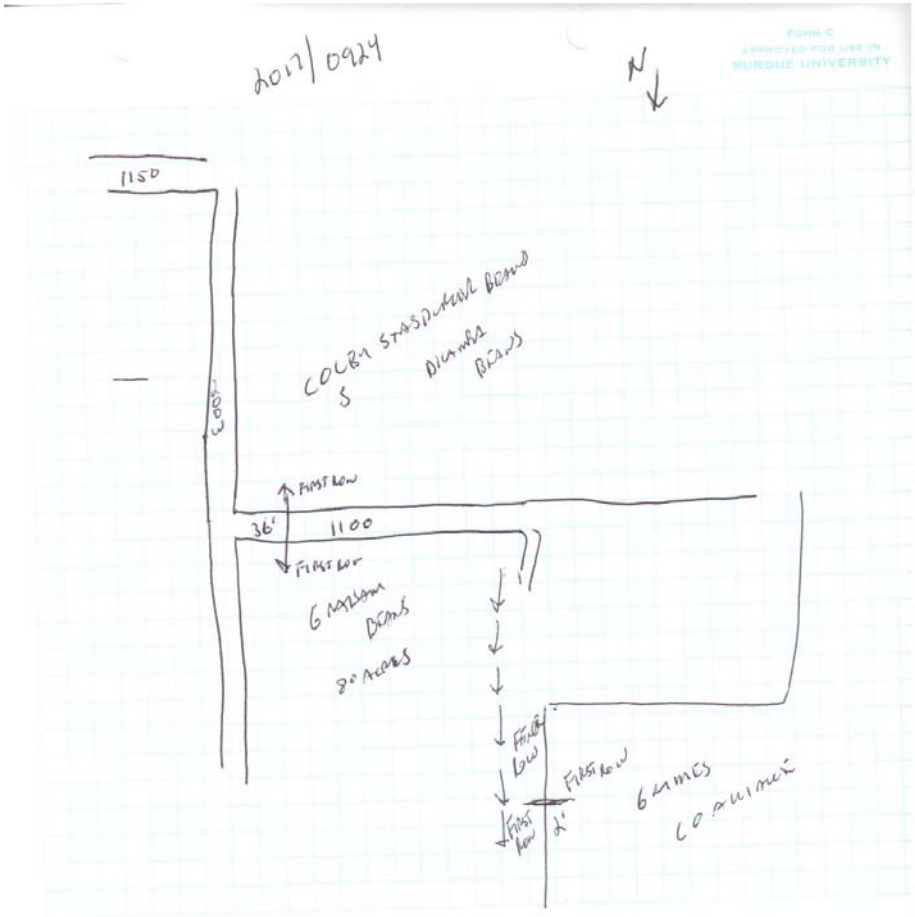


Figure Five

Kevin W. Neal
Investigator

Date: August 29, 2017

DISPOSITION: Strasburger Farms, Inc. was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding protection of sensitive areas; specifically for applying when wind is blowing towards susceptible crops; not checking manufacturer's website before application and for not checking Field Watch or any other sensitive crop registry. A civil penalty in the amount of $100.00 was assessed for this violation.

Cory Fordice and Co-Alliance were cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding protection of sensitive areas, specifically for applying when wind is blowing towards susceptible crops. A civil penalty in the amount of $250.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: September 18, 2017
Final Date: April 4, 2018

CASE SUMMARY

Case #2017/0929

Complainant: Jon Shroyer
11280 N. Old Granville Road
Albany, Indiana 47320
765-730-9301

Respondent: Adam Sieber — Certified Applicator
3101 E 700 N
Muncie, Indiana 47303
765-741-0946

1. On June 27, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report dicamba agricultural pesticide drift to his soybeans.

2. On July 4, 2017, I met with Mr. Shroyer at his soybean field. He stated approximately two weeks prior, he observed curling of leaves on his soybeans in the field located on the north side of CR 700 N just west of CR 300 E. He stated he felt this was consistent with damage from dicamba and stated Mr. Adam Sieber had applied Xtendimax herbicide to the soybean field on the south side of CR 700 N. I asked Mr. Shroyer if he had applied any pesticides to his soybean field and he stated he had applied a pre-emergent application of Sencore herbicide with the active ingredient metribuzin, Authority First herbicide with the active ingredients sulfentrazone and cloransulam and Abundant herbicide with the active ingredient glyphosate.

3. I observed some curling of the leaves symptoms to the soybeans in Mr. Shroyer's field. The symptoms appeared to be in an irregular pattern, consistent to drift. I then took photographs of the area, showing the location of the fields and the symptoms to the soybeans in Mr. Shroyer's field. I also collected soil and vegetation samples from the target soybean field, along with soil and vegetation samples from the complainant's field. All of the samples were labeled and submitted to the OISC residue lab. I also collected soybean plant samples from the complainant's field and submitted them to the Purdue Plant and Pest Diagnostics Lab (PPDL). I also researched the area and found no other pesticide applications with dicamba that may have affected the complainant's field. The following are photographs taken from the scene.




4. I then made contact with Mr. Adam Sieber. He stated he had applied Xtendimax herbicide EPA Reg. #524-617 with the active ingredient dicamba and Roundup Power Max herbicide EPA Reg. #524-549 with the active ingredient glyphosate to his soybean field on May 30, 2017 between the hours of 8:41 am -10:21 am. He stated he followed the labels for the pesticides he applied. He stated he had left a 110 foot buffer along the east side of his soybean field. I advised Mr. Sieber, I would be sending a Pesticide Investigation Inquiry (PII) to him. Mr. Sieber received the PII, completed it and returned it to OISC.

The PII is in this case file. Mr. Sieber also provided me with the pesticide application record for this application. The application record is in this case file. The following are the label requirements for Xtendimax herbicide:

- Application rate of Xtendimax: 22 oz. per acre
- Adjuvants: Kabak Plus and Capsule
- Equipment: Rogator RG 1100 120 ft. stainless steel boom
- Nozzles: Tee Jet TTI 11005 with 15 inch spacing
- Winds per PII: West SW 5-7 mph
- Applicator: Adam Sieber
- 110 foot untreated buffer left on east side of target field
- No untreated buffer left on the north side of target field
- Ground speed: 14.2 mph
- Boom height: 18 inches above soybean canopy
- Checked registrants website prior application: yes
- Checked Field Watch prior to application: yes
- Surveyed site prior to application: yes

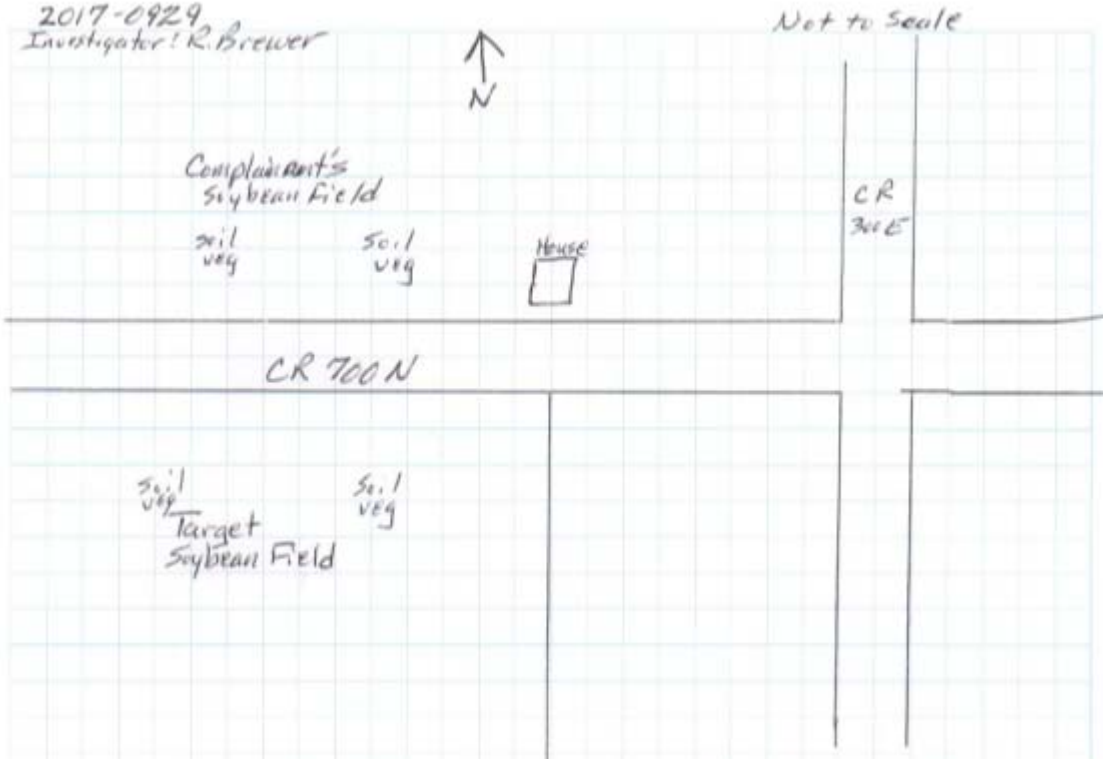
5. I then researched the Weather Underground website for weather conditions at nearest reporting stations to the target field on the date and time of the pesticide application. The results are as follows:
    - K9UO Portland approximately 10 miles north, winds at 8:40 am SW at 5 mph and at 10:21 am W at 7 mph. No indication of temperature inversion.
    - M Kress Field approximately 10 miles south, winds at 8:42 am WSW at 8 mph and at 10:21 am W at 12 mph. No indication of temperature inversion.
    - Fort Recovery approximately 20 miles east, winds at 8:42 am W at 5 mph and at 10:23 am W at 6 mph. No indication of temperature inversion.

6. On July 9, 2017, I received a report for PPDL. The report stated, "*Strapping and elongation of leaves is indicative of injury from a growth regulator herbicide"*. A copy of the PPDL report is in this case file.

7. On August 20, 2017, I received a report from the OISC residue lab. The report indicated the dicamba metabolite DCSA was detected in the vegetation samples collected from the target field. The report further indicated neither dicamba nor its metabolites were detected in the vegetation samples collected from the complainant's soybean field. The following is a copy of the OISC residue lab results.

Case # 2017/0929		**Investigator: B. Brewer**			
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**		
			Dicamba	**5-OH Dicamba**	**DCSA**
2017-33-4879	Vegetation target field	Vegetation	BDL	BDL	26.7
2017-33-4880	Vegetation buffer zone target field	Vegetation	BDL	BDL	13.6
2017-33-4881	Vegetation complainants field	Vegetation	BDL	BDL	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ	Vegetation		2 ppb	2 ppb	0.2 ppb
Signature			**Date**	8/20/17	

8. The following is a diagram of the area, indicating the location of the fields and the sample collection locations:



9. Although Mr. Sieber followed most of the label requirements for Xtendimax herbicide, the winds were blowing per his PII, W SW which would be towards the complainant's soybean field. I researched the label for Xtendimax herbicide and it stated, "*Do not apply when wind is blowing in the direction of neighboring sensitive crops*".

Robert D. Brewer
Investigator

Date: January 29, 2018

Disposition: Adam Sieber was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when wind is blowing towards a neighboring sensitive crop. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 15, 2018
Final Date: May 1, 2018

CASE SUMMARY

Case #2017/0935

Complainant: Doug Trout
6422 N 300 E
Brazil, Indiana 47834
812-986-2526 home
812-605-1085 cell

Respondent: Rose Brothers Farms
Mike Rose — Unlicensed
1751 N. Midway Road
Rockville, Indiana 49872
765-230-6058

1. On June 28, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On June 30, 2017, I met with the complainant to conduct an on-site physical investigation of the alleged off-target pesticide movement incident reported to OISC. The complainant advised me that he believed his non-DT Liberty Link beans had been damaged by an application made by Mr. Rose to a nearby DT soybean field.

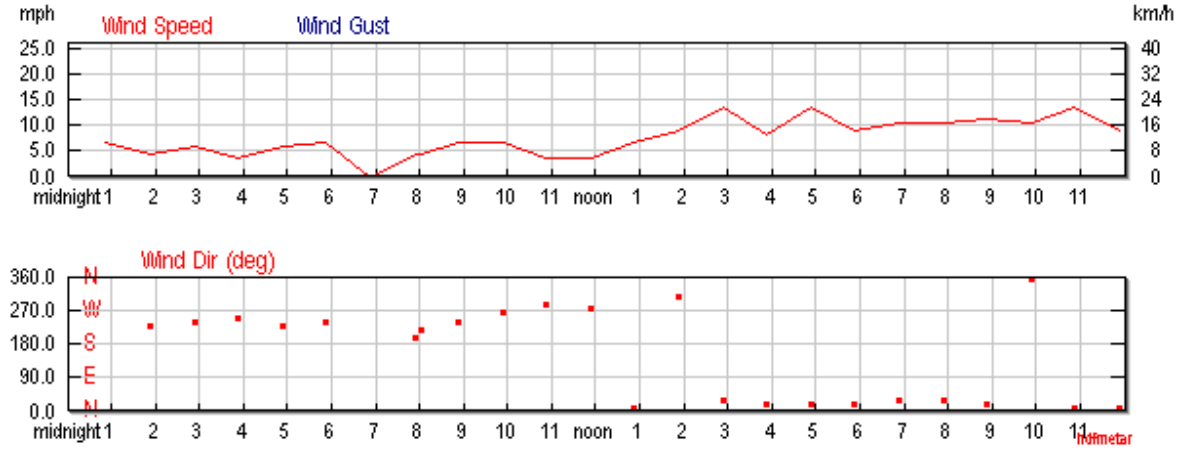
3. During my on-site investigation I did the following:
   a) Looked for and did not observe another potential dicamba application made in the area adjacent to the impacted site.
   b) Observed and photographed what I believed to be fairly uniform dicamba exposure symptoms (figure 1) throughout the complainant's non-target, non-DT soybean fields (figure 2) located to the south of the target field. The target field and the complainant's non-target field were separated by a gravel road 42 feet. (figure 3)
   c) Collected soybean plant samples from impacted areas of the complainant's non-target soybean field for visual analysis by the Purdue Plant and Pest Diagnostic Lab (PPPDL).
   d) Collected samples for chemical analysis by the OISC Pesticide Residue Laboratory from the following areas:
      i) Impacted soybean plants from complainant's non-target soybean fields;
      ii) Normal looking soybean plants from the target soybean fields.
   e) Made a diagram/map of the investigation site, depicting locations of relevant fields, sample collection, roads, structures, and other landmarks (figure 4).

4. On July 7, 2017, I collected written records from the applicator Mike Rose. The written records and statements addressed the below items as follows:
   a) Application dates & times: June 5, 2017 10:30am
      June 26, 2017 9:30am
   b) Target field: soybean field along county road 700 N east of county road 400 E in Clay County
   c) Pesticides: Xtendimax (dicamba) EPA Reg. #524-617 & Roundup PowerMax (glyphosate) EPA Reg. #524-549;

d) Application rate: 20 oz. per acre Xtendimax; 26 oz. per acre PowerMax
e) Adjuvants: Class Act Ridion & AG16098;
f) Nozzles: TTI 11004
g) Boom height: 24 inches
h) Ground speed: 4 mph on end rows 7-8 mph in field
i) Winds: June 5, 2017 3-7 mph out of the west;
June 26, 2017 5-12 out of the west;
j) Applicator: Mike Rose;
k) Certified supervisor: not applicable;
l) Left a 110' untreated buffer next to non-target site: no
m) Checked registrant's web site before application: no
n) Checked Field Watch before application: no
o) Surveyed the site before application? no

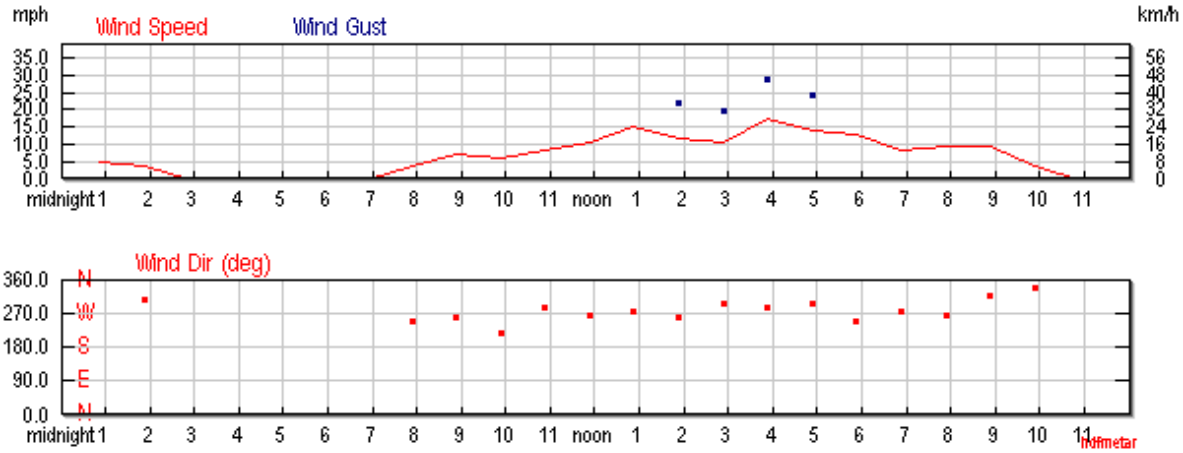
5. I searched wind data from www.weatherunderground.com for zip code 47834 in Brazil, Indiana for the reported dates and times of the applications. The results of that search indicated that wind speeds and directions during the application were as follows:

June 5, 2017
As recorded at Terre Haute 3-7 mph out of the west



Terre Haute Wind Data 10 Miles Southwest

June 26, 2017
As recorded at Terre Haute 5-10 mph out of the west



Terre Haute Wind Data 10 Miles Southwest

6. The report from the PPPDL states, *"New trifoliates are cupped and puckered which is indicative of injury from dicamba."*

7. The report from the OISC Pesticide Residue Laboratory states:

Case #	**2017/0935**			**Investigator**			**K. Neal**
Sample #	Sample Description	Amount of Analyte (ppb)					
		Matrix	**Dicamba**	**5-OH Dicamba**	**DCSA**	**Glyphosate**	**AMPA**
2017-220617	Soybean sample Trout field	Veg	8.27	BDL	BDL	27.8	BDL
2017-220618	Vegetation sample between Trout Rose beans	Veg	656	22.1	17.0	1916	BDL
2017-220619	Soybean sample Rose beans	Veg	1136*	BDL	808*	29590	599
2017-220620	Trout soybean southeast corner	Veg	2.20	BDL	BDL	14.4	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC *minimum concentration reported due to amount exceeding calibration curve range.							
LOQ	Vegetation		2 ppb	2 ppb	0.2 ppb	25 ppb	125 ppb
Signature					**Date**		8/13/2017

8. The PPPDL report and OISC residue lab data suggest that dicamba from the application to the target field moved off-target to the complainant's non-target soybean field. The wind direction being nearly parallel to the non-target field makes it difficult to determine if the dicamba moved off target from direct particle drift, application during a temperature inversion, or volatility at some point after the application. The presence of glyphosate in the complainants Liberty Link beans would indicate that at some point there must have been a direct particle drift. Slight change in the wind direction during application may have been a factor.

Figure One

Figure Two

Figure Three

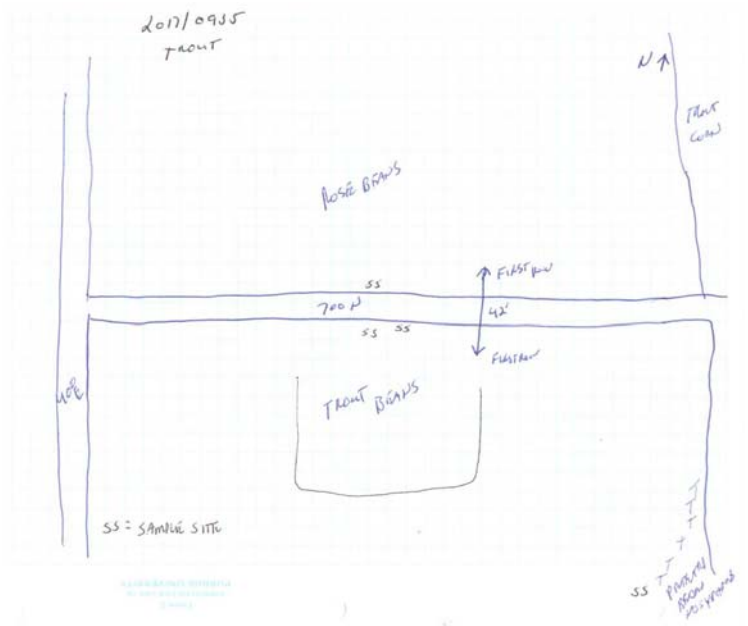


Figure Four

9. The label for Xtendimax states, *"Before making an application the applicator must survey the application site for neighboring non-target sensitive crops. The applicator must also consult sensitive crop registries to identify any commercial specialty of certified organic crops that may be located near the application site."* And *"Do Not tank mix any product with Xtendimax with VaporGrip Technology unless: You check the list of tested products found not to adversely affect the offsite movement potential of Xtendimax with VaporGrip Technology at www.xtendimaxapplicationrequirements.com no more than 7 days before applying Xtendimax with VaporGrip Technology." "Do not allow herbicide solution to mist, drip, drift or splash onto desirable vegetation because severe injury or destruction to desirable broadleaf plants could result."*

10. The label for Roundup PowerMax states, *"AVOID CONTACT OF THIS HERBICIDE WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OF CROPS (EXCEPT AS SPECIFIED FOR INDIVIDUAL ROUNDUP READY® CROPS), DESIRABLE PLANTS AND TREES, AS SEVERE INJURY OR DESTRUCTION COULD RESULT."*

Kevin W. Neal
Investigator

Date: January 26, 2018

Disposition: Mike Rose was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the application site, checking registrant's website and local sensitive crop registry before application.

Mike Rose was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 6, 2018
Final Date: April 17, 2018

CASE SUMMARY

Case #2017/0953

Complainant: Mike Mitchell
11998 S. SR 47
Waveland, Indiana 47989
765-918-4951
765-366-0253 son Matt

Respondent: Co-Alliance — Licensed Business
Cory Fordice — Certified Applicator
403 E. Railroad Street
Russellville, Indiana 46175
765-435-2252

1. On July 3, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On July 6, 2017, I met with the complainant to conduct an on-site physical investigation of the alleged off-target pesticide movement incident reported to OISC. The complainant advised me that he believed his non-DT Liberty Link beans had been damaged by an application made by Co-Alliance to a nearby DT soybean field.

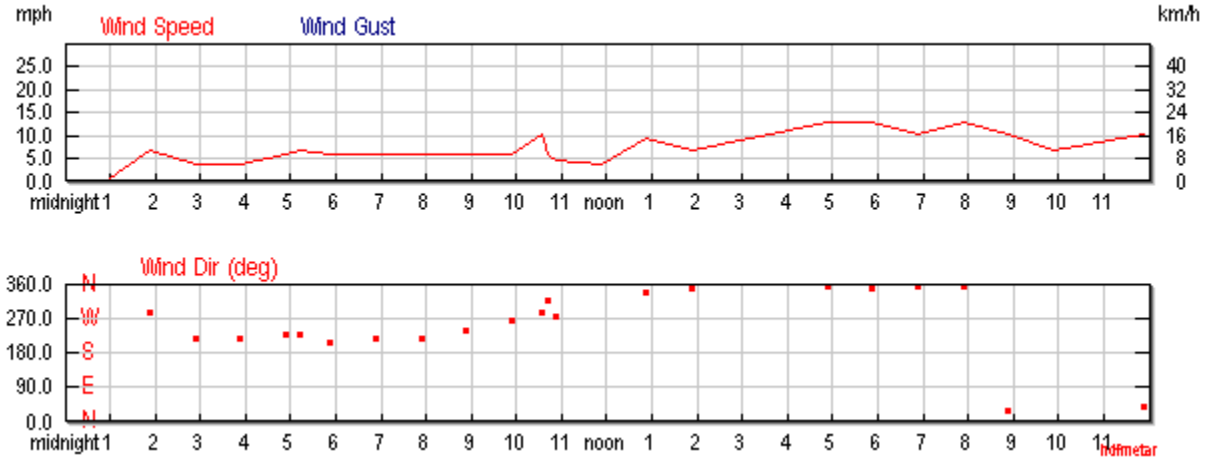
3. During my on-site investigation I did the following:
   a) Looked for and did not observe another potential dicamba application made in the area adjacent to the impacted site.
   b) Observed and photographed what I believed to be fairly uniform dicamba exposure symptoms (figure 1) throughout the complainant's non-target, non-DT soybean field (figure 2) located to the west and south of the target fields. The target field and the complainant's non-target field were separated by a fence row/tree line from twenty to forty feet (figure 3) and a gravel road approximately 30 feet. (figure 4)
   c) Collected soybean plant samples from impacted areas of the complainant's non-target soybean field for visual analysis by the Purdue Plant and Pest Diagnostic Lab (PPPDL).
   d) Collected samples for chemical analysis by the OISC Pesticide Residue Laboratory from the following areas:
      i) Impacted soybean plants from complainant's non-target soybean field;
      ii) Normal looking soybean plants from the target soybean fields
      iii) Vegetation sample from fence row.
   e) Made a diagram/map of the investigation site, depicting locations of relevant fields, sample collection, roads, structures, and other landmarks (figures 5 and 6).

4. On July 7, 2017, I collected written records from the applicator company Co-Alliance. The written records and statements addressed the below items as follows:
   a) Application date & time: June 5, 2017; from 12:45pm-2:00pm;
   b) Target field: soybean field to the north and east of complainant's soybean field;

c) Pesticides: Xtendimax (dicamba) EPA Reg. #524-617 & Roundup Powermax (glyphosate) EPA Reg. #524-549; Warrant (acetochlor) EPA Reg. #524-591
d) Application rate: 22 oz. per acre Xtendimax; 32 oz. per acre Roundup Powermax; 3pts per acre Warrant
e) Adjuvants: Class Act Ridion & AG16098;
f) Nozzles: TTI 11004
g) Boom height: 24 inches
h) Ground speed: 14.5 mph
i) Winds: 4-5 mph from the north as obtained from Co-Alliance weather station closest to the job;
j) Applicator: Cory Fordice;
k) Certified supervisor: not applicable;
l) Left a 110' untreated buffer next to non-target site: no
m) Checked registrant's web site before application: no
n) Checked Field Watch before application: applicator did not however someone in the office does that and provides information if it is applicable
o) Surveyed application site before application: yes

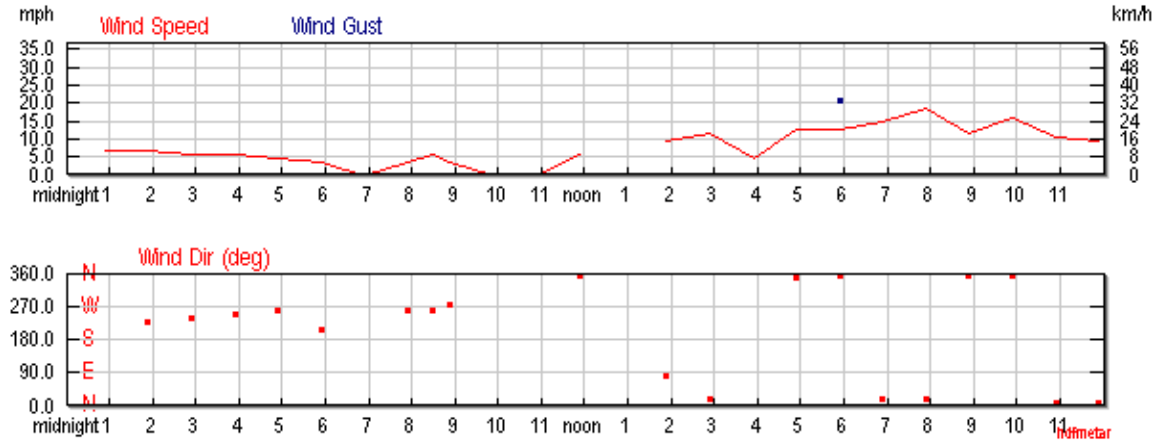
5. I searched wind data from www.weatherunderground.com for zip code 47954 in Ladoga, Indiana for the reported dates and times of the applications. The results of that search indicated that wind speeds and directions during the application were as follows:

June 5, 2017
As recorded at Eagle Creek 7-10mph out of the north northwest



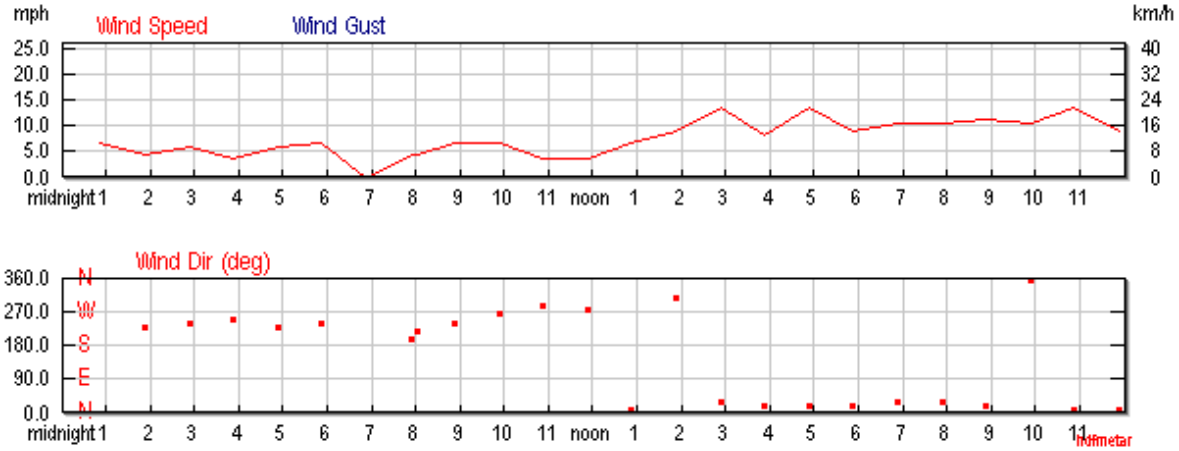
Eagle Creek Wind Data 38 Miles East

As recorded at Lafayette 5-10mph out of the northeast



Lafayette Wind Data 40 Miles North

As recorded at Terre Haute 5-10mph out of the west northwest



Terre Haute Wind Data 58 Miles Southwest

6. The wind would have been blowing in the direction of the complainant's beans during the application to the field located on the west side of 800 W.

7. The report from the PPPDL states, *"Cupping and puckering of new trifoliates is indicative of injury from dicamba."*

8. The report from the OISC Pesticide Residue Laboratory states:

Case #	**2017/0953**			**Investigator**		**K. Neal**	
Sample #	Sample Description	Amount of Analyte (ppb)					
		Matrix	**Dicamba**	**5-OH Dicamba**	**DCSA**	**Glyphosate**	**AMPA**
2017-220621	Mitchell Beans 800 W North end	Veg	BDL	BDL	BDL	BDL	BDL
2017-220622	Ramsay Beans 800W North end	Veg	BDL	BDL	40.1	248	BDL
2017-220623	Veg sample fence row 800 W north end	Veg	1605*	23.8	4.09	655	BDL
2017-220624	Mitchell beans 800 W South end	Veg	BDL	BDL	BDL	BDL	BDL

2017-220625	Ramsay beans 800 W South end	Veg	2.30	BDL	51.2	329	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC							
LOQ	Vegetation		2 ppb	2 ppb	0.2 ppb	5 ppb	25 ppb
Signature				**Date**	9/11/2017		

9. The label for Xtendimax states, *"Do not tank mix any product with Xtendimax with VaporGrip Technology unless: You check the list of tested products found not to adversely affect the offsite movement potential of Xtendimax with VaporGrip Technology at www.xtendimaxapplicationrequirements.com no more than 7 days before applying Xtendimax with VaporGrip Technology."* And *"DO NOT APPLY this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops, including but not limited to, commercially grown tomatoes and other fruiting vegetables (EPA crop group 8), cucurbits (EPA crop group 9), and grapes."*

Figure One

Figure Two

Figure Three

Figure Four

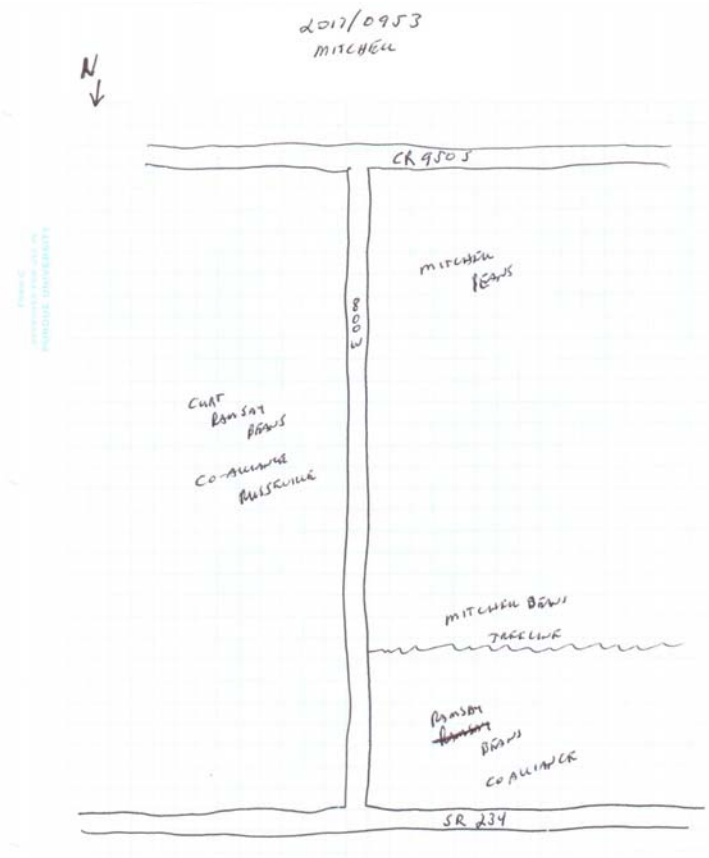


Figure Five

Figure Six

Kevin W. Neal
Investigator

Date: January 30, 2018

Disposition: Cory Fordice was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the registrant's website before application.

Cory Fordice was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $250.00 was assessed to Co-Alliance for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 15, 2018
Final Date: May 1, 2018

CASE SUMMARY

Case #2017/0956

Complainant: Myron Hess
2021 N. Langdon Road
Vincennes, Indiana 47591
812-881-6834

Respondent: Alex Rusch — Applicator
L & R Rusch Farms
4698 S. St. Thomas Road
Vincennes, Indiana 47591
812-882-2876

1. On July 3, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On July 7, 2017, I met with Mr. Hess. He took me to his soybean field at the NW corner of Essex Road and Keller Road. He stated on June 25, 2017, he noticed dicamba injury to his soybeans. He stated he observed cupping of the leaves on his soybean plants. He stated as he walked around his field he notice the Rusch's soybean field to the immediate west had no signs of herbicide injury. He stated he contacted Mr. Larry Rusch and Mr. Rusch confirmed they had dicamba-tolerant (DT) soybeans in the field. I asked Mr. Hess if he had applied any pesticides to his soybean field. He stated he had applied Liberty herbicide with the active ingredient glufosinate to his field. I asked Mr. Hess if he had spoken with any of the farmers regarding any dicamba applications to other adjoining fields. He stated he had spoken to Mr. Bieck who farmed the cornfield to the north of his soybean field. He stated Mr. Bieck advised he had not applied any dicamba to his field.

3. I observed cupping and puckering of new trifoliates on the soybean plants in Mr. Hess's field. I also observed a uniform symptom pattern across the majority of the Hess field. I then took photographs of the area, showing the location of the target field and Mr. Hess's field, along with symptoms to the soybean plants. Mr. Hess's field was divided by a ditch at an angle across the field. I collected soil and vegetation samples from the target field and from the buffer zone in the target field. I then collected vegetation samples from the soybean plants in Mr. Hess's field. I took samples from both sides of the ditch, indicating it north and south. All of the samples were labeled and submitted to the OISC residue lab. I also collected soybean plant samples and submitted them to the Purdue Plant and Pest Diagnostics Lab (PPDL). The following photographs show the locations of the fields and the symptoms to the soybeans.




4. I then made contact with Mr. Larry Rusch. He stated Alex Rusch made the pesticide application to the target soybean field. He stated the pesticide application was made on June 19, 2017 between the hours of 8:00 pm and 8:30 pm. He stated they applied Engenia herbicide EPA Reg. #7969-345 with the active ingredient dicamba and Makaze YP herbicide EPA Reg. #3470-1033 with the active ingredient glyphosate. I advised Mr. Rusch, I would be sending a Pesticide Investigation Inquiry (PII) for Alex Rusch to fill out. Mr. Rusch received the PII, completed it and returned it to OISC. The PII confirmed the information given to me by Larry Rusch. The PII also indicated the winds were West @ 5-7 mph and the temperature was 74 degree F at the time of the pesticide application. The PII is in this case file.

    - Application date and time: June 19, 2017 between 8:00 pm -8:30 pm.
    - Target field located directly west of Mr. Hess's soybean field
    - Application rate of Engenia: 12.8 oz. per acre
    - Adjuvants: Reign @ 3 oz. per acre
    - Nozzles: Turbo Jett TT1 110004, 15 inch spacing, 30 lbs. pressure
    - Winds: West @ 5-7 mph
    - Applicator: Alex Rusch
    - Left a buffer zone: yes 200 ft. around entire field
    - Ground speed 13 mph
    - Boom height: 18 inches above soybean canopy
    - Checked registrants website prior to application: no
    - Checked field watch/ drift watch before application: no
    - Surveyed site prior to application: yes

5. I then research the Weather Underground website for weather condition at the nearest reporting stations on the date and time of the pesticide application. The website indicated the following.

    - Vincennes Hannah's (approximately 10 miles away) winds were SSW @ 2mph with temperature at 78.1 degree F at 7:58 pm. Winds were SSW @ 1 mph with temperature at 73 degree F at 8:32 pm.
    - Knox County Emergency Mgmt. (approximately 5 miles away) winds were WNW @ 3 mph/ 9 mph gusts with temperature at 7907 Degree F at 7:52 pm. Winds were WSW @ 2 mph/ 4 mph gusts with temperature at 77.1 Degree F at 8:37 pm.
    - Bruceville (approximately 5 miles away) winds were W @ 3 mph / 6 mph gusts with temperature at 77.1 Degree F at 8:01 pm. Winds were WSW @ 7 mph with temperature at 75.9 Degree F at 8:31 pm.

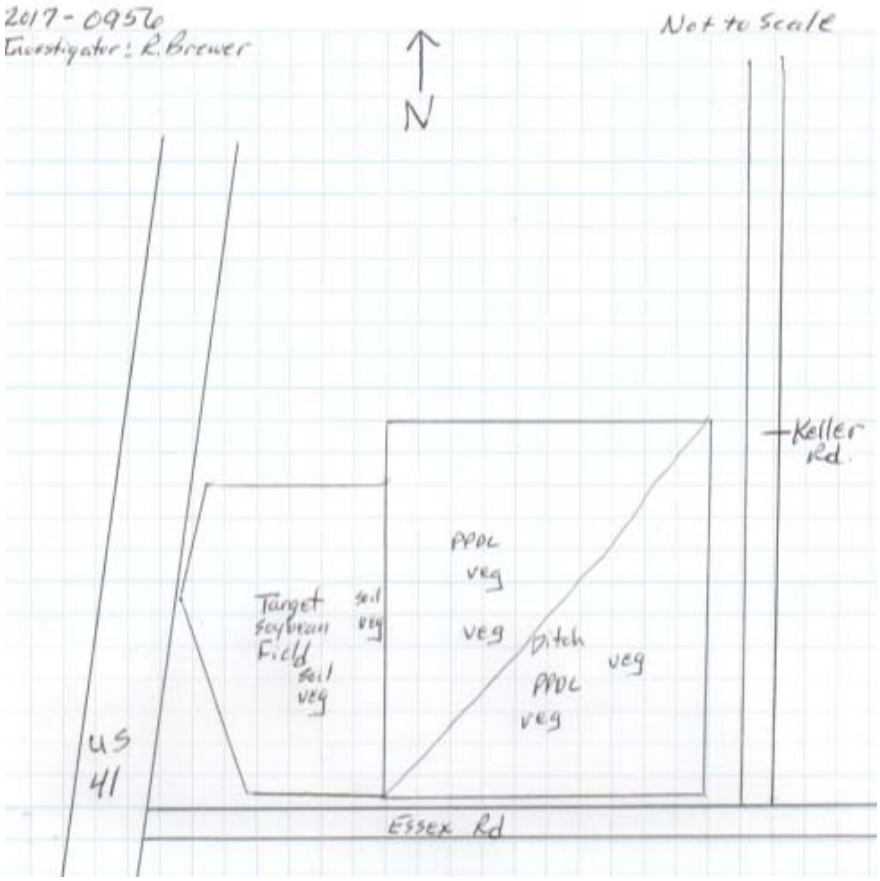
6. On July 11, 2017, I received a report from PPDL. The report stated, "*Cupping and puckering of new trifoliates is indicative of injury from dicamba"*. A copy of the PPDL report is in this case file.

7. On November 2, 2017, I received a report from the OISC residue lab. The report indicated the active ingredient dicamba was detected in the samples collected from the target field and well as from the samples collected from Mr. Hess's soybean field. The following is a copy of the OISC residue lab report.

Case # 2017/0956			Investigator: B. Brewer					
Sample #	Sample Description	Sample Matrix	Amount Found (ppb)					
			Cloransulam-Methyl	**Dicamba**	**5-OH Dicamba**	**DCSA**	**Glyphosate**	**AMPA**
2017-334902	Soil Target field	veg	BDL	15.6	BDL	71.7	1128	845
2017-334903	Soil Target buffer zone	veg	BDL	9.3	BDL	83.8	916	1394
2017-334904	Vegetation Target field	veg	BDL	16.1	BDL	896*	9523	458
2017-334905	Vegetation Target buffer zone	veg	BDL	7.8	BDL	549*	4705	210
2017-334906	Vegetation Complt. South field	veg	BDL	6.7	BDL	BQL	BDL	BDL
2017-334907	Vegetation Complt. North field	veg	BDL	44.3	BDL	1.6	BDL	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC *minimum concentration reported due to amount exceeding calibration curve range.								
LOQ	Vegetation (ppb)		0.3	2	2	0.2	25	125
LOQ	Soil (ppb)		0.3	2	1	1	10	50
Signature						**Date**	11/2/17	

8. The Engenia herbicide label stated the following:
    - Applicator must check the Engenia website 7 days prior to application.
    - Applicator must check sensitive crop registries prior to application.
    - Do not apply when wind is blowing toward adjacent specialty crops.

9. The following is a diagram of the area, indicating the location of the fields and the sample collection locations.



10. The weather report along with the weather information on the PII indicated the winds were blowing towards Mr. Hess's soybean field at the date and time of the pesticide application made by Mr. Rusch. The PII also indicated Mr. Rusch did not check the Engenia website or the sensitive crop registry (Fieldwatch/Driftwatch) prior to making the pesticide application. The OISC residue lab report indicated the active ingredient dicamba did move off target from the pesticide application onto Mr. Hess's soybean field.

Robert D. Brewer
Investigator

Date: February 6, 2018

Disposition: Alex Rusch was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the registrant's website and sensitive crop registry before application.

Alex Rusch was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when winds were blowing toward a sensitive specialty crop. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: February 28, 2018
Final Date: April 9, 2018

CASE SUMMARY

Case #2017/0971

Complainant: Ed Jaynes
3110 S. CR 600 E.
Seymour, IN 47274
812-521-7337

Respondent: Bart Roger Barnett — Certified Applicator
Crop Production Services — Licensed Business
71 S. SR 3
Lexington, IN 47138
812-866-5513

1. On July 6, 2017, Ed Jaynes spoke with Joe Becovitz, Pesticide Program Specialist for the Office of Indiana State Chemist (OISC), regarding a pesticide drift complaint. Mr. Jaynes stated he first noticed dicamba-type injury to his Liberty Link soybeans around the end of June. Mr. Jaynes stated he believed the injury was the result of an application made to a field that is located south of his soybean field. Mr. Jaynes did not know who made the application.

2. On July 11, 2017, I met with the complainant to conduct an on-site physical investigation of the alleged off-target pesticide movement incident reported to OISC. The complainant advised me that he believed his non-DT beans had been damaged by an application made to a nearby DT soybean field.

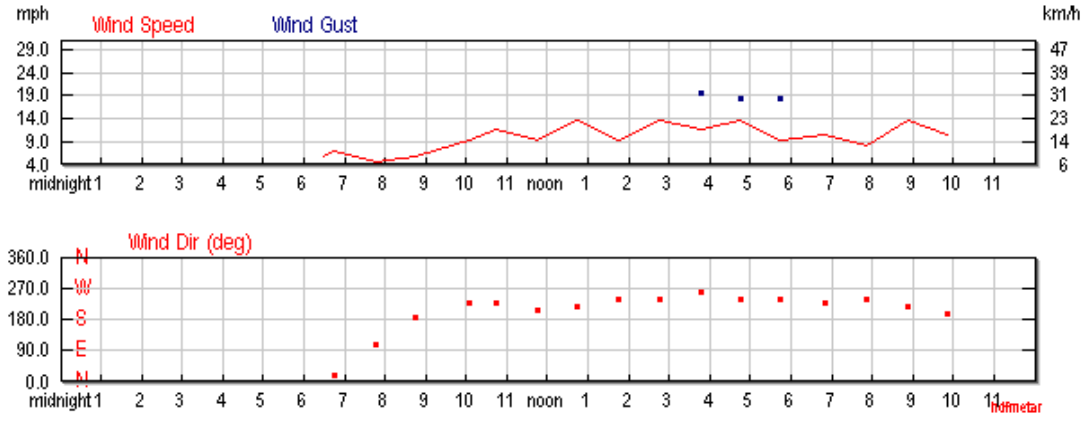
3. During my on-site investigation I did the following:
   a) Looked for and did not observe another potential dicamba application made in the area adjacent to the impacted site.
   b) Observed and photographed what I believed to be fairly uniform dicamba exposure symptoms (figure 1) throughout the complainant's non-target, non-DT soybean field (figure 2) located to the north of the target field. The target fields and the complainant's non-target field were immediately adjacent to one another north and south and separated by a road 31 feet from first row to first row to the east. (Figures 3&4).
   c) Collected soybean plant samples from impacted areas of the complainant's non-target soybean field for visual analysis by the Purdue Plant and Pest Diagnostic Lab (PPPDL).
   d) Collected samples for chemical analysis by the OISC Pesticide Residue Laboratory from the following areas:
      i) Impacted soybean plants from complainant's non-target soybean field;
      ii) Normal looking soybean plants from the target soybean field
   e) Made a diagram/map of the investigation site, depicting locations of relevant fields, sample collection, roads, structures, and other landmarks (figure 5).

4. On July 13, 2017, I collected written records from the applicator. The written records and statements addressed the below items as follows:
   a) Application date & time: June 21, 2017; from 3:00pm-4:30pm
   b) Target field: soybean field to the south and east of complainant's soybean field;

c) Pesticides: Xtendimax (dicamba) EPA Reg. #524-617 & Roundup Powermax (glyphosate) EPA Reg. #524-549;
d) Application rate: 30 oz. per acre Xtendimax; 32 oz. per acre Powermax
e) Adjuvants: Strike Force and Reign;
f) Nozzles: ULV 05 (TTI11005)
g) Boom height: 24 Inches
h) Ground speed: 12 mph
i) Winds: 5-8 mph from the southwest;
j) Applicator: Bart Roger Barnett;
k) Certified supervisor: not applicable;
l) Left a 110' untreated buffer next to non-target site: Yes on south side 120ft. No on East side. 60ft from road plus 31ft row to row is 91ft
m) Checked registrant's web site before application: No
n) Checked Field Watch before application: No
o) Surveyed application site before application: Yes

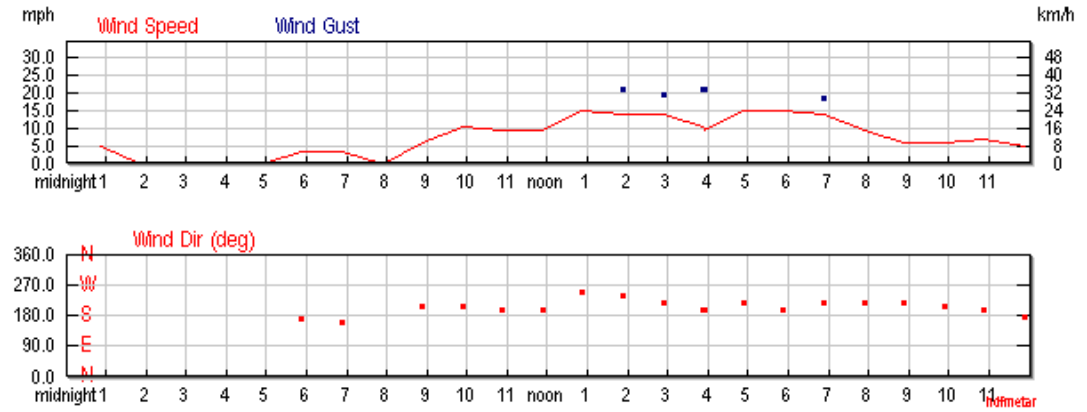
5. I searched wind data from www.weatherunderground.com for zip code 47274 in Seymour, Indiana for the reported dates and times of the application. The results of that search indicated that wind speeds and directions during the application were as follows:

June 21, 2017
As recorded at Columbus 12-14 mph out of the southwest gusts to 19 mph



Columbus Wind Data 17 Miles North

June 21, 2017
As recorded at Louisville, KY 10-15 mph out of the south southwest gusts to 20 mph



Louisville Wind Data 49 Miles South

6. After researching the wind data I spoke with Mr. Barnett who then advised that yes the wind may have been more than 5-8 mph. He stated that it was *"pretty breezy that day it may have been pushing 10 mph or more."*

7. The report from the PPPDL states, *"Cupping and puckering of new trifoliates is indicative of injury from dicamba. Some chlorosis could be indicative of injury from glyphosate"*

8. The report from the OISC Pesticide Residue Laboratory states:

Case #	**2017/0971**			**Investigator**		**K. Neal**	
Sample #	Sample Description	Amount of Analyte (ppb)					
		Matrix	**Dicamba**	**5-OH Dicamba**	**DCSA**	**Glyphosate**	**AMPA**
2017-220640	Jaynes beans 600E	Vegetation	5.03	BDL	BDL	BDL	BDL
2017-220641	Rieckers beans 600 E	Vegetation	BDL	BDL	87.3	1125	BDL
2017-220642	Rieckers beans 600 E west side	Vegetation	BDL	BDL	BQL	912	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC							
LOQ (ppb)	Vegetation		1	2	1	25	125
Signature				**Date**	10/17/2017		

Figure One

Figure Two

Figure Three

Figure Four

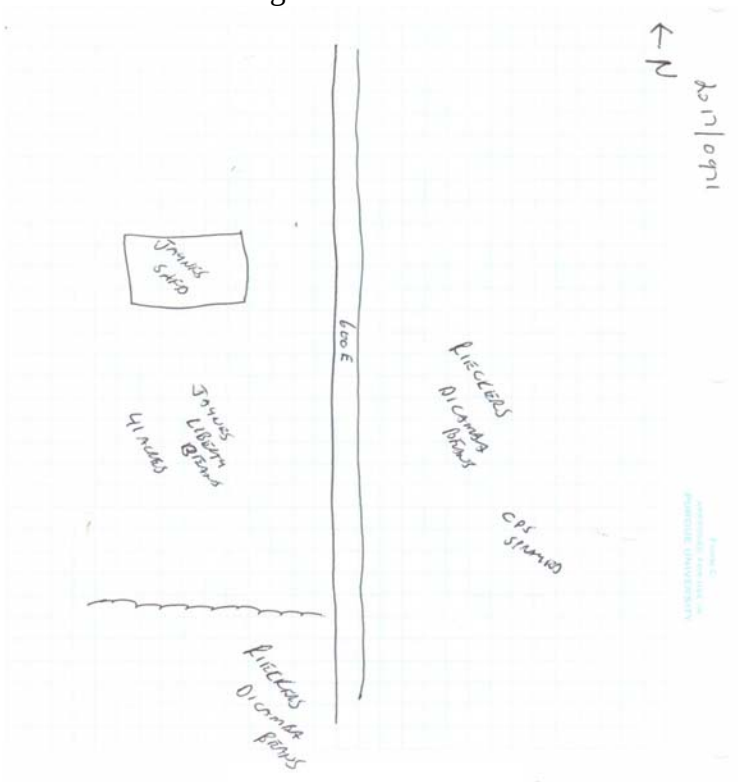


Figure Five

9. The PPPDL report, the wind direction data, the wind gust data and the OISC lab data suggest that dicamba and possibly glyphosate from the application to the target field moved off-target to the complainant's non-target soybean field. The absence of any detectable glyphosate in the non-target soybeans, the 20 day period between application and sample collection, the higher water solubility of

glyphosate compared to dicamba, and the significantly higher analytical limit of quantitation of glyphosate as compared to dicamba, may account for the absence of glyphosate in the complainant's soybeans.

10. The label for Xtendimax states, *"DO NOT APPLY this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops, including but not limited to, commercially grown tomatoes and other fruiting vegetables (EPA crop group 8), cucurbits (EPA crop group 9), and grapes."* And, *">15 mph (winds) Do not apply Xtendimax With Vapor Grip Technology."* The label further states, "The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site." And, *"DO NOT tank mix any product with Xtendimax With Vapor Grip Technology unless . . .You check the list of tested products found not to adversely affect the offsite movement potential of Xtendimax With Vapor Grip Technology at www.xtendimaxapplicationrequirements.com no more than 7 days before applying Xtendimax With Vapor Grip Technology . . ."*

Kevin W. Neal
Investigator

Date: November 15, 2017

Disposition: Bart Roger Barnett was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label language regarding checking sensitive crop registry and registrant's website before application.

Bart Roger Barnett was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $250.00 was assessed for this violation.

Consideration was also given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton
Compliance Officer

Draft Date: January 25, 2018
Final Date: March 22, 2018

CASE SUMMARY

Case #2017/0978

Complainant: Scott Stewart/Tina Stewart
8462 N. CR 100 E.
Frankfort, IN 46041
765-242-6231

Respondent: Brad Crum — Private applicator
7174 S. 350 E.
Frankfort, IN 46041
765-652-4020

1. On July 10, 2017, the Office of Indiana State Chemist (OISC) received a report of dicamba drift to tomatoes and snap beans. The complainant, Mr. Scott Stewart, stated the tomatoes and snap beans in his personal garden were wilted and dying.

2. On July 11, 2017, I met with the complainant Mrs. Tina Stewart, at her property. I identified myself verbally and with OISC credentials. I explained the role of OISC in drift investigations and issued a Notice of Inspection.

3. The complainant showed me her large garden located on the north edge of her property (fig. 1 & 6). The complainant thought she first noticed the on-set of injury to her garden vegetables on or about 6-27-17. The garden had tomato plants, leafy vegetables and corn in it. The tops of the tomato plants were twisted and curled (figs. 2-3). The complainant's property is bordered on the west by an agricultural crop field planted in dicamba tolerant soybeans (figs 1&4). The complainant thinks the post-emergent pesticide spray application made recently moved onto her property causing the injury symptoms to the vegetables in her garden. The fence line that separates the complainant's property from the soybean field is planted in maples trees. I checked the trees and all of them had brown and black spotting on them. I collected a branch sample (fig.5) for submission to Purdue Plant and Pest Diagnostic Laboratory (PPDL).


Fig. 1


Fig. 2


Fig. 3


Fig. 4


Fig. 5

- Figure 1 is the complainant's garden patch as seen from east to west.
- Figures 2&3 are the complainant's tomato plants.
- Figure 4 shows the complainant's garden and the soybean field in the background.
- Figure 5 is the maple tree branch sample submitted to PPDL for analysis.

4. I collected swab and vegetation samples from the corn and tomatoes in the complainant's garden I also collected swabs, vegetation and soil from the soybean field 20 yards from a

corner post located in the SW corner of the garden and swabs vegetation and soil 60 yards into the soybean field. The measurements were measured with a laser rangefinder from the aforementioned fence post. I made a diagram of the property (fig. 6) which includes where samples and measurements were taken from. I inserted some wind data at a later date.

5. The samples in this case were tagged and delivered to PPDL and the OISC Residue Laboratory for analysis.

6. I was able to contact and speak to the respondent in this case. The respondent told me he made a pesticide spray application to his dicamba tolerant soybeans in the agricultural crop field west of the complainant's house on June 22, 2017 starting at 9;17am to 10:51am using the following pesticide products:
   - Xtendimax, EPA Reg. #524-617, AI=dicamba
   - Roundup Powermax, EPA Reg. #524-549, AI=glyphosate

7. In the days following the first visit and sampling in this case I re-contacted the respondent Mr. Brad Crum and provided a Pesticide Investigation Inquiry (PII) for him to fill out and return to me. The PII was completed and returned to me shortly thereafter.

8. The diagram which follows (fig.6) depicts the complainant's property and the agricultural crop field to the west. The diagram contains sampling locations, wind direction, and wind speeds for the date and time of the pesticide spray application made by Mr. Brad Crum on June 22, 2017 from 9:17am to 10:51am. The information for the wind was taken from the charts and graphs in paragraph 7 of this report.

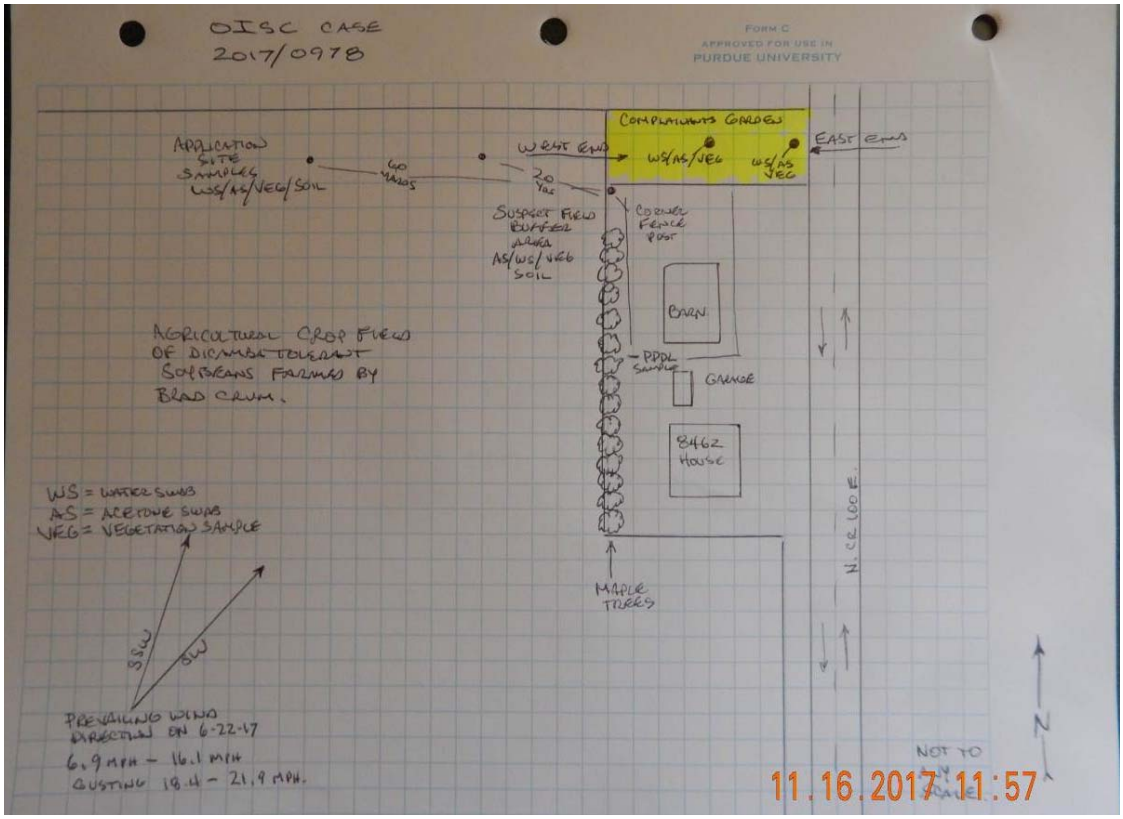


Fig. 6

- Figure 6 is a diagram that contains sampling location information and wind direction and wind speeds for the date of the pesticide application in this case.

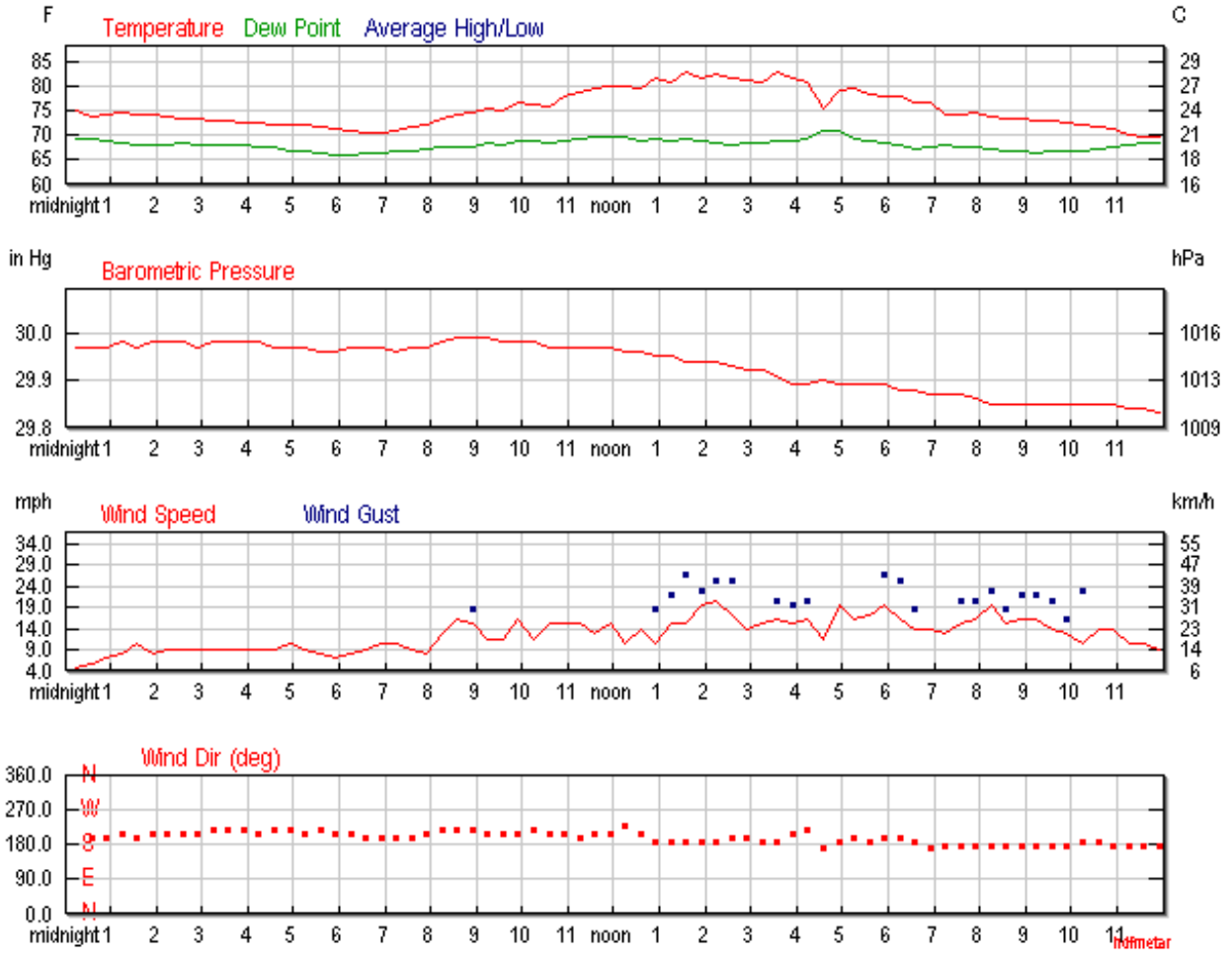
9. The weather information (wind speed, wind direction) for the date and time of the pesticide application in paragraph 6 were taken from the weatherunderground.com website. The charts consist of extracted information from the weather history for each site used. The three locations chosen for the weather history in this case are a triangulation. The data was taken from Indianapolis Indiana, Lafayette, Indiana, and Kokomo, Indiana. The charts and graphs will be examined in that order.

INDIANAPOLIS INDIANA: Located approximately 40 miles SE of the target application area and is the weatherunderground source for Frankfort Indiana.

Indianapolis chart:

6-22-17	9:15 am	SSW	11.5 mph
6-22-17	9:35 am	SSW	11.5 mph
6-22-17	9:55 am	SSW	16.1 mph gusting to 21.9 mph
6-22-17	10:15 am	SW	11.5 mph
6-22-19	10:35 am	SSW	15.0 mph
6-22-17	10:55 am	SSW	15.0 mph

Indianapolis graph:

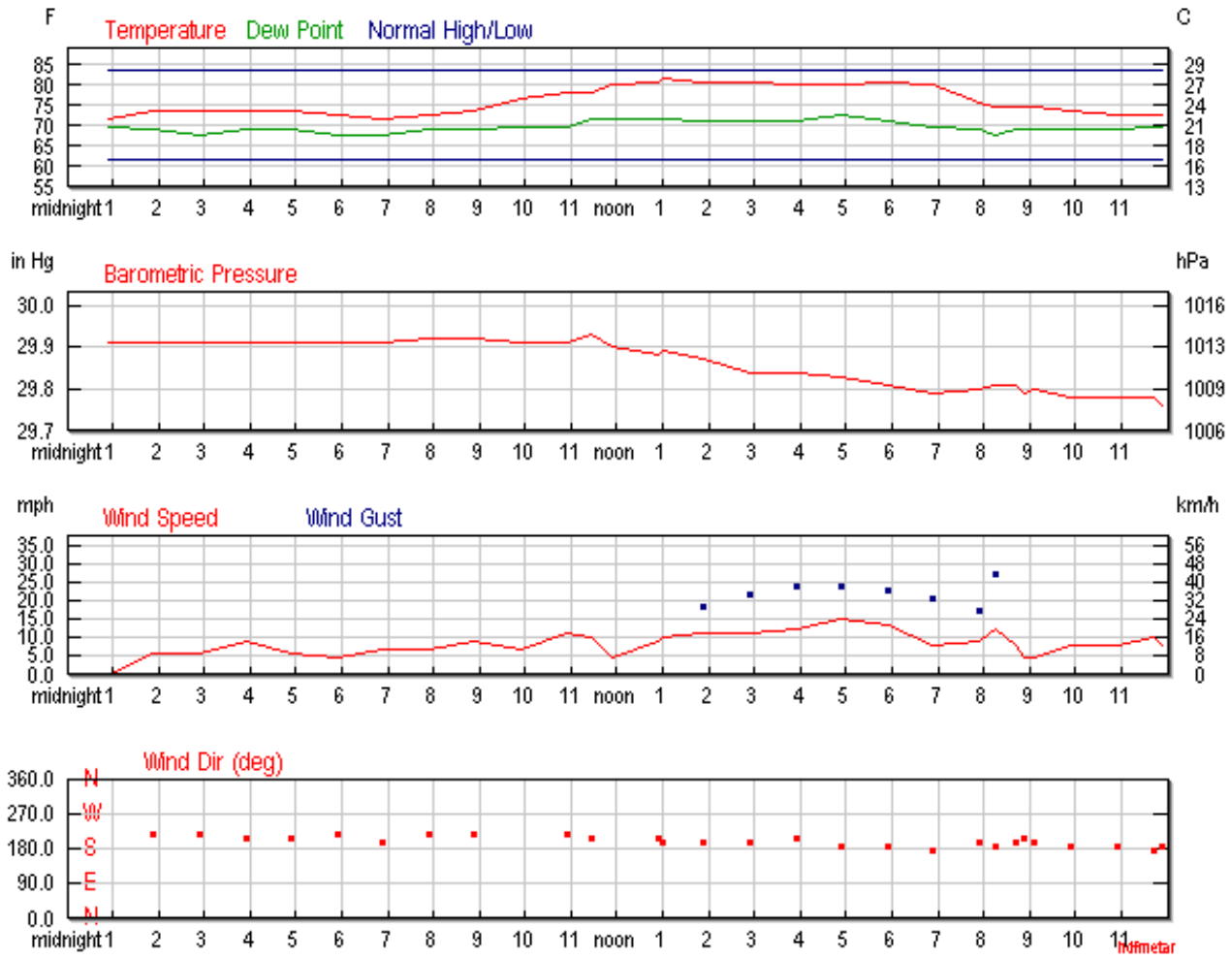


LAFAYETTE, INDIANA: Located approximately 20 miles west of the target application area.

Lafayette chart:

6-22-17	8:54 am	SW	9.2 mph
6-22-17	9:54 am	Variable	6.9 mph
6-22-17	10:54 am	SW	11.5 mph gusting to 18.4 mph

Lafayette graph:

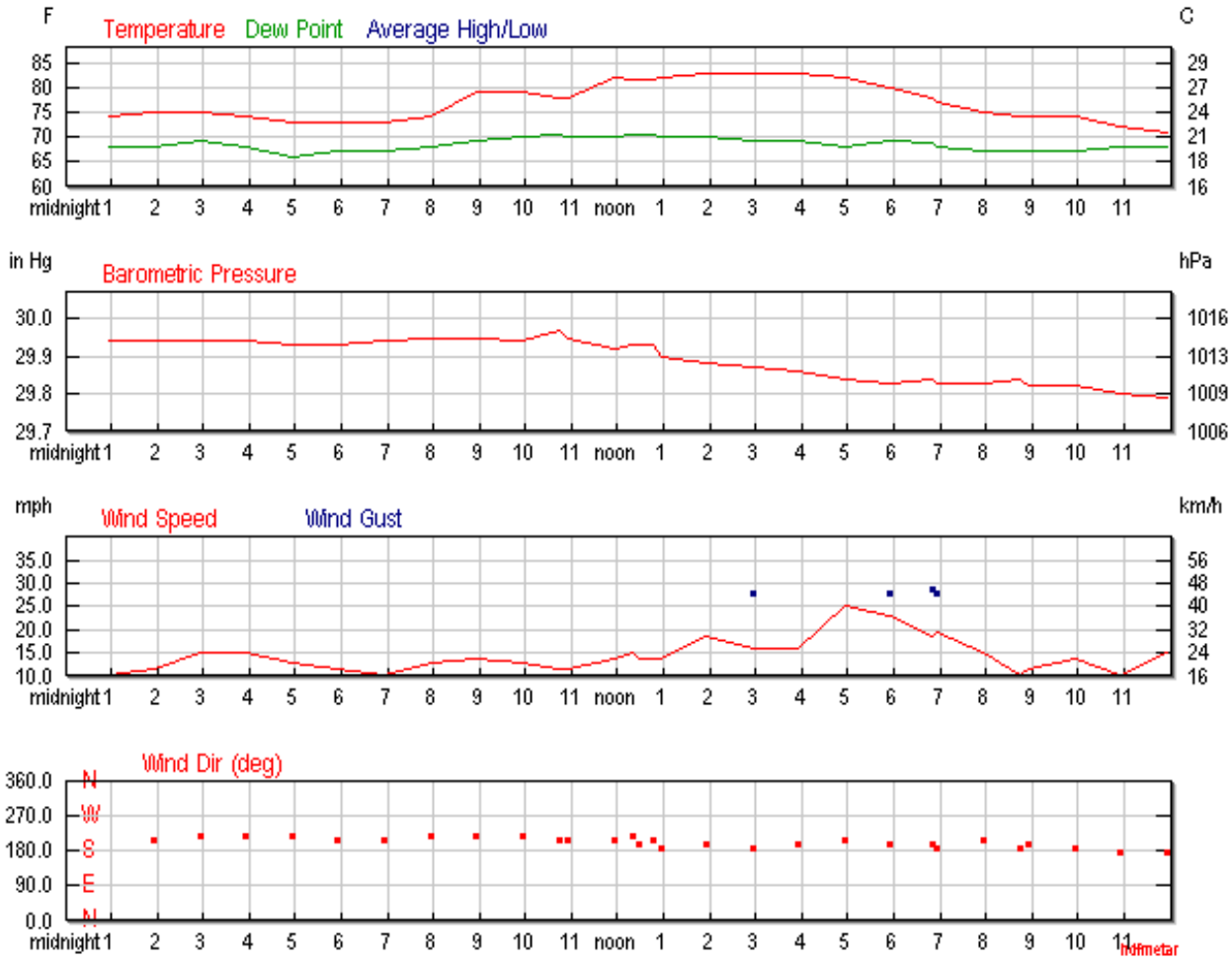


KOKOMO, INDIANA: Located approximately 20 miles east of the target application area.

Kokomo chart:

6-22-17	8:56 am	SW	13.8 mph
6-22-17	9:56 am	SW	12.7 mph
6-22-17	10:43 am	SSW	11.5 mph
6-22-17	10:56 am	SSW	11.5 mph

Kokomo graph:



10. Question #11 on the PII is; “Wind speed and direction the wind was from at the time of the application?” and then goes on to allow the person filling it out to indicate where the information was obtained, either “applicator estimate, field measurement, or weather station”. Mr. Crum chose “applicator estimate and filled in “South 5-10 mph”. In speaking to Mr. Crum he was clear that wind direction is “which way the wind is blowing from”.

11. The chart which follows is a copy and paste from the e-mail I received for the final analysis results on the samples analyzed in this case by the OISC Residue Laboratory.

Case #	**2017/0978**		**Investigator**		**B. Baker**	
Sample #	Sample Description	Amount of Analyte (ppb)				
		Matrix	**Dicamba**	**5-OH Dicamba**	**DCSA**	**Glyphosate**	**AMPA**
2017-323761	Vegetation sample of corn - East end of garden plot	Vegetation	BDL	6.2	BQL	BDL	BDL
2017-323762	Vegetation sample of tomatoes- West end of garden plot	Vegetation	8.7	BDL	BDL	BDL	BDL
2017-323765	Vegetation sample from soybeans in buffer zone	Vegetation	*1030	35.5	89.0	5260	254
2017-323766	Soil sample from soybeans in buffer zone	Soil	Did not test	Did not test	Did not test	Did not test	Did not test

2017-323769	Vegetation sample of Soy beans in Suspect field -App zone	Vegetation	BDL	BDL	36.6	4103	235
2017-323770	Soil sample from Suspect field -App zone	Soil	Did not test	Did not test	Did not test	Did not test	Did not test
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC * Amount reported as minimum concentration found due to amount exceeding calibration curve range Product applied= Xtendimax and Roundup Powermax II Application date=6/22/17 Sampling date=7/12/17							
LOQ (ppb)	Vegetation		1	2	1	5	125
Signature				**Date**	10/15/17		

12. The results from the chart in paragraph 10 demonstrate in part, a gradient drift pattern of dicamba, 5-OH dicamba and DCSA. The farthest part of the garden to the east of the suspect field has vegetation with 6.2 ppb of 5-OH dicamba in it. The next garden sample toward the west end of the garden and closest to the suspect field has vegetation with 8.7 ppb of dicamba in it. The next sample taken in the suspect field at 20 yards west from a corner post at the SW corner of the garden has 1030 ppb of dicamba 35.5 of 5-OH dicamba and 89 ppb of DCSA in it. This area would be within a buffer zone if a buffer zone was required.

13. On July 13, 2017, I received the final report from PPDL. The report reads in part;

"Twisting of petioles and curling of maple leaves is indicative of injury from a growth regulator herbicide like dicamba. Twisting and curling of stems and leaves on the pictures of tomato can also be indicative of injury from a growth regulator".

Joe Ikley
Extension Weed Specialist
Purdue University

14. The label/supplemental label for Xtendimax EPA Reg# 524-617 reads in part under the heading;

SPRAY DRIFT MANAGEMENT:

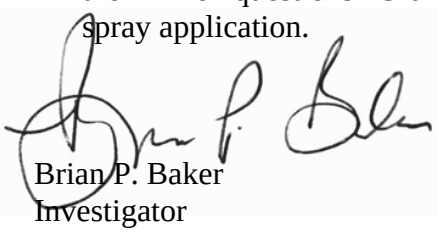
"Do not allow herbicide solution to mist, drip, drift, or splash onto desirable vegetation because severe injury or destruction to desirable broadleaf plants could result".

"Do not apply under circumstances where drift may occur to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale use or consumption.

"10-15mph, Do not apply product when wind is blowing toward non-target sensitive crops".
">15 mph, Do not apply Xtendimax with VaporGrip Technology".

The label also states, *"Before making an application, the applicator must survey the application site for neighboring non-target susceptible crops. The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site."* And *"DO NOT tank mix any product with XtendiMax with VaporGrip Technology unless . . .you check the list of tested products found not to adversely affect the offsite movement potential of XtendiMax with VaporGrip Technology at www.xtendimaxapplicationrequirements.com no more than 7 days before applying XtendiMax with VaporGrip Technology . . ."*

15. In this case, respondent Mr. Brad Crum made a pesticide spray application of the dicamba and glyphosate pesticide products. The date and time of the pesticide spray application listed on the PII is 6-22-17 from 9:17am to 10:51am. The tri-angulated weather data from weatherunderground.com indicates a prevailing Southwest and South Southwest wind (blowing toward the complainant's property) at speeds from 6.9 mph to 16.1 with gusts of 18.4 to 21.9mph on the date and time of the pesticide spray application. The PPDL indicates the samples submitted have injury symptoms indicative of dicamba exposure. The OISC Residue Laboratory results for the samples submitted indicate the presence of dicamba, 5-OH dicamba and DCSA in the complainant's garden vegetation in a gradient wind drift pattern. It appears in this case the pesticide spray application made by the respondent did drift onto the garden vegetation of the complainant causing the injury symptoms, in violation of the pesticide label/supplemental label for Xtendimax. Additionally the respondent indicated on the PII for questions 19 and 20 that he "did not" check the websites prior to his pesticide spray application.



Brian P. Baker
Investigator

Date: November 16, 2017

Disposition: Brad Crum was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of sensitive crop registries and registrant's website.

Brad Crum was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift to non-target vegetation. A civil penalty in the amount of $100.00 was assessed for this violation.

Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton
Compliance Officer

Draft Date: January 25, 2018
Final Date: March 21, 2018

CASE SUMMARY

Case #2017/0981

Complainant: Dwayne Wade
11251 W SR 165
Owensville, IN 47665
812-499-4193

Respondent: Jay Sensmeier (Private Applicator)
6153 S 850 W
Owensville, IN 47665
812-729-7929

1. On July 10, 2017, Dwayne Wade spoke with Joe Becovitz, Pesticide Program Specialist for the Office of Indiana State Chemist (OISC) regarding a dicamba drift complaint. Mr. Wade stated approximately 80 percent of a 110 acre field of Liberty Link soybeans had dicamba injury.

2. On July 17, 2017, I met with Duane Wade and we went to his soybean field located on the southeast corner of the intersection of Shotgun Lane and County Road 850 South near Owensville, Indiana. Mr. Wade stated he learned that Jay Sensmeier had applied a dicamba product to his adjacent soybean field to the east. Mr. Wade believed the dicamba product had negatively affected his Liberty, non-dicamba tolerant (DT) beans. Mr. Wade indicated he had planted the field on May 23, 2017, and had first noticed the growth regulator-type symptoms during a liquid fertilizer application around July 3, 2017. Mr. Wade also informed me he had not applied any dicamba products this year on any of his farm fields and the fertilizer and Liberty (EPA Reg. #264-829; active ingredient: glufosinate) were the only products applied post-emergent to this field.

3. During my on-site investigation I did the following:
    a) Looked for but did not observe, nor learn of from Mr. Wade, any other dicamba applications made in the areas adjacent to his soybean field.
    b) Observed and photographed what appeared to be exposure symptoms (figure 1 below) to a growth regulator type of herbicide such as dicamba. These symptoms did appear to be more pronounced on the east side of Mr. Wade's field closest to the alleged target field and decreased slightly with distance. However, symptoms were still notable throughout the field.
    c) Collected soybean vegetation from Mr. Wade's field and a vegetation and soil sample from the target field to the east.
    d) The graph below (Illustrated #1) shows the field locations in question and areas where samples were obtained.

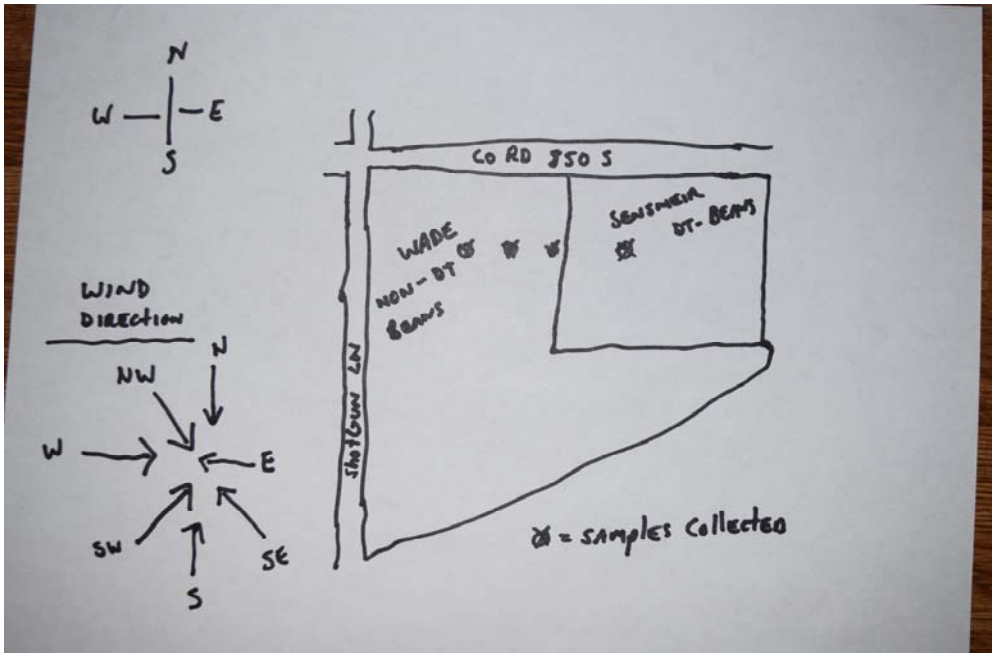


Illustration #1

4. Figure one below shows the growth regulator injury symptoms observed on Mr. Wade's soybean plants.

Figure #1

5. I contacted Jay Sensmeier and spoke to him about the target field in question. Mr. Sensmeier stated had made an application of Xtendimax (EPA Reg. #524-617; active ingredient: dicamba), Roundup PowerMax (EPA Reg. #524-549; active ingredient: glyphosate), Flexstar (EPA Reg. #100-1385; active ingredient: fomesafen) and Tundra (EPA Reg. #1381-196; active ingredient: bifenthrin) to the target field on June 20, 2017. I informed Mr. Sensmeier he would be receiving a Pesticide Investigation Inquiry (PII) form to be completed and returned. The form was returned on August 7, 2017, and indicated the following:
    a) Application date & time: June 20, 2017, between 9:00am and 1:00pm (CDT).
    b) Target Field: soybean field directly adjacent east of Mr. Wade's bean field
    c) Application rate of Xtendimax: 44oz per acre
    d) Adjuvants: Class Act Ridin AG160098

e) Nozzles: TTI 04
f) Winds: 7 miles per hour from the southeast (blowing toward Mr. Wade's field).
g) Applicator: Jay Sensmeier
h) Buffer used: yes (120 feet)
i) Ground speed: 12 mph
j) Boom Height: 24 inches
k) Checked Registrants website before application: yes
l) Checked Field Watch before application: no
m) Surveyed site before application: yes

6. A check of the historical weather conditions at the date and time of Mr. Sensmeier's application were reported from the following weather stations as follows:
   - Carmi Illinois Airport (approximately 17 miles away): Winds were reported from the north/northwest, west and southwest (blowing away from Mr. Wade's field) between 3.5mph and 8.1mph. The winds were reported calm between 11:55am and 12:15pm (CDT). No gusts were reported.
   - Evansville Indiana Airport (approximately 20 miles away): Winds were reported from the west/southwest (blowing away from Mr. Wade's field) between 5.8mph and 10.4mph. No gusts were reported.
   - Poseyville Indiana weather station: (approximately 5 miles): Winds were reported from the southwest, west, east, south, northwest, southeast, and north (blowing toward Mr. Wade's field at times) between 1mph to 7mph. No gust reported.

7. On July 19, 2017, the collected vegetation and soil samples were turned into the Indiana State Chemist Residue Lab for analysis. The results were reported back on November 29, 2017, and indicated the following:

Case # 2017/0981			**Investigator: S. Farris**			
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**			
			Dicamba	DCSA	5-OH Dicamba	Fomesafen
2017-510141	Soybean vegetation 300 ft west of target field	Vegetation	BQL	BDL	BDL	BDL
2017-510142	Soybean vegetation 150 ft west of target field	Vegetation	0.94	BDL	BDL	BDL
2017-510143	Soybean vegetation 50 ft west of target field	Vegetation	0.96	BDL	BDL	BDL
2017-510144	Soybean vegetation in target field	Vegetation	BQL	4.7	BDL	0.56
2017-510145	Soil from target field	Soil	10.5	468	BDL	144
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC Product applied= Xtendimax and Flexstart Application=6/20/17 Sampling=7/17/17						
LOQ(ppb)		Soil and Vegetation	0.7	0.3	3	0.3

Signature		**Date**	11/29/17

8. The Xtendimax Supplemental Label stated the following:
    - *"Before making an application, the applicator must survey the application site for neighboring non-target susceptible crops. The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site."*
    - ***DO NOT APPLY*** *this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops . . ."*

Scott M. Farris
Investigator

Date: December 11, 2017

Disposition: Jay Sensmeier was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry before application.

Jay Sensmeier was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when wind is blowing toward sensitive crops. A civil penalty in the amount of $100.00 was assessed for this violation.

Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton
Compliance Officer

Draft Date: February 2, 2018
Final Date: March 22, 2018

CASE SUMMARY

Case #2017/1001

Complainant: Steve Hoke
13874 N. Freelandville Road
Oaktown, IN 47561
812-681-0020 cell
812-745-4062 home

Respondent: Clay Williams
10023 N. Buckthal Road
Bicknell, IN 47512
815-881-7375

1. On July 10, 2017, Steve Hoke spoke with Joe Becovitz, Pesticide Program Specialist for the Office of Indiana State Chemist (OISC) regarding a dicamba drift complaint. Mr. Hoke stated he has five or six different soybean fields that have dicamba drift injury.

2. On July 11, 2017, I met with Steve Hoke and we went to his soybean field located on the west side of South County Road 500 East, near Oaktown, Indiana. Mr. Hoke stated Bill Williams had applied a dicamba product to a soybean field located across the road to the east of his bean field and to a field to the adjacent north of his field that may have impacted his Liberty, non-dicamba tolerant (DT) beans. Mr. Hoke indicated he had planted the field on April 15, 2017, and first noticed symptoms to his bean around the middle of June 2017. Mr. Hoke also informed me he had not applied any dicamba products this year on any of his farm fields. Mr. Hoke stated he had made a post-emergent application of Kong (generic Liberty) (EPA Reg. #88685-2-84237; active ingredient: glufosinate) and Warrant (EPA Reg. #524-591; active ingredient: Acetochlor) to his bean field on June 3, 2017.

3. During my on-site investigation I did the following:
    a) Looked for but did not observe, nor learn of from Mr. Hoke, any other dicamba applications made in the areas adjacent to his soybean field.
    b) Observed and photographed what appeared to be exposure symptoms (figure #1 below) to a growth regulator type of herbicide such as dicamba (no notable pattern of drift). These symptoms did not appear to be more notable in any sections of the field, closest to the target field, but symptoms were observed throughout the field.
    c) Collected soybean vegetation from Mr. Hoke's field and a vegetation and soil sample from the target field to the adjacent North of Mr. Hoke's bean field. The target field did not have any notable weed vegetation on the south side of the field, closest to Mr. Mason's bean field, which may suggest no buffer zone was left.
    d) The graph below (Illustration #1) shows the field locations in question and areas where samples were obtained. Wind information is also noted on the illustration and is explained later in this report.

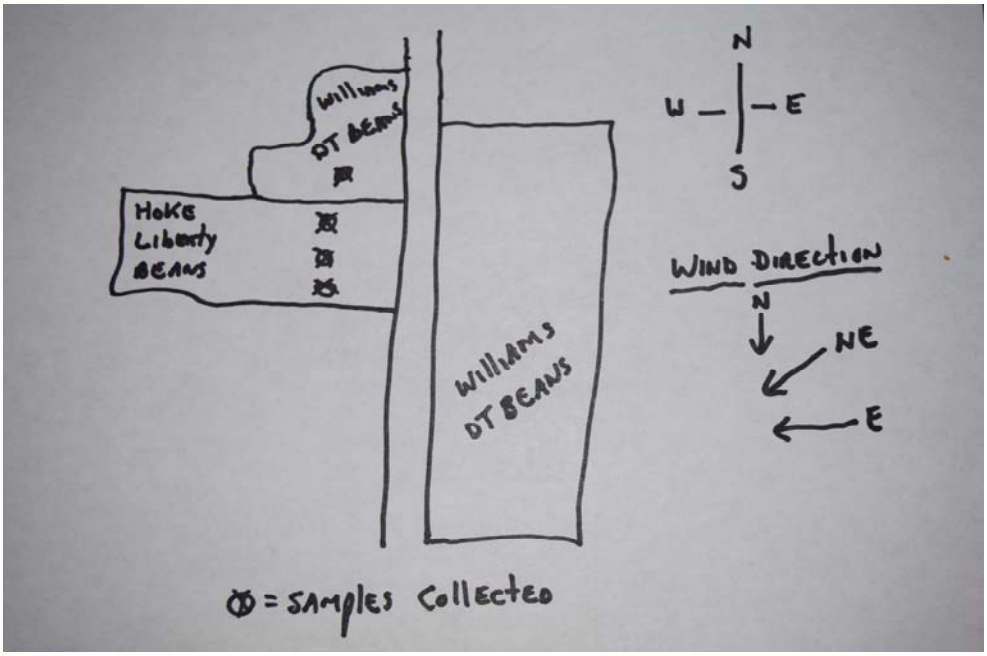


Illustration #1

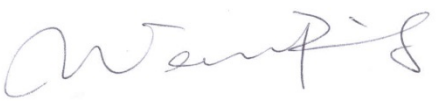
Figure #1

4. I contacted Bill Williams and spoke to him about the target field in question. Mr. Williams state the applicator for that field was Clay Williams. I contacted Clay Williams and spoke to him about the target field. Mr. C. Williams indicated he had applied Engenia (EPA Reg. # 7969-345; active ingredient: dicamba) and Roundup PowerMax (EPA Reg. #524-549; active ingredient: glyphosate). Mr. C. Williams indicated no buffer had been used. I informed Mr. C. Williams he would be receiving a Pesticide Investigation Inquiry (PII) form to be completed and returned. The PII form was returned and indicated the following:
    a) Application date & time: June 5, 2017, between 6:00pm and 7:00pm (EST).
    b) Target Field: soybean field directly north and east of Mr. Hoke's bean field
    c) Application rate of Engenia: 12.8oz per acre
    d) Adjuvants: Class Act & Interlock
    e) Nozzles: TTI 04
    f) Winds: from North at 8 miles per hour (mph) – (blowing toward Mr. Hoke's field)
    g) Applicator: Clay Williams
    h) Buffer used: no

i) Ground speed: 8 mph
j) Boom Height: 18 inches
k) Checked Registrants website before application: no
l) Checked Field Watch before application: no
m) Surveyed site before application: yes

5. A check of the historical weather conditions at the date and time of Mr. C. Williams application were reported from the following weather stations as follows:
   - Robinson Illinois Airport (approximately 17 miles away-CDT): Winds were reported from the north/northeast (blowing toward from Mr. Hoke's bean field), between 6.9 mph and 10.4 mph. No gusts were reported.
   - Daviess County Airport (approximately 21 miles away-EST): Winds were reported from the North, East and Northwest (blowing toward Mr. Hoke's field), between 3.5 mph and 9.2 mph. No gusts were reported.

6. On July 19, 2017, the collected vegetation and soil samples were turned into the Indiana State Chemist Office for analysis. The results were reported back on December 18, 2017, and indicated the following:

Case # 2017/1001		**Investigator: S. Farris**			
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**		
			Dicamba	**DCSA**	**5-OH Dicamba**
2017-510155	Soybean vegetation 300 ft south of target field	Vegetation	BDL	BDL	BDL
2017-510156	Soybean vegetation 150 ft south of target field	Vegetation	BDL	BDL	BDL
2017-510157	Soybean vegetation 50 ft south of target field	Vegetation	BDL	BDL	BDL
2017-510158	Soybean vegetation in target field	Vegetation	41.3	1657*	BDL
2017-510159	Soil from target field	Soil	166	270	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC *results exceeded calibration curve range and reported as minimum concentration found.					
LOQ (ppb)		Vegetation	2	1	20
LOQ (ppb)		Soil	2	0.2	2
Signature			**Date**	12/21/17	

7. The Engenia Supplemental Label stated the following:

   - *"DO NOT apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption."*

- *"Do Not tank mix any product with Engenia unless: You check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia."*
- *"The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available."*

Scott M. Farris
Investigator

Date: December 19, 2017

Disposition: Clay Williams was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of registrant's and sensitive crop websites.

Clay Williams was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton
Compliance Officer

Draft Date: February 5, 2018
Final Date: March 22, 2018

CASE SUMMARY

Case #2017/1002

Complainant: Steve Hoke
13874 N. Freelandville Road
Oaktown, IN 47561
812-681-0020 cell
812-745-4062 home

Respondent: Curtis Horton — Private Applicator
7779 S CR 2 E
Carlisle, IN 47838
812-398-3982

1. On July 10, 2017, Steve Hoke spoke with Joe Becovitz, Pesticide Program Specialist for the Office of Indiana State Chemist (OISC) regarding a dicamba drift complaint. Mr. Hoke stated he has five or six different soybean fields that have dicamba drift injury.

2. On July 11, 2017, I met with Steve Hoke and we went to his soybean field located on the northwest corner of South County Road 350 East and East County Road 900 South, near Oaktown, Indiana. Mr. Hoke stated Curtis Horton had applied a dicamba product to soybean fields located across the road to the south and to the adjacent west of his bean field that may have impacted his Liberty, non-dicamba tolerant (DT) beans. Mr. Hoke indicated he had planted the field on April 15, 2017, and first noticed symptoms to his beans around the middle of June 2017. Mr. Hoke also informed me he had not applied any dicamba products this year on any of his farm fields. Mr. Hoke stated he had made a post-emergent application of Kong (generic Liberty) (EPA Reg. #88685-2-84237; active ingredient: glufosinate) and Warrant (EPA Reg. #524-591; active ingredient: Acetochlor) to his bean field on June 3, 2017.

3. During my on-site investigation I did the following:
    a) Looked for but did not observe, nor learn of from Mr. Hoke, any other dicamba applications made in the areas adjacent to his soybean field.
    b) Observed and photographed what appeared to be exposure symptoms (figure #1 below) to a growth regulator type of herbicide such as dicamba (no notable pattern of drift). These symptoms did not appear to be more notable in any sections of the field, closest to the target field, but symptoms were observed throughout the field.
    c) Collected soybean vegetation from Mr. Hoke's field and a vegetation and soil sample from the target field to the adjacent east of Mr. Hoke's bean field.
    d) The graph below (Illustration #1) shows the field locations in question and areas where samples were obtained. Wind information is also noted on the illustration and is explained later in this report.

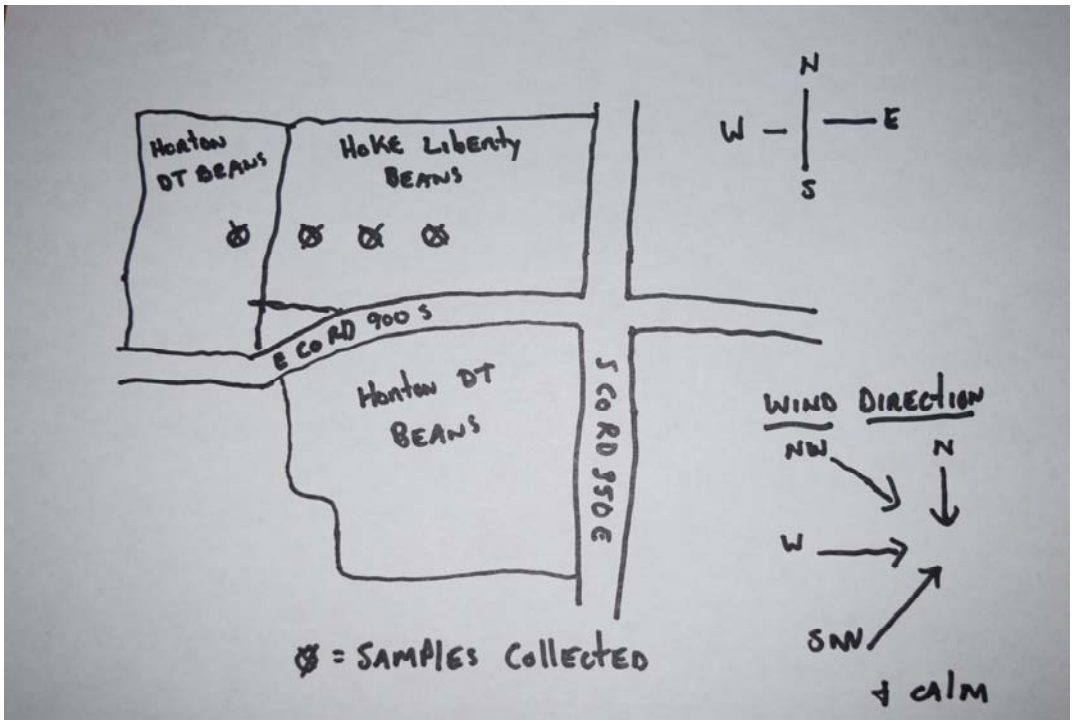


Illustration #1

Figure #1

4. I contacted Curtis Horton and spoke to him about the target field. Mr. Horton indicated he had applied Engenia (EPA Reg. #7969-345; active ingredient: dicamba) and Roundup PowerMax (EPA Reg. #524-549; active ingredient: glyphosate) and Zidua (EPA Reg. #7969-338; active ingredient: pyroxasulfone). Mr. Horton indicated no buffer had been used, but stated the winds were low and he did not believe they would have caused any drift to Mr. Hoke's beans. I informed Mr. Horton he would be receiving a Pesticide Investigation Inquiry (PII) form to be completed and returned. The PII form was returned and indicated the following:
    a) Application date & time: June 1, 2017, between 4:13pm and 5:10pm (EST).
    b) Target Field: soybean field directly west and south of Mr. Hoke's bean field
    c) Application rate of Engenia: 12.8oz per acre
    d) Adjuvants: Grounded
    e) Nozzles: TTI 04

f) Winds: from North and west/northwest at 3-4 miles per hour (mph) – (blowing toward Mr. Hoke's field during part of the application time frame)
g) Applicator: Curtis Horton
h) Buffer used: no
i) Ground speed: 8 mph
j) Boom Height: 18 inches
k) Checked Registrants website before application: no
l) Checked Field Watch before application: no
m) Surveyed site before application: yes

5. A check of the historical weather conditions at the date and time of Mr. Horton's application were reported from the following weather stations as follows:
   - Robinson Illinois Airport (approximately 16 miles away-CDT): Winds were reported from the north, northwest, west, and southwest (blowing toward from Mr. Hoke's bean field during part of the application period), between 3.5 mph and 10.4 mph. No gusts were reported.
   - Daviess County Airport (approximately 20 miles away –EST): Winds were reported from the north/northwest between 4.6 mph and 6.9 mph (blowing toward Mr. Hoke's bean field during part of the application. Winds were also reported as calm during part of the application time period.

6. On July 19, 2017, the collected vegetation and soil samples were turned into the Indiana State Chemist Office for analysis. The results were reported back on November 29, 2017, and indicated the following:

Case #	**2017/1002**			**Investigator**		**Scott Farris**
Sample #	Sample Description	Amount of Analyte (ppb)				
		Matrix	**Dicamba**	**DCSA**	**5-OH Dicamba**	**Pyroxasulfone**
2017-510151	Soybean vegetation 300 ft east of target field	Vegetation	0.821	BDL	BDL	BDL
2017-510152	Soybean vegetation 150 ft east of target field	Vegetation	0.825	BDL	BDL	BDL
2017-510153	Soybean vegetation 50 ft east of target field	Vegetation	0.746	BDL	BDL	BDL
2017-510154	Soil from target field	Soil	4.12	56.3	BDL	33.7
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC Product applied= Zidua and Engenia Application=? Sampling=7/19/17						
LOQ (ppb)	Soil/Vegetation		0.7	0.3	3	0.3
Signature				**Date**	11/29/17	

7. The above lab results indicated the presence of dicamba in all vegetation soybean samples collected from Mr. Hoke's field. The results did not detect the presence of any of the Zidua product in the vegetation samples submitted from Mr. Hoke's bean field.

8. The Engenia Supplemental Label stated the following:

   - *"DO NOT apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption."*
   - *"Do NOT tank mix any product with Engenia unless: You check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia."*
   - *"The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available."*

Scott M. Farris
Investigator

Date: December 19, 2017

Disposition: Curtis Horton was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label language regarding the checking of the registrant's and sensitive crop websites.

Curtis Horton was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label language regarding the potential for drift. A civil penalty in the amount of $100.00 was assessed for this violation.

Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton
Compliance Officer

Draft Date: February 5, 2018
Final Date: March 22, 2018

CASE SUMMARY

Case #2017/1010

Complainant: Shannon Barr
3471 N. Royal Center Pike
Logansport, IN 46947
574-721-9759

Respondent: Anthony Herd — Private Applicator
5105 N. CR 200 W.
Logansport, IN 46947
574-889-2312
574-889-3955

1. On July 13, 2017, Shannon Barr spoke with Joe Becovitz, Pesticide Program Specialist for the Office of Indiana State Chemist (OISC) regarding a dicamba drift complaint. Mr. Barr stated he first noticed injury to his soybeans on July 10 and believed the dicamba application was made about July 2.

2. On July 14, 2017, I met with the complainant to conduct an on-site physical investigation of the alleged off-target pesticide movement incident reported to OISC. The complainant advised me that he believed his non-DT Roundup Ready beans had been damaged by an application made by Mr. Herd to a nearby DT soybean field.

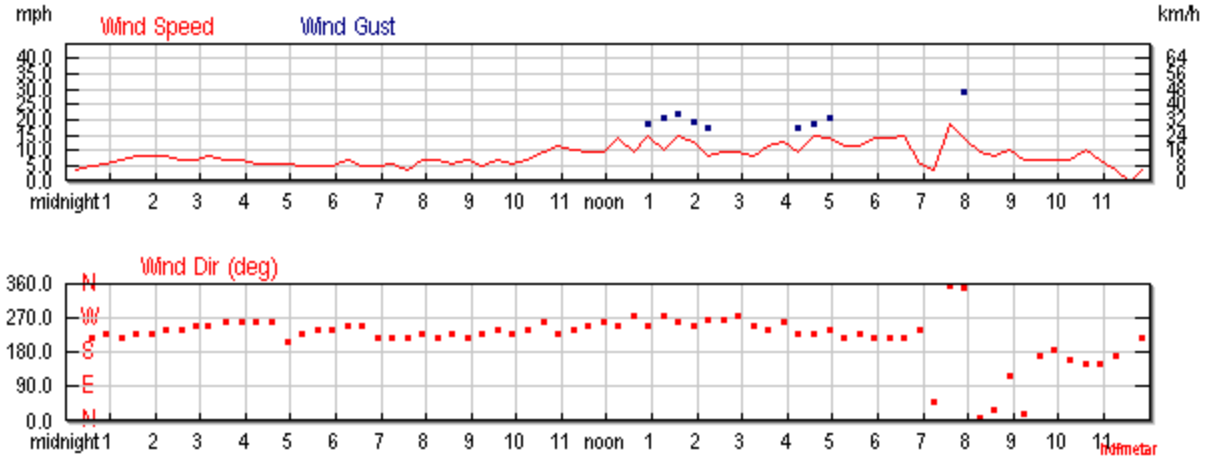
3. During my on-site investigation I did the following:
   a) Looked for and did not observe another potential dicamba application made in the area adjacent to the impacted site.
   b) Observed and photographed what I believed to be fairly uniform dicamba exposure symptoms (figure 1) throughout the complainant's non-target, non-DT soybean field (figure 2) located to the northeast of the target field. The target field and the complainant's non-target field were separated by a ditch/waterway approximately 326 feet. (figure 3).
   c) Collected soybean plant samples from impacted areas of the complainant's non-target soybean field for visual analysis by the Purdue Plant and Pest Diagnostic Lab (PPPDL).
   d) Collected samples for chemical analysis by the OISC Pesticide Residue Laboratory from the following areas:
      i) Impacted soybean plants from complainant's non-target soybean field;
      ii) Normal looking soybean plants from the target soybean field.
   e) Made a diagram/map of the investigation site, depicting locations of relevant fields, sample collection, roads, structures, and other landmarks (figure 4).

4. On July 20, 2017, I collected written records from the applicator. The written records and statements addressed the below items as follows:
   a) Application date & time: June 20, 2017; from 9:30am-10:30am
   b) Target field: soybean field to the southwest of complainant's soybean field;

c) Pesticides: Engenia (dicamba) EPA Reg. #7969-345 & Roundup Powermax (glyphosate) EPA Reg. #524-549;
d) Application rate: 12.8 oz. per acre Engenia; 28 oz. per acre PowerMax
e) Adjuvants: Class Act Ridion;
f) Nozzles: Engenia flat fan
g) Boom height: 18 inches
h) Ground speed: 13 mph
i) Winds: 5-8 mph from the southwest;
j) Applicator: Anthony Herd;
k) Certified supervisor: not applicable;
l) Left a 110' untreated buffer next to non-target site: No
m) Checked registrant's web site before application: No
n) Checked Field Watch before application: No
o) Surveyed application site before application: Yes

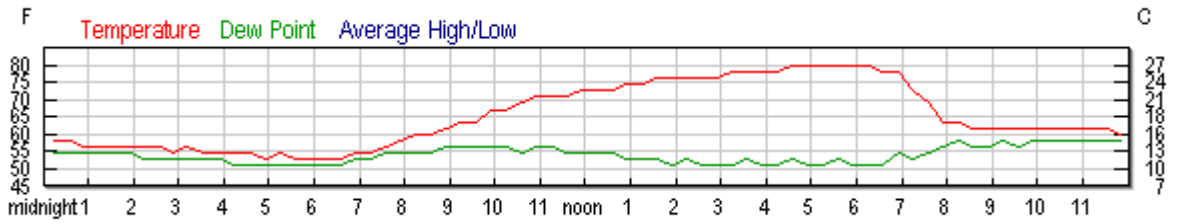
5. I searched wind data from www.weatherunderground.com for zip code 46947 in Logansport, Indiana for the reported dates and times of the application. The results of that search indicated that wind speeds and directions during the application were as follows:

June 20, 2017
As recorded at Logansport 5-8 mph out of the southwest



Logansport wind data 8 miles south southwest

6. The following historical weather data indicates that two and one half hours after the application the air temperature had risen from 63 degrees to 76 degrees. As shown in the previous chart winds were still out of the south and west at 10-15 mph with consistent gusts from 19-23 mph.



7. The report from the PPPDL states, *"Cupping and puckering of leaves is indicative of injury from dicamba."*

8. The report from the OISC Pesticide Residue Laboratory states:

Case #	**2017/1010**			**Investigator**		**K. Neal**
Sample #	Sample Description	Amount of Analyte (PPB)				
		Matrix	**Dicamba**	**5-OH Dicamba**	**DCSA**	**Glyphosate**	**AMPA**
2017-220646	Barr beans N Royal center pike	Veg	BDL	BDL	BDL	1042	BDL
2017-220647	Herd beans S.No.35 SW of Barr	Veg	12.7	BDL	309	2795	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC							
LOQ	Vegetation		2 ppb	2 ppb	0.2 ppb	25 ppb	125 ppb
Signature				**Date**	8/12/2017		

Figure One

Figure Two

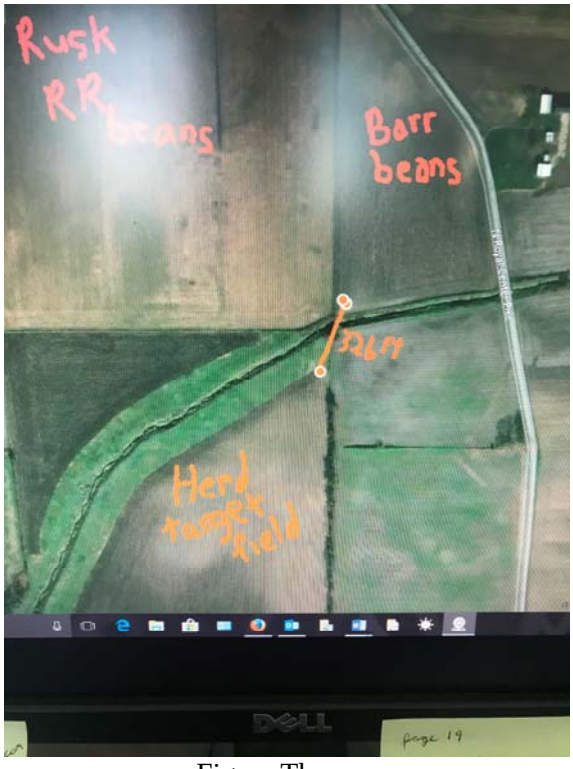


Figure Three

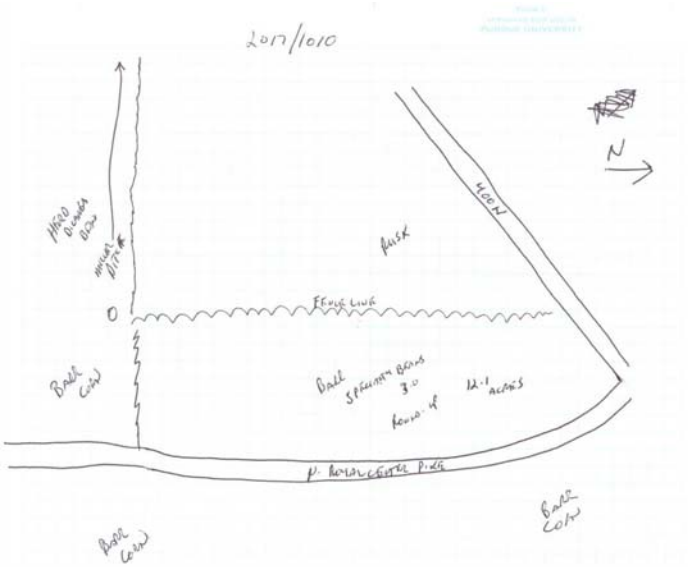


Figure Four

9. The PPPDL report and the wind direction data suggest that dicamba from the application to the target field moved off-target to the complainant's non-target soybean field. The wind direction data supports that the Engenia was applied when the wind was blowing toward the sensitive non-DT soybeans.

10. The label for Engenia states, *"In addition to the required 110 foot down wind spray buffer, additional protections are required for dicamba sensitive crops. DO NOT apply when wind is blowing in the direction of neighboring sensitive crops."* And *"DO NOT apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption."* The label further states, *"The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available."* And, *"DO NOT tank mix any product with Engenia unless . . . you check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia . . ."*

Kevin W. Neal
Investigator

Date: November 15, 2017

Disposition: Anthony Herd was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding checking sensitive crop registry and registrant's website before application.

Anthony Herd was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift to non-target vegetation. A civil penalty in the amount of $100.00 was assessed for this violation.

Consideration was given to fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton
Compliance Officer

Draft Date: January 25, 2018
Final Date: March 22, 2018

CASE SUMMARY

Case #2017/1021

Complainant: Ed Jaynes
3110 S CR 600 E
Seymour, IN 47274
812-521-7337

Respondent: Kyle Wischmeier — Private Applicator
3685 E 550 S
Brownstown, IN 47220
812-525-7639

1. On July 11, 2017, I spoke with Mr. Jaynes who stated he first noticed dicamba type injury to his Liberty Link soybeans around the end of June. Mr. Jayne stated he believed the injury was the result of an application made to a field that is located near his soybean field. Mr. Jayne did not know who made the application.

2. On July 11, 2017, I went to the complainant's home to conduct an on-site physical investigation of the alleged off-target pesticide movement incident reported to OISC.

3. During my on-site investigation I did the following:
   a) Observed and photographed what I believed to be fairly uniform dicamba exposure symptoms (figure 1) throughout the complainant's non-target, non-DT soybean field (figure 2) located to the north and east of the Wischmeier target field. The Wischmeier target field and the complainant's non-target field were separated by a county road and vegetative roadside areas totaling 33 feet and another field where the Wischmeier beans were planted directly adjacent to the Jaynes beans. (figures 3 and 4).
   b) Collected soybean plant samples from impacted areas of the complainant's non-target soybean field for visual analysis by the Purdue Plant and Pest Diagnostic Lab (PPPDL).
   c) Collected samples for chemical analysis by the OISC Pesticide Residue Laboratory from the following areas:
      i) Impacted soybean plants from complainant's non-target soybean field;
      ii) Normal looking soybean plants from the target soybean field; and
   d) Made a diagram/map of the investigation site, depicting locations of relevant fields, roads, structures, and other landmarks (figure 5).


Figure One


Figure Two


Figure Three


Figure Four

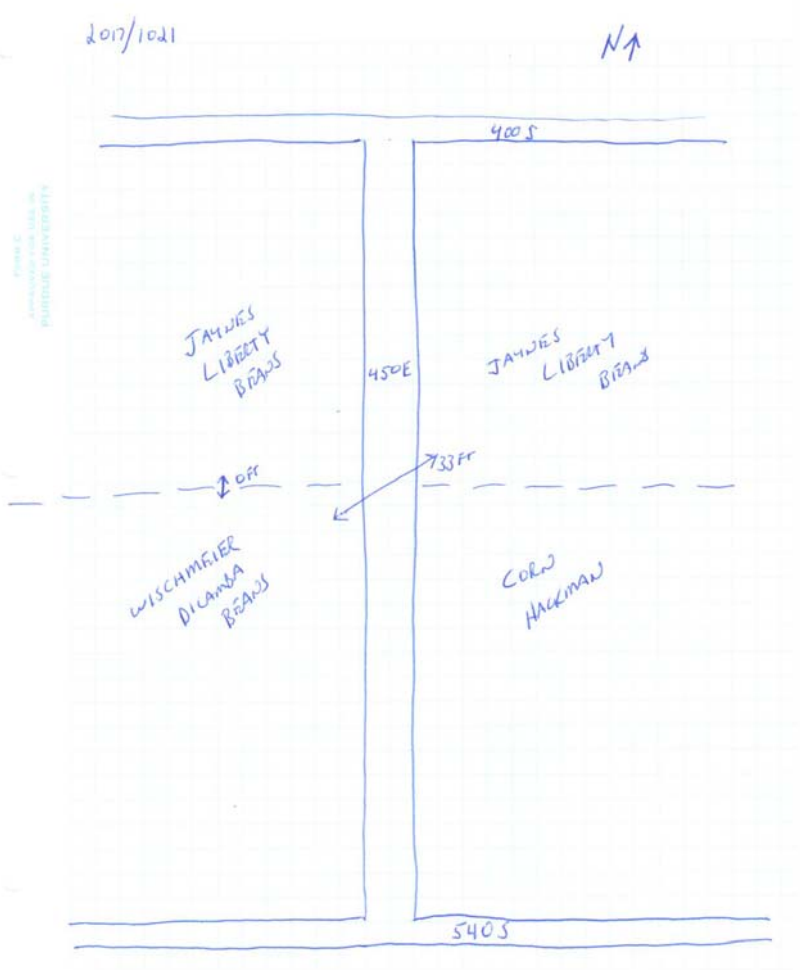
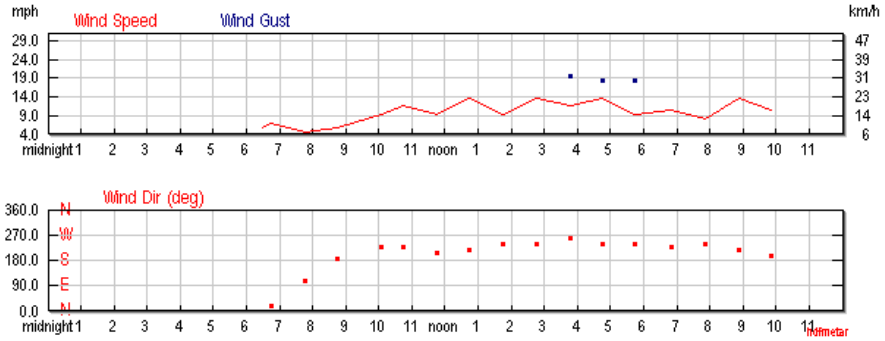


Figure Five

4. On July 12, 2017, I collected written records from the applicator. The written records and statements addressed the below items as follows:
   a) Application date & time e: June 21, 2017; from 9:00am-10:19am;
   b) Target field: soybean field to the south and west of complainant's soybean field;
   c) Pesticides: Engenia (dicamba) EPA Reg. #7969-345 & Roundup Powermax (glyphosate) EPA Reg. #524-549 & Intensity (clethodim) EPA Reg. #34704-864 & Zidua (pyroxasulfone) EPA Reg. #7969-374
   d) Application rate: Powermax 32 oz. per acre, Engenia 12.8 oz. per acre, Intensity 10 oz. per acre, Zidua 1.5 oz. per acre;
   e) Adjuvants: Class Act Ridion & AG16098;
   f) Nozzles: TTI 11005
   g) Boom height: 24 inches
   h) Ground speed: 10-10.5 mph
   i) Winds: 6-9 mph from the southwest;
   j) Applicator: Kyle Wischmeier;
   k) Certified supervisor: not applicable;
   l) Left a 110' untreated buffer next to non-target site: no
   m) Checked registrant's web site before application: no
   n) Checked Field Watch before application: yes
   o) Surveyed application site before application: yes

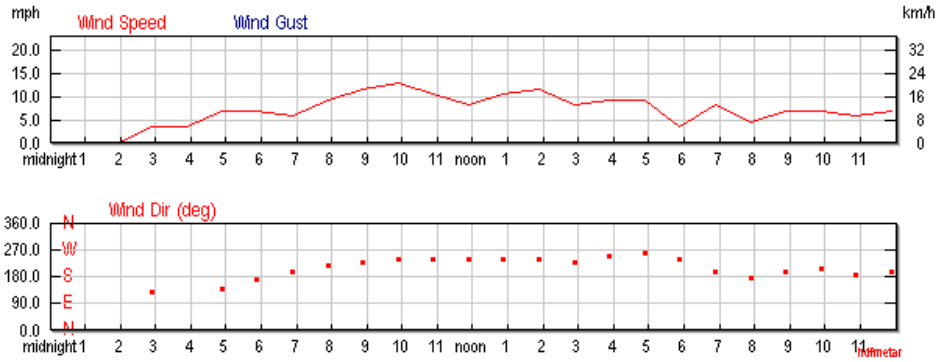
5. I searched wind data from w ww.weatherunderground.com for zip code 47274 in Seymour, Indiana for the reported date and time of the application. The results of that search indicated that wind speeds and directions during the application were as follows:

As recorded at Columbus 4-9 mph out of the southwest



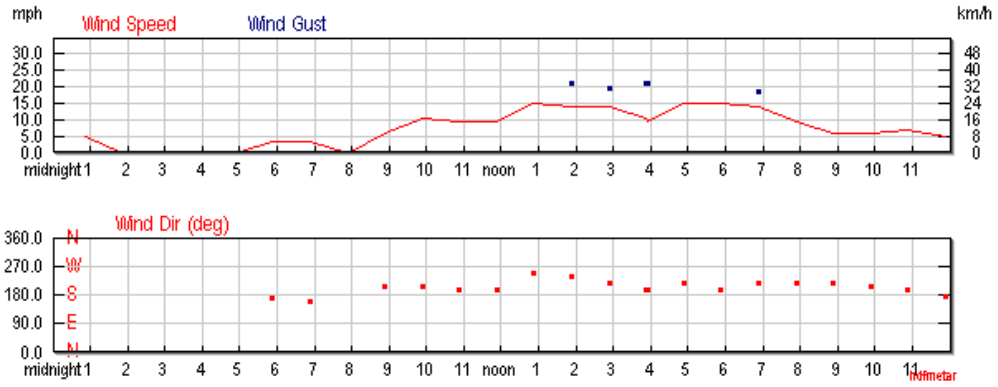
Columbus Wind Data 17 Miles North

As recorded at Bloomington 11-12 mph out of the southwest



Bloomington Wind Data 38 Miles West

As recorded at Louisville, KY 6-10 mph out of the southwest



Louisville Wind Data 49 Miles South

6. The wind would have been blowing in the direction of the complainants non-DT soybeans.

7. The report from the PPPDL states, *"Cupping and puckering of new trifoliates is indicative of injury from dicamba. Some chlorosis could be indicative of injury from glyphosate."*

8. The report from the OISC Pesticide Residue Laboratory states:

Case #	2017/1021			Investigator		K. Neal	
Sample #	Sample Description	Amount of Analyte					
		Matrix	Dicamba	5-OH Dicamba	DCSA	Glyphosate	AMPA
2017-220643	Jaynes beans 450 E west side	Veg	BQL	BDL	BDL	BDL	BDL
2017-220644	Wischmeirer Beans 450 E	Veg	3.61	BDL	580*	2388	BDL
2017-220645	Jaynes beans 450 E east side	Veg	2.31	BDL	BDL	BDL	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC *minimum concentration reported due to amount exceeded calibration curve.							
LOQ	Vegetation		2 ppb	2 ppb	0.2 ppb		

Signature		Date	8/13/2017

9. The label for Engenia states:
   a) *"DO NOT tank mix any product with Engenia unless . . . You check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia."*
   b) *"DO NOT allow herbicide solution to mist, drip, drift or splash onto desirable vegetation . . ."*
   c) *"DO NOT apply when wind is blowing in the direction of neighboring specialty crops."*

Kevin W. Neal
Investigator

Date: November 7, 2017

Disposition: Kyle Wischmeier was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label language regarding the checking of the Registrant's website before application.

Kyle Wischmeier was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow all label language regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton
Compliance Officer

Draft Date: January 25, 2018
Final Date: March 22, 2018

CASE SUMMARY

Case #2017/1049

Complainant:	Robert Memering Carnahan Grain 16046 E. Farmstead Road Edwardsport, Indiana 47528 812-887-4871	Manager
Respondent:	Tony Walton White River Co-Op 1164 W. 450 N. Washington Indiana 47501 812-698-9722	Certified Applicator Licensed Business
Respondent:	Andrew Englehart Steve Myers Farms 5668 N. SR 57 Washington, Indiana 47562	Private Applicator

1. On July 18, 2017, the Complainant filed a second complaint with me while I was investigating another complaint of a dicamba drift/volatilization in the area.

2. The complainant told me he believed a pesticide spray application of a dicamba product by the White River Co-Op moved onto two of his fields of non-dicamba tolerant (DT) soybeans. The two fields are located along side of and across the road from the field of DT soybeans where the pesticide spray application of a dicamba product was made. (fig. 5). The complainant said he noticed his soybeans cupping and puckering on or about July 10, 2017. In the small field which borders the dicamba tolerant soybeans, the injury symptoms (cupping and puckering), appear in just the first few rows, which separate the two fields (fig.1). In the soybeans across the road, the injury symptoms extend over a quarter of a mile and the injury symptoms appear relatively uniform with the exception of the south edge of the field where the injury symptoms are more severe. (figs. 2-4).


Fig. 1


Fig. 2


Fig. 3


Fig. 4

- Figure 1 is the separation line of the two fields that are aside by side, the tolerant soybeans are on the right of the photo.
- Figure 2 is the complainant's soybeans across the road from the dicamba tolerant soybeans in fig. 1.
- Figures 3&4 are close up photos of the injury symptoms on the complainant's soybeans in fig. 2.

3. I collected swabs, vegetation and a plant sample from the complainant's fields and took laser range finder readings from the collection points to my parked car for a reference (fig. 5). I also collected swabs vegetation and soil samples from the field of dicamba tolerant soybeans. The samples were tagged and delivered to the OISC Residue Laboratory for analysis. The plant samples were transported to the Purdue Plant and Pest Diagnostic Laboratory (PPDL) for analysis.

4. The diagrams, which follow, are the complainant's two affected fields of non-DT soybeans, the fields that surround it and sampling data in figure 5. Figure 6 is simplified with just the complainant's fields and the fields, which had DT soybeans and post emergent spray applications of Engenia.

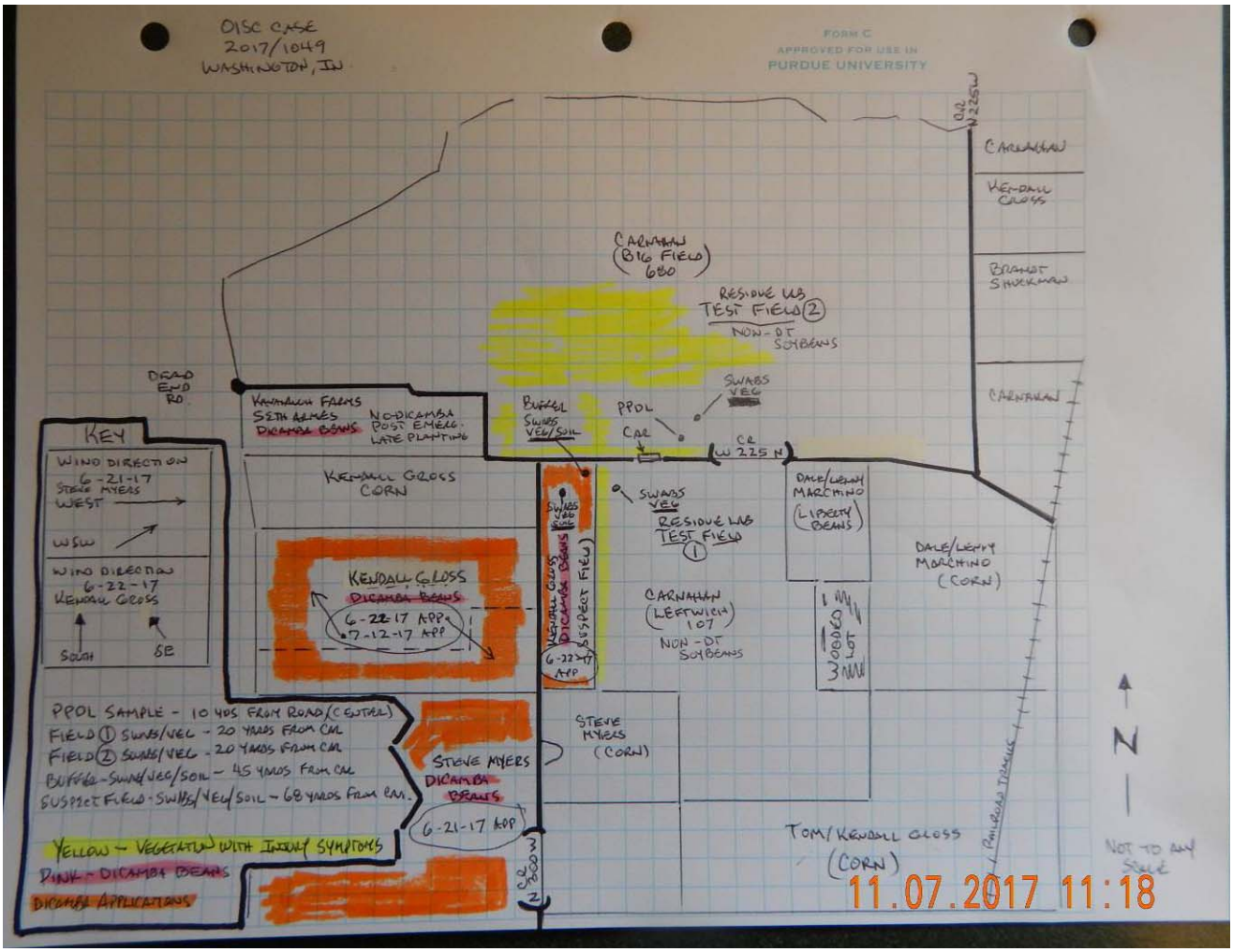


Fig. 5

- Yellow = Non DT soybeans with dicamba injury symptoms
- Pink = DT soybeans planted
- Orange = DT soybeans that had a post emergent spray application of Engenia

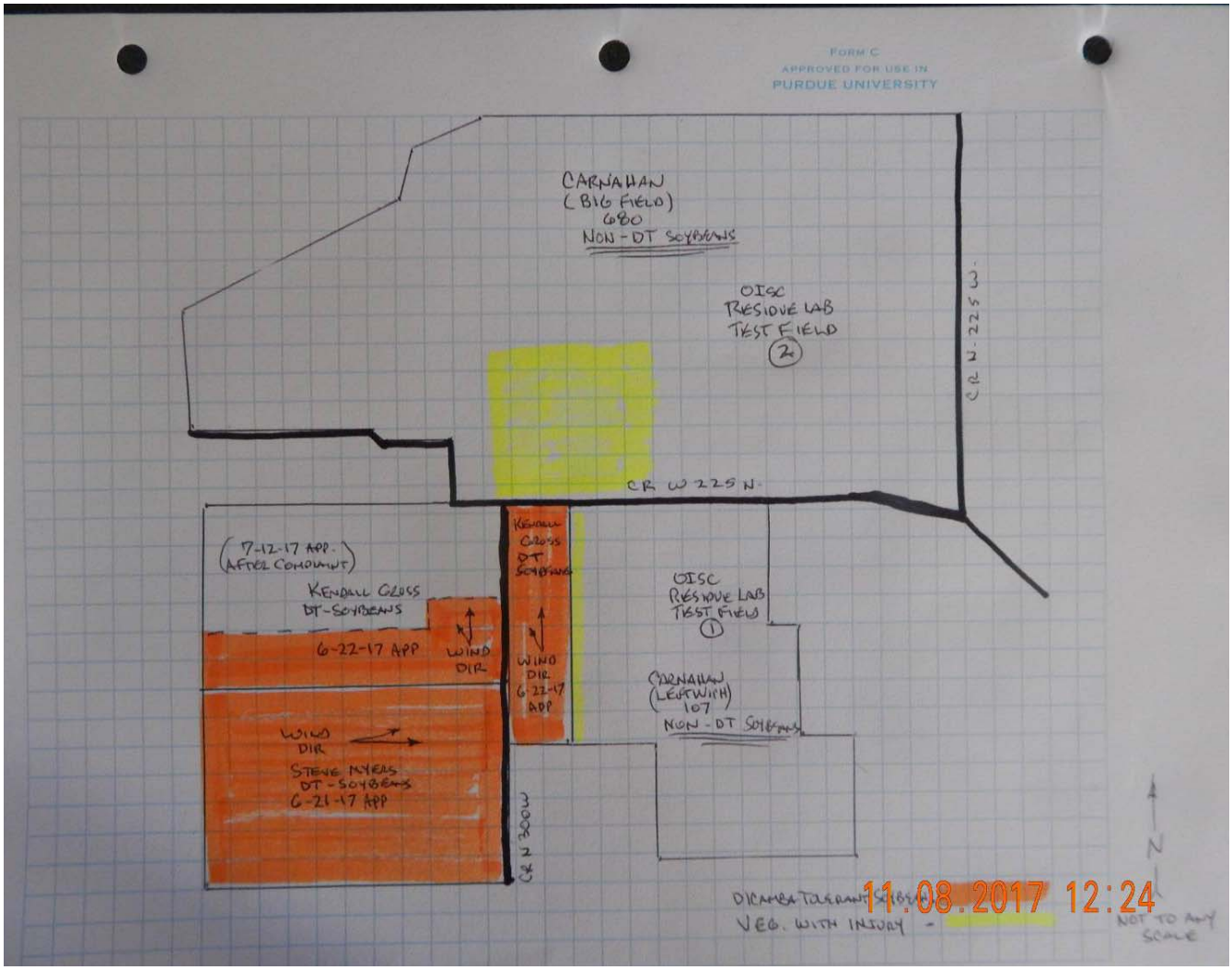


Fig. 6

- Yellow = Non DT soybeans with dicamba injury symptoms.
- Orange = DT soybeans that had a post emergent application of Engenia

5. The complainant told me he did not use any dicamba products and provided the following information for the post emergent pesticide applications to the fields in this report. The field on the south side of CR W 225 N is referred to as "*Leftwich 107*" and the pesticide spray application made on **June 22, 2017.** The field on the north side of CR W 225 N is referred to as "*Big Field 680*" and the post emergent pesticide spray application was made on **June 28 and 29 of 2017**. The tank mix in both pesticide spray applications was the same. The pesticide products used in the tank mix were:

   - *Abundit Edge, EPA Reg. #524-549-352, AI=glyphosate 48.7%*
   - *Cinch, EPA Reg. #352-625, AI=S-metolachlor 82.4%*
   - *Assure II, EPA Reg. #352-541, AI=Quizalofop-p-ethyl 10.3%*

6. I made contact with the management at White River Co-Op and was able to find out the pesticide spray application to the field of dicamba tolerant soybeans in this case was made on **June 22, 2017**. I issued a Pesticide Investigation Inquiry (PII) to Mr. Fred Albrecht, the Manager of the Co-Op. Mr. Albrecht told me the pesticide products used in that application were:

   - *Engenia, EPA Reg. #7969-345, active ingredient=dicamba 48.38%*
   - *Roundup Powermax, EPA Reg. #524-549, active ingredient=glyphosate 48.7%*

7. On July 26, 2017, I picked up the PII from the White River Co-Op. Mr. Fred Albrecht told me the Certified Applicator in this case, Tony Walton, had since retired. Mr. Albrecht told me he was able to fill out the PII from the records he had on file. Question 19 reads, *"Was Fieldwatch/Driftwatch website checked prior to application?"* The question was answered *"no"*, and this is required by the label for Engenia.

8. On October 31 and November 1 2017, I returned to Washington, Indiana based on information I received from the complainant. The information provided was owner contact information for the fields that bordered his fields. I was able to find two more fields to the south southwest of the complainant's fields where dicamba tolerant soybeans were planted and one of which had a post emergent application of a dicamba product.

9. The first field is owned by the Kavanaugh Family Farms and farmed by Jay Armes Farms of 200 Maysville Road Washington, Indiana. I met with Mr. Armes and left a PII with him. Mr. Armes told me he was sure the large Carnahan field to the north of CR W 225 N already had a post emergent pesticide spray application made because he saw tire tracks in the field and he wondered if they damaged their own beans from spray tank carryover. I pointed out to Mr. Armes the complainant did not use dicamba products and the test results for the samples submitted in this case indicated the presence of dicamba in the big field. I picked up the PII on November 3, 2017.The PII indicated the soybean field in question was planted late and there was "*no post emergent pesticide spray application of any dicamba products on the field in question*".

10. The second field is owned by Steve Myers Farms 5668 N. SR 57 Washington, Indiana. The Meyers Farm Manager is Mr. Kelly Wadsworth. I met with Mr. Wadsworth and he told me Andrew Englehart made the pesticide spray application of Engenia in this case on **June 21, 2017**. I left a PII with Mr. Wadsworth. I returned and picked up the PII on November 3, 2017. Question 19 on the PII reads *"Was Fieldwatch/Driftwatch website checked prior to application?"* The question was answered *"no"*. Checking the website prior to the application is required by the label.

11. In this case, the complainant reported seeing injury symptoms to his non-DT soybeans on or about July 10, 2017. There were three pesticide spray applications of dicamba products made to DT soybeans that border or are in close proximity to the complainant's non-DT soybeans.

    - June 21, 2017: The Steve Meyers Farm field south and west of the complainant's fields.
    - June 22, 2017: The Kendall Gross Farm field south and west of the complainant's fields.
    - July 12, 2017: The Kendall Gross Farm field south and west of the complainant's fields.

    In the paragraphs that follow, I will look at three weatherunderground sites for two of the three pesticide spray applications made. The pesticide spray application made July 12, 2017 was two days after the complainant noticed injury to his non DT- soybeans.

    The pesticide spray application to the field of DT soybeans on the Steve Meyers farm made June 21, 2017 had DT soybeans in the field to the north and northeast and corn in the field to the east before it could reach the complainant's fields. The wind speed and direction were reported on the PII as SE wind at 6mph. The source was cited on the PII as "weather station" but no station recorded. The Private Applicator is Andrew Englehart. The wind speed and wind direction taken from weatherunderground.com for Washington Indiana/Davies County Airport on June 21, 2017 from 3:30pm to 4:30 pm was:

June 21, 2017	3:35pm	WSW Direction	6.9 mph
June 21, 2017	3:55pm	W Direction	9.2 mph

June 21, 2017	4:15pm	W Direction	5.8 mph
June 21, 2017	4:35pm	SW Direction `	9.2 mph

The second weatherunderground.com source used is Princeton, Indiana located approximately 26 miles SW of Washington Indiana. The wind speed and wind direction for June 21, 2017 from 3:30pm to 4:30pm was:

June 21, 2017	3:35pm	SW Direction	11.5 mph
June 21, 2017	3:55pm	SW Direction	15 mph
June 21, 2017	4:15pm	SWS Direction	11.5 mph
June 21, 2017	4:35pm	SSW Direction	12.7 mph

The third weatherunderground.com source used is Huntingburg Indiana located approximately 30 miles SE of Washington Indiana. The wind speed and wind direction for June 21, 2017 from 3:30pm to 4:30pm was:

June 21, 2017	3:56pm	SW Direction	13.8 mph
June 21, 2017	4:56pm	SSW Direction	9.2 mph

The pesticide spray application to the field of DT soybeans on the Kendall Gross farm field located south and west of the complainant's two fields of non-DT soybeans was made on June 22, 2017. The field located on the southwest corner of CR W 225 N and CR N 300 W; along with half of the field, just west across CR N 300 W was started and completed on June 22, 2017 from 12:45pm to 1:30pm. The wind speed and wind direction reported on the PII as 9 mph SSE. The source cited on the PII for that information is "applicator estimate" and "field measurement" taken with a hand held wind meter. The Certified Applicator is Tony Walton for White River Coop. The wind speed and wind direction taken from weatherunderground.com for Washington Indiana/Davies County Airport on June 22, 2017 from 12:45pm to 1:30pm was:

June 22, 2017	12:35pm	S Direction	11.5 mph/Gusting to 18.4 mph
June 22, 2017	12:55 pm	S Direction	17.3 mph/Gusting to 23 mph
June 22, 2017	1:15pm	S Direction	15 mph/Gusting to 20.7 mph
June 22, 2017	1:35pm	S Direction	12.7 mph/Gusting to 16.1 mph

The second weatherunderground.com source used is Princeton Indiana located approximately 26 miles SW of Washington Indiana. The wind speed and wind direction for June 22, 2017 from 12:45pm to 1:30pm was:

June 22, 2017	12:35pm	S Direction	20.7 mph/Gusting to 26.5 mph
June 22, 2017	12:55pm	S Direction	19.6 mph/Gusting to 24.2 mph
June 22, 2017	1:15pm	SSE Direction	18.4 mph/Gusting to 26.5 mph
June 22, 2017	1:35pm	SSE Direction	17.3 mph/Gusting to 23 mph

The third weatherunderground.com source used is Huntingburg Indiana located approximately 30 miles SE of Washington Indiana. The wind speed and wind direction for June 22, 2017 from 12:45pm to 1:30pm was:

June 22, 2017	12:56pm	SSE Direction	10.4 mph/Gusting to 20.7 mph
June 22, 2017	1:56pm	S Direction	13.8 mph

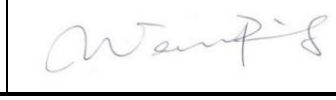
The July 12, 2017 completion date of the Kendall Gross field located on the west side of CR N 300 W comes after the reported injury in this case on July 10, 2017 so that pesticide spray application of dicamba will not be considered.

12. The test results for PPDL and the OISC Residue Laboratory follow:

The PPDL Final Report reads in part:
"Cupping and puckering of soybean trifoliates is indicative of injury from dicamba"

Joe Ikley
Weed Science Research Associate
Purdue University

The OISC Residue Laboratory final report is a copy and paste of the report from an e-mail containing the report.

Case #	**2017/1049**			**Investigator**		**B. Baker**	
Sample #	Sample Description	Amount of Analyte (ppb)					
		Matrix	**Dicamba**	**DCSA**	**5-OH Dicamba**	**Glyphosate**	**AMPA**
2017-323807	Vegetation sample from soybean field 1	Vegetation	BDL	BQL	BDL	962	72.6
2017-323808	Vegetation sample from soybean field 2	Vegetation	2.84	BQL	BDL	3219	296
2017-323809	Vegetation sample from suspect field buffer	Vegetation	BDL	*195	BDL	2808	97.7
2017-323810	Vegetation sample from suspect field app area	Vegetation	BDL	*91.6	BDL	2154	176
2017-323811	Soil sample from suspect field buffer	Soil	Not tested	Not tested	Not tested	Not tested	Not tested
2017-323812	Soil sample from suspect field app area	Soil	Not tested	Not tested	Not tested	Not tested	Not tested
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC * minimum concentration reported due to amount exceeding calibration curve Application= 6/22/17 Sampling=7/19/17 Products applied=Engenia+Roundup							
LOQ (ppb)	Vegetation		1	1	2	25	50
Signature				**Date**	9/22/2017		

13. In this case, a pesticide spray application of Engenia was made to an agricultural crop field of DT soybeans on June 22, 2017 between 12:45pm and 1:30pm. The field is located at the SE corner of CR W 225 N and CR N 300 W in Washington, Indiana. Mr. Kendall Gross owns the field and the pesticide spray application was made by the White River COOP's certified applicator Tony Walton (now retired). The triangulated weather history information in paragraph 11 of this report indicates the wind speed for the date and time of the pesticide spray application exceeded the 10 mph limit and was blowing directly (south wind) toward the complainant's non DT soybeans. All three weather sites also indicate the winds gusting over 15 miles per hour. The label for Engenia reads in part under:

"Wind speed application conditions and restrictions"
"10-15 mph- Do not apply Engenia when wind is blowing toward neighboring sensitive crops". "> 15 mph, DO NOT apply Engenia." And *"DO NOT allow herbicide solution to mist, drip, drift, or*

splash onto desirable vegetation because severe injury or destruction to desirable broadleaf plants could result"

Based on the PPDL report, the results from the OISC Residue Laboratory and the weather information. It appears in this case the pesticide spray application of Engenia made by Tony Walton of The White River COOP drifted onto the non-DT soybeans owned by the complainant and caused the injury symptoms seen in figs 2-4 of this report. It should also be noted that neither the website for Fieldwatch/Driftwatch nor the registrant's website were checked prior to the pesticide spray application of Engenia by Mr. Walton.

14. The pesticide spray application of Engenia made by Andrew Englehart for the field owned by Steve Myers located SW of CR N300 W met the label conditions with the exception of checking the website for Fieldwatch/Driftwatch prior to the application.

Brian P. Baker
Investigator

Date: November 8, 2017

Disposition: Andrew Englehart was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the sensitive crop registry. Consideration was given to the fact this was his first violation of similar nature.

Tony Walton was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the registrant's website or the sensitive crop registry.

Tony Walton was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $250.00 was assessed for this violation.

Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton
Compliance Officer

Draft Date: January 31, 2018
Final Date: March 22, 2018

CASE SUMMARY

Case #2017/1050

Complainant:	Robert Memering Carnahan Grains 16046 E. Farmstead Road Edwardsport, Indiana 47528 812-887-4871	Manager
Respondent:	Ross Dinkins Dinkins Farms, Inc. 16001 E. Farmstead Road Edwardsport, Indiana 47528 812-881-8927	Private Applicator

1. On July 18, 2017, the complainant filed a complaint with me, Agent Brian Baker of OISC, while I was investigating two other complaints of an alleged dicamba drift/volatilization.

2. On July 19, 2017, I had arranged to meet with the complainant but he was unavailable so he arranged for me to meet with Mr. Michael Carnahan. I met with Mr. Carnahan and he took me to the agricultural crop field that was bordered by a neighbor's field of dicamba tolerant (DT) soybeans. Mr. Carnahan's non-DT soybeans were cupped and puckered along the edge, which bordered the respondent's soybeans. Mr. Carnahan thought the injury symptoms occurred about a week after the adjoining field was sprayed with a dicamba product.


Fig. 1


Fig. 2


Fig. 3


Fig. 4


Fig. 5

- Figure 1 shows the two fields in this case separated by a dirt path. The complainant's crop is on the left side of the picture.
- Figure 2 is the field of dicamba tolerant soybeans.
- Figure 3 is the complainant's soybeans field.
- Figures 4&5 are a close up of the complainant's soybeans seen in figure 3.

3. I collected swabs, vegetation and a plant sample from the complainant's field and swabs, vegetation and soil from the suspect field (fig.6). The swab, vegetation and soil samples were tagged and transported to the OISC Residue Laboratory for analysis. The plant sample was taken to The Purdue Plant and Pest Diagnostic Laboratory (PPDL) for analysis.

4. Mr. Carnahan provided the following information for the pesticide application made by the complainant to the field in this case which they call "Wollerman 80". The post emergent pesticide

spray application was made on **June 26, 2017**. During follow-up conversations, I asked the complainant if he used any dicamba products in his post emergent applications and he said that he did not. He stated he used:

- *Abundit Edge, EPA Reg#524-549-352, AI= glyphosate 48.7%*
- *Cinch, EPA Reg# 352-625, AI=S-metolachlor*
- *Assure II, EPA Reg# 352-541, AI=Quizalofop-p-ethyl*

5. I was able to meet with and speak to the respondent in this case and he told me the pesticide spray application to his field in this case was made on **June 27, 2017**. The respondent was very upset when I spoke to him and made the free flowing comment, "**I went to the classes but I didn't read the label"**. I provided a Pesticide Investigation Inquiry (PII) and the respondent filled it out and returned it to me in the same hour. The respondent told me the pesticide products he used in the application were;

   - *Fexapan, EPA Reg# 352-913, active ingredient=dicamba 42.8%*
   - *Abundit, EPA Reg# 352-922, active ingredient=glyphosate 48.7%*

6. I was able to make contact with the three other farmers who have fields, which border the complainant to the north and west. The other fields in this case were planted with corn and non-dicamba tolerant soybeans (Liberty brand soybeans).

7. I completed a field sketch and diagram (fig.6). The diagram, which follows, is a photo and copy of the field diagram in the case file. The wind direction/speed information was added at a later date. The distances to the sampling points are done at a normal walking pace. There were no utility poles or other fixed reference points from which to take laser range finder readings.

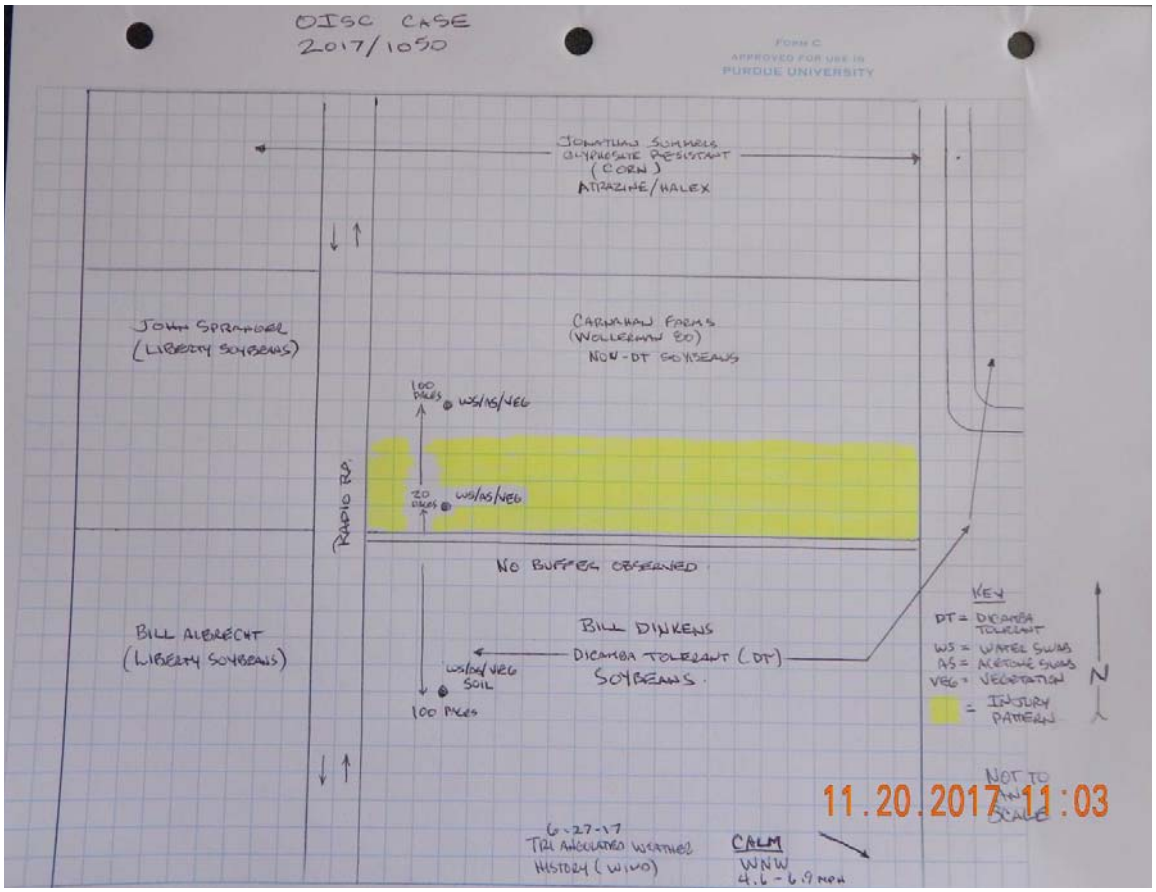


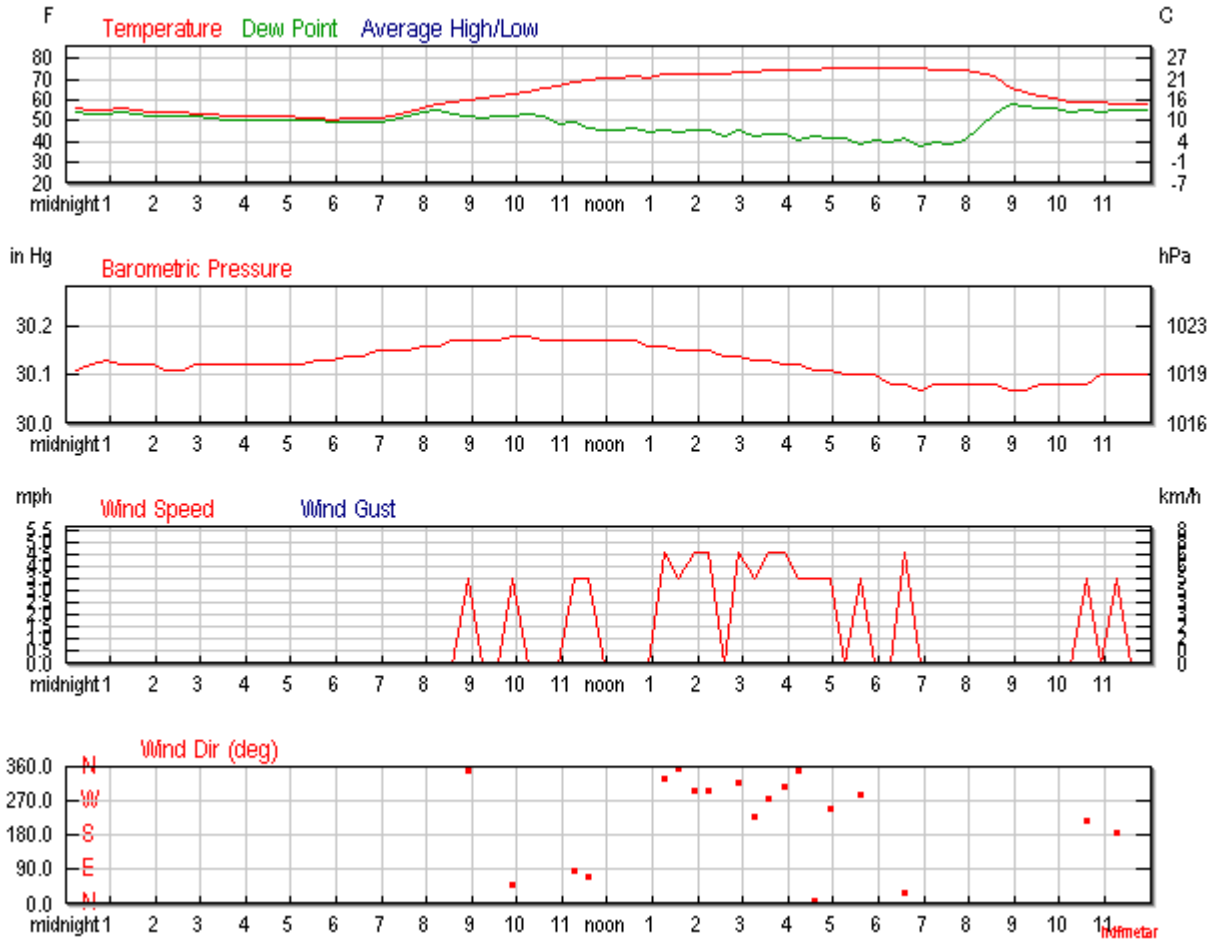
Fig. 6

8. TRIANGULATED WEATHER HISTORY FOR 6-27-19. The charts and graphs, which follow, are the weather history for Washington Indiana, Princeton Indiana and Huntingburg, Indiana. The charts and graphs are taken from weatherunderground.com.

Washington Indiana. Davies County Airport approximately 10 miles from Edwardsport IN.

DATE	TIME	WIND DIRECTION	WIND SPEEDS
6-27-17	11:55am	Calm	Calm
6-27-17	12:15pm	Calm	Calm
6-27-17	12:35pm	Calm	Calm

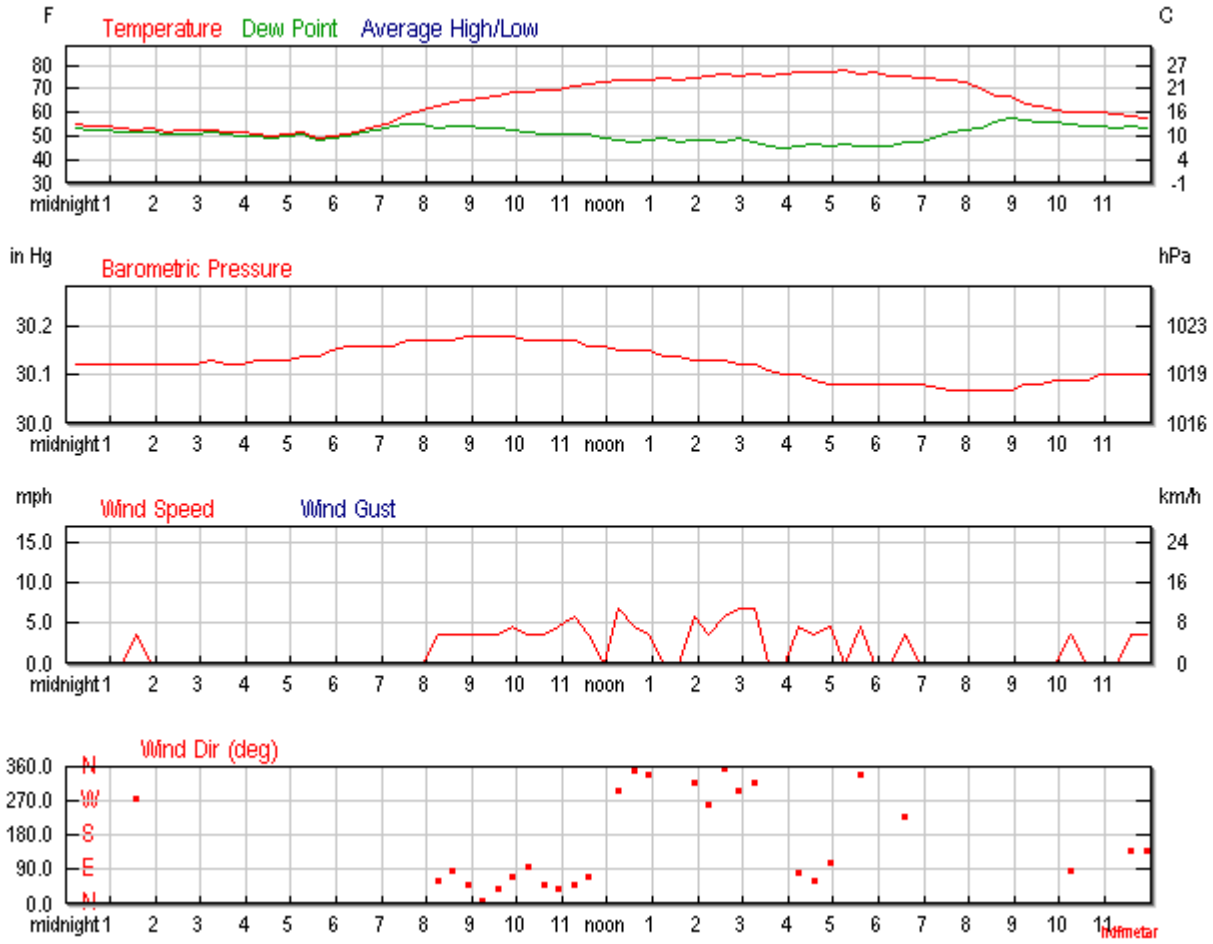
Daily Weather History Graph



Princeton Indiana, Mount Carmel Municipal Airport, Mt. Carmel, IL located approximately 35 miles SW of Edwardsport, IN.

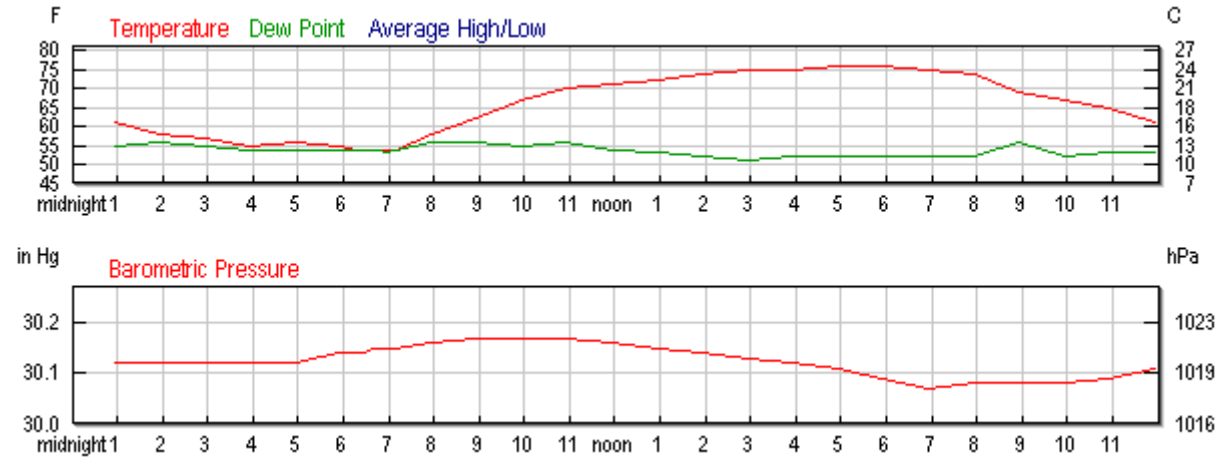
DATE	TIME	WIND DIRECTIONS	WIND SPEEDS
6-27-17	11:55am	Calm	Calm
6-27-17	12:15pm	WNW	6.9 mph
6-27-17	12:35pm	North	4.6 mph

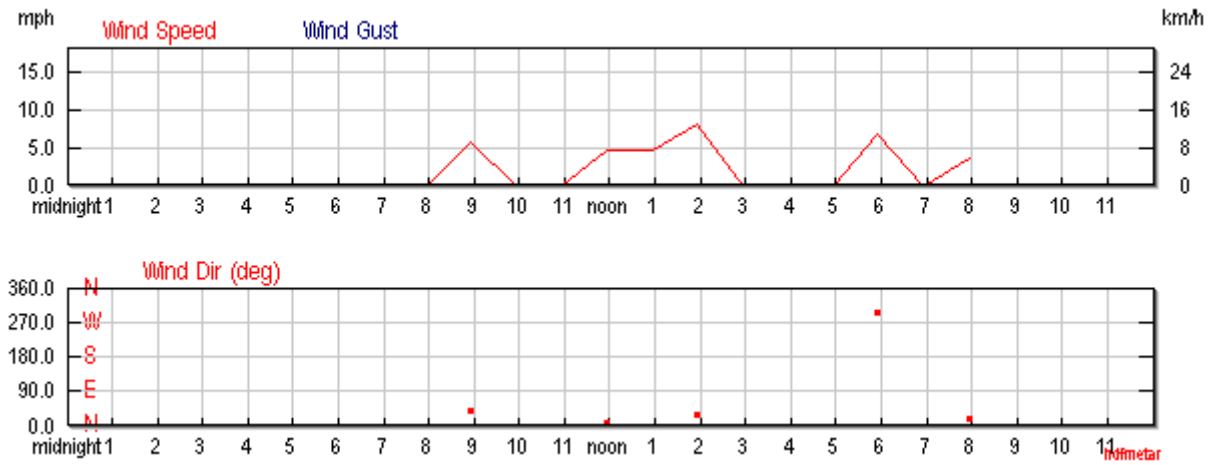
Daily Weather History Graph



Huntingburg, Indiana located approximately 40 miles SE of Edwardsport, Indiana.

DATE	TIME	WIND DIRECTIONS	WIND SPEEDS
6-27-17	11:56am	North	4.6 mph
6-27-17	12:56pm	Variable	4.6 mph





9. On July 21, 2017, I received the final report from PPDL in this case. The report reads in part;

   "Cupping and puckering on new soybean leaves is indicative of injury from dicamba".

   Joe Ikley
   Extension Weed Specialist
   Purdue University

10. On September 22, 2017, I received the final report from the OISC Residue Laboratory for the samples analyzed in this case. The following chart is a "copy and paste" of that report.

OFFICE OF INDIANA STATE CHEMIST

Pesticide Residue Laboratory

Lab Report

Case #	**2017/1050**		**Investigator**		**B. Baker**	
Sample #	Sample Description	Amount of Analyte (ppb)				
		Matrix	**Dicamba**	**DCSA**	**5-OH Dicamba**	**Glyphosate**	**AMPA**
2017-323821	Vegetation Sample of Soybeans Middle of (N) Field	Vegetation	BDL	BDL	BDL	605	BDL
2017-323822	Vegetation Sample of Soybeans (S) End of (N) Field	Vegetation	1.75	BQL	BDL	1496	113
2017-323823	Vegetation Sample of Soybeans in Suspect Field	Vegetation	BDL	6.05	BDL	468	BDL
2017-323824	Soil Sample from Suspect Field	Soil	9.64	158	BDL	53.7	BDL

PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC

Application= 6/27/17
Sampling=7/20/17

Products applied=Fexapan+Abundit

LOQ (ppb)	Soil	2	1	1	10	50
LOQ (ppb)	Vegetation	1	1	2	25	50
Signature			**Date**	10/21/2017		

The results indicate no dicamba detected in the sample taken at 100 paces north into the complainant's field, which was beyond the visual injury symptoms closer to the respondent's field to the south. At just 20 paces north into the complainant's field from the respondent's DT soybeans, there is a detection of dicamba at 1.75 ppb and the presence of but below quantification level of DCSA. At 100 paces south into the respondent's DT soybeans, there is a detection of 9.64 ppb of dicamba and 158 ppb of DCSA. There is also a detection of 6.05 ppb of DCSA in the vegetation at that same point, 100 paces south into the respondent's field.

11. The Pesticide Investigation Inquiry (PII), which the respondent filled out, is attached to the case file. Question 11 on the PII is:

    "Wind speed and direction the wind was from at the time of the application. The weather information was obtained from__ applicator estimate__ field measurement__ weather station".

    The respondent chose "applicator estimate" and indicated his estimate was a 4 mph wind out of the NW. I checked to make certain the respondent understood the wind direction to be the direction the wind was coming from.

    Question 19 on the PII is:
    "Was Fieldwatch/Driftwatch website checked prior to application"?

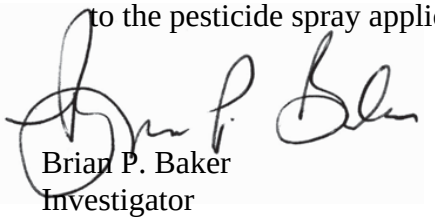
    The respondent answered this question "No".

12. The label/supplemental label for FeXapan, EPA Reg. #352-913 reads in part under the heading:
    Wind Speed and Direction:
    "<3mph-Do not apply DuPont FeXapan herbicide plus VaporGrip Technology"

    And in part under the heading;
    Protection of Sensitive Areas:
    "Before making an application, the applicator must survey the application site for neighboring non-target susceptible crops. The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site".

13. In conclusion, the weather history data in paragraph 8 indicates the wind speed and direction for the date and time of the pesticide spray application made by the respondent in this case was a range of "Calm to WNW at 6-9 mph". The closest weather station at Davies County Airport (est. of 10 miles away) shows all "calm", which is defined as less than one knot or 1.15 mph on the Beaufort

Scale[1]. The two other weather stations used in this case are at greater distances, 35-40 miles away with one showing a calm at the start time for the application and the remainder of the information showing a North or WNW wind from 4.6 to 6.9 mph. The labeling for FeXapan does not allow for a pesticide spray application of the product when the wind is below 3 mph. There was no attempt made by the respondent in this case to check for an inversion due to his "applicator estimate" of a 4 mph NW wind in paragraph 10. The respondent also failed to consult sensitive crop registries prior to the pesticide spray application of FeXapan.



Brian P. Baker
Investigator

Date: November 21, 2017

Disposition: Ross Dinkins was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to check sensitive crop registry before making an application.

Ross Dinkins was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for applying in winds less than three miles per hour and for allowing contact of the herbicide with foliage, green stems, exposed non-woody root crops, and desirable plants including beans. A civil penalty in the amount of $100.00 was assessed for this violation.

Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton
Compliance Officer

Draft Date: January 26, 2018
Final Date: March 22, 2018

[1] American Heritage® Dictionary of the English Language, Fifth Edition. Copyright © 2016 by Houghton Mifflin Harcourt Publishing Company. Published by Houghton Mifflin Harcourt Publishing Company. All rights reserved.

CASE SUMMARY

Case #2017/1055

Complainant: James Wehner
557 W. Dawson Smith Road
Madison, Indiana 47250
812-273-5766
812-701-9711 cell

Respondent: Jerry Ferguson — Private Applicator
7815 N. SR 7
Dupont, Indiana 47231
812-265-2181

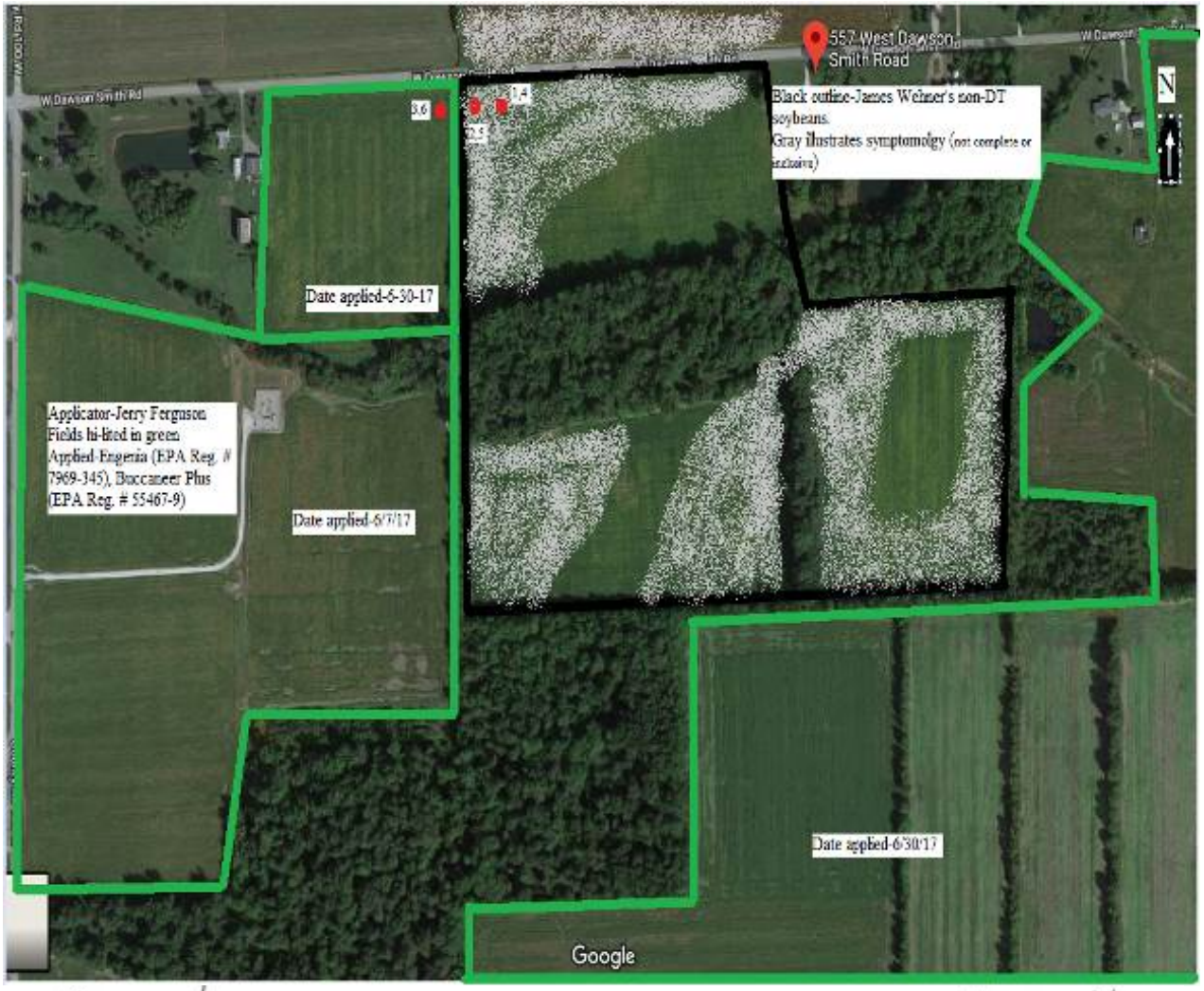
1. On July 19, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On July 21, 2017, I spoke with Mr. Ferguson. Mr. Ferguson stated he made applications to several fields in and around James Wehner's non-soybean fields. Mr. Ferguson stated he applied Engenia (EPA Reg. #7969-345, active ingredient dicamba) and Buccaneer Plus (EPA Reg. #55467-9, active ingredient glyphosate). I emailed Mr. Ferguson a Pesticide Investigation Inquiry form (PII) to complete sign and return. Mr. Ferguson stated he would include information of the other fields he made applications to in the area.

3. On July 24, 2017, I met with Mr. Wehner at his residence. I walked several of Mr. Wehner's non-DT soybean fields. I observed pesticide exposure symptoms on non-DT soybeans in several of Mr. Wehner's fields. See site diagram. I observed soybeans leaves with "ripples". See figures 1-2. Symptoms appeared to be similar among fields.


Figure 1-Rippled leaves


Figure 2-Rippled leaves



Key		map #
2017501827	Vegetation 50 yds from target field	1
2017501828	Vegetation 1 yd from target field	2
2017501829	Vegetation from target field	3
2017501830	soil 50 yds from target field	4
2017501831	soil 1 yd from target field	5
2017501832	soil from target field	4

Site Diagram

4. On July 24, 2017, I collected a vegetation sample to be visually analyzed by Purdue's Plant and Pest Diagnostic Lab (PPDL). In addition, I collected soil and vegetation samples to be analyzed by OISC's Residue Lab.

5. On July 25, 2017, PPDL reported the following:

Diagnosis and Recommendations

Host/Habitat	Soybean (Glycine max)
List of Diagnosis/ID(s)	
Suspected for Herbicide injury; Exposure (Abiotic disorder)	

Final Report

Cupping, puckering, and discoloration of leaf tip on new leaves is indicative of injury from dicamba. Chlorosis on some leaves could be indicative of injury from glyphosate.

Joe Ikley
Weed Science Research Associate
Purdue University
e-mail - jikley@purdue.edu
Office - (765) 494-0891

6. On August 7, 2017, I received Mr. Ferguson's completed PII. The following are answers to questions from the PII.

   A. Application dates & times: June 7, 2017 and June 30, 2017. Times not recorded.
   B. Target field: DT-soybeans
   C. Application rate of Engenia: 12.8 oz. per acre
   D. Adjuvants: Kabak Plus
   E. Nozzles: TII 11003; 50 PSI
   F. Winds: Not recorded on PII
   G. Applicator: Jerry Ferguson
   H. Buffer Zone: no
   I. Ground speed: 5-7mph
   J. Boom height: Not asked on this PII
   K. Checked Registrants website before application: no
   L. Checked Field Watch before application: no
   M. Surveyed site before application: no

   Furthermore, Mr. Ferguson did not report wind data on the PII.

7. Wind data from Weather Underground, www.wunderground.com, from the Bowman Airport station in Louisville, Kentucky, approximately 68 miles away, indicated the wind was out of the south and south, southwest at 6.9-11.5 with gust 18.4 mph. The wind would have been blowing in the direction of Mr. Wehner's fields.

8. On November 30, 2017, OISC's Residue Lab reported the following;

Case # 2017/1055		**Investigator: J. Kelley**			
Sample #	**Sample Description**	**Sample Matrix**	**Amount Found (ppb)**		
			Dicamba	**DCSA**	**5-OH Dicamba**
2017-501827	Vegetation 50 yards from target field	Vegetation	BDL	BDL	BDL
2017-501828	Vegetation 1 yard from target field	Vegetation	BDL	BQL	BDL
2017-501829	Vegetation from target field	Vegetation	*680	22.9	237
2017-501830	Soil 50 yards from target field	Soil	Did not test	Did not test	Did not test
2017-501831	Soil 1 yard from target field	Soil	Did not test	Did not test	Did not test
2017-501832	Soil from target field	Soil	Did not test	Did not test	Did not test

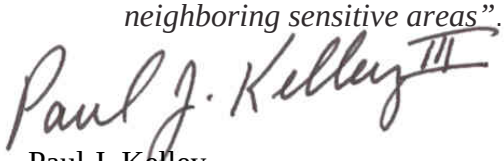
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC

* Exceeded calibration curve and minimum amount reported

Veg LOQ = 2.00 ppb Dicamba Veg LOQ = 0.40 ppb DCSA Veg LOQ = 2.00 ppb 5-OH Dicamba			
Signature		**Date**	11/30/2017

9. Label language for Engenia states in part:

   A. "DO NOT apply when wind is blowing in the direction of neighboring specialty crops."
   B. "DO NOT apply at wind speeds greater than 15 mph".
   C. "DO NOT tank mix any product with Engenia unless: 1. You check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia…"
   D. "*The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available*".
   E. *"Before making an application, the applicator must survey the application site for neighboring sensitive areas".*



Paul J. Kelley
Investigator

Date: January 23, 2018

Disposition: Jerry Ferguson was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the site, checking the registrant's website and checking a sensitive crop registry before application.

Jerry Ferguson was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding applying when winds are blowing towards neighboring specialty crops. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 6, 2018
Final Date: April 17, 2018

CASE SUMMARY

Case #2017/1057

Complainant: Gary Alldredge
1616 Ranes Road
Mt. Vernon, IN 47620
812-760-7415

Respondent: Charles Roby — Private Application
1724 Old Beech Road
New Harmony, IN 47361
812-783-2246

1. On July 11, 2017, the Office of Indiana State Chemist (OISC) received a complaint regarding dicamba drift. The complainant, Gary Alldredge, stated he has several soybean fields that are devastated by dicamba injury.

2. On July 20, 2017, I met with Gary Alldredge and we went to his soybean field located to the southwest of Ranes Road and Ranes Orchard Road, near Mt. Vernon, Indiana. Mr. Alldredge stated Roby Farms had applied a dicamba product to a soybean field located across Ranes Road to the north of his field and he believed it might have affected his Roundup Ready, non-dicamba tolerant (DT) beans. Mr. Alldredge indicated he first noticed the symptoms on July 11, 2017, and contacted OISC. Mr. Alldredge informed me he had not applied any dicamba products this year on any of his farm fields. Mr. Alldredge stated he had only made a post-emergent application of Roundup PowerMax (EPA Reg. #524-549; active ingredient: glyphosate) and Flexstar (EPA Reg. #100-1101; active ingredient: fomesafen) to his soybeans.

3. During my on-site investigation I did the following:
    a) Looked for but did not observe, nor learn of from Mr. Alldredge, any other dicamba applications made in the areas adjacent to his soybean field.
    b) Observed and photographed what appeared to be exposure symptoms (figure #1 below) to a growth regulator type of herbicide such as dicamba. These symptoms were more pronounced on the north side of Mr. Alldredge's field closest to the target field and symptoms became less notable with distance (pattern of drift).
    c) Collected soybean vegetation from Mr. Alldredge's field and a vegetation and soil sample from the target soybean field to the north.
    d) The graph below (illustration #1) shows the field locations in question and areas where samples were obtained. Wind direction is also noted in the illustration and explained later in this report.

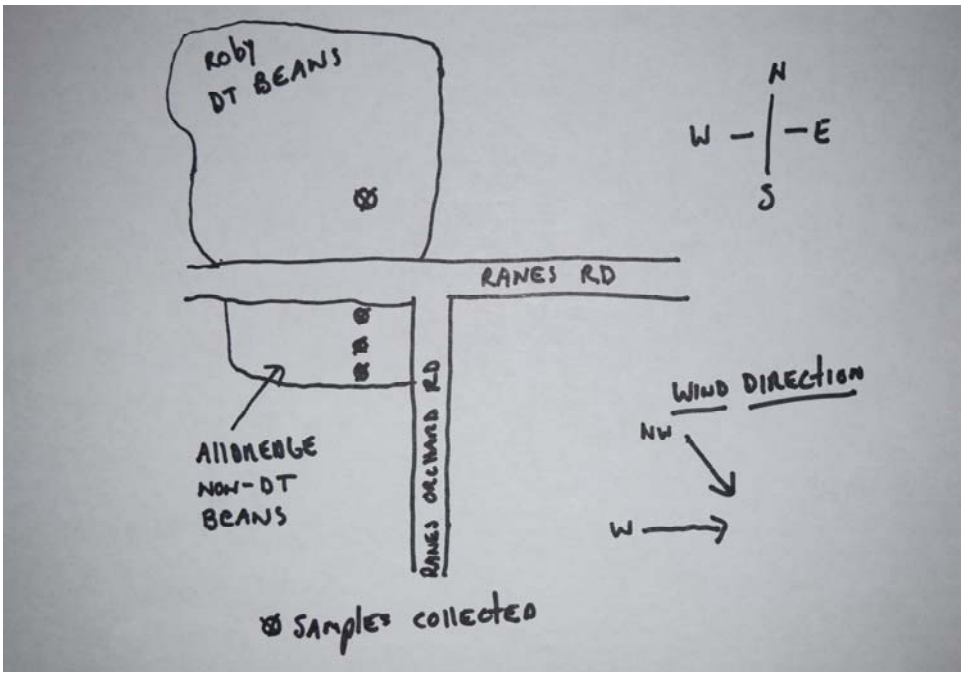


Illustration #1

Figure #1

4. I contacted Charles Roby and spoke to him about the target field in question. Mr. Roby indicated no buffer had been used (other than the gravel road between fields), but stated the winds were light at the time of his application. Mr. Roby informed me he had applied Engenia (EPA Reg. #7969-345; active ingredient: dicamba), Zidua (EPA Reg. #7969-338; active ingredient: pyroxasulfone) and Tomahawk (EPA Reg. #; active ingredient: glyphosate) on June 20, 2017. I informed Mr. Roby he would be receiving a Pesticide Investigation Inquiry (PII) form to be completed and returned. The form was returned on August 3, 2017, and indicated the following:
    a) Application date & time: June 20, 2017, between 10:00am and 2:00pm (CDT).
    b) Target Field: soybean field directly north of Mr. Alldredge's bean field
    c) Application rate of Engenia: 12.8oz per acre
    d) Adjuvants: Iconic
    e) Nozzles: TTI 04

f) Winds: from the northwest (blowing toward Mr. Alldredge's bean field) between 5 miles per hour (mph) and 10 mph (wind information noted from Carmi, Illinois Airport).
g) Applicator: Charles Roby
h) Buffer used: 50 feet (gravel road/ditch banks)
i) Ground speed: 10 mph
j) Boom Height: 18 inches
k) Checked Registrants website before application: yes
l) Checked Field Watch before application: no
m) Survey site before application: yes

5. I searched historical wind data from www.wunderground.com for the closest historical weather stations located near Mt. Vernon, Indiana, for the reported date and time of the application. The results were as follows on June 20, 2017:
   - Carmi Illinois Airport (distance 10 miles): winds were from the west/northwest (blowing toward Mr. Alldredge's bean field during part of the application time frame) between 3.5 mph and 10.4 mph. No gusts were reported.
   - Henderson Kentucky Airport (distance 21 miles): winds were from the west/northwest and variable (blowing toward Mr. Wallis' bean field during part of the application time frame), between 5.8 mph and 11.5 mph. No gusts were reported.
   - Evansville, Indiana Airport (distance 27 miles): winds were from the west/southwest (not blowing toward Mr. Alldredge's bean field) between 4.6 mph and 10.4 mph. No gusts reported.

6. On July 21, 2017, the collected vegetation and soil samples were turned into the Indiana State Chemist Office for analysis. The results were reported back on November 29, 2017, and indicated the following:

Case #	**2017/1057**			**Investigator**		**Scott Farris**	
Sample #	Sample Description	Amount of Analyte (ppb)					
		Matrix	**Dicamba**	**DCSA**	**5-OH Dicamba**	**Fomesafen**	**Pyroxasulfone**
2017-51-0175	Soy bean vegetation 300 feet south of target field	Vegetation	0.76	BDL	BDL	3.37	BDL
2017-51-0176	Soybean vegetation 150 feet south of target field	Vegetation	1.15	BDL	BDL	7.56	BDL
2017-51-0177	Soybean vegetation 50 feet south of target field	Vegetation	2.38	BQL	BDL	46.3	0.37#
2017-51-0178	Soybean vegetation in target field	Vegetation	BDL	1.86	BDL	6.62	BDL
2017-51-0179	Soil from target field	Soil	BDL	77.0	BDL	NOT TESTED	35.3

PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC

result reported as minimum detected due to low recovery of ~40% observed during analysis.

Product applied= Zidua and Engenia
Application=?
Sampling=7/18/17

LOQ(ppb)	Vegetation	0.7	0.3	3	0.3	0.3
LOQ(ppb)	Soil	2	1	2	NA	0.07
Signature				**Date**	11/29/17	

7. The above lab results indicated the detection of dicamba (Engenia) in all three (3) of the vegetation bean samples collected from Mr. Alldredge's field. The Zidua product was also detected from the bean samples collected from Mr. Alldredge's field at 50 feet from the target field.

8. The Engenia Supplemental label stated the following:

   - *"DO NOT apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption."*
   - *"The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available."*

Scott M. Farris — Date: December 21, 2017
Investigator

Disposition: Charles Roby was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the sensitive crop registry website before application.

Charles Roby was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton — Draft Date: February 7, 2018
Compliance Officer — Final Date: March 22, 2018

CASE SUMMARY

Case #2017/1063

Complainant: Andre Youngblood
12055 N. 1330th Street
Martinsville, Illinois 62442
812-249-4250

Respondent: Youngblood Farms
Brad Youngblood — Private Applicator
7614 N 300 E
Brazil, Indiana 47834
812-986-3104

1. On July 21, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans. Although he lives in Illinois, the bean field he farms is in Clay County, Indiana.

2. On July 24, 2017, I met with the complainant to conduct an on-site physical investigation of the alleged off-target pesticide movement incident reported to OISC. The complainant advised me that he believed his non-DT (Roundup Ready) beans had been damaged by an application made to nearby DT soybean fields.

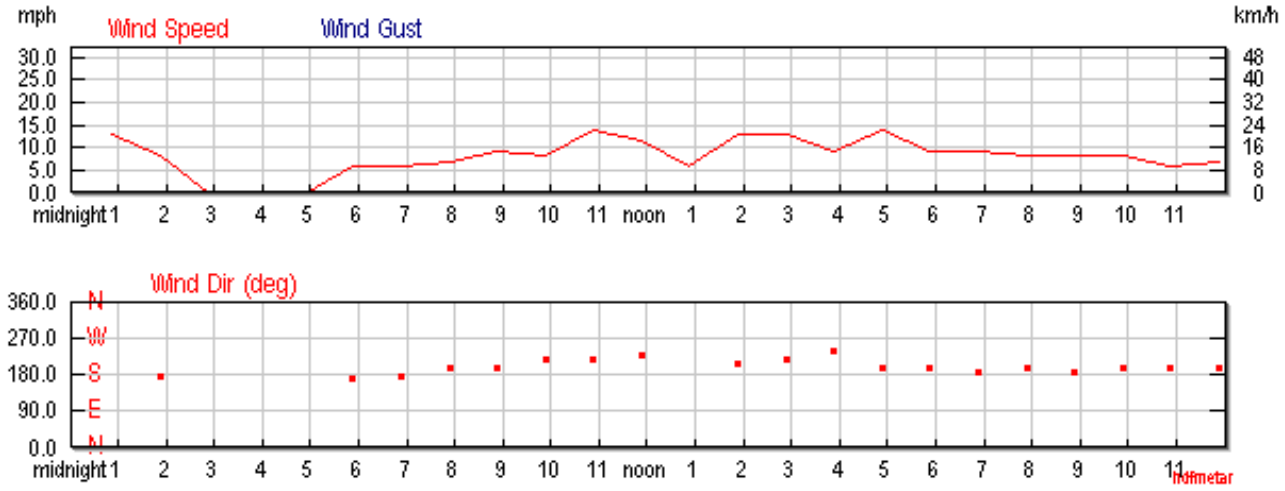
3. During my on-site investigation I did the following:
   a) Looked for and did not observe another potential dicamba application made in the area adjacent to the impacted site.
   b) Observed and photographed what I believed to be fairly uniform dicamba exposure symptoms (figure 1) throughout the complainant's non-target, non-DT soybean field (figure 2) located to the west, south and east of the target fields. The target fields and the complainant's non-target field were immediately adjacent to one another east and west and south. (figures 3 & 4).
   c) Collected soybean plant samples from impacted areas of the complainant's non-target soybean field for visual analysis by the Purdue Plant and Pest Diagnostic Lab (PPPDL).
   d) Collected samples for chemical analysis by the OISC Pesticide Residue Laboratory from the following areas:
      i) Impacted soybean plants from complainant's non-target soybean field;
      ii) Normal looking soybean plants from the target soybean field
   e) Made a diagram/map of the investigation site, depicting locations of relevant fields, sample collection, roads, structures, and other landmarks (figures 5 and 6).

4. On July 30, 2017, I collected written records from the applicator. The written records and statements addressed the below items as follows:
   a) Application date & time: June 12, 2017; from 11:00am-12:30pm
   b) Target field: soybean field to the north, west and east of complainant's soybean field;

c) Pesticides: Flexstar (fomesafen) EPA Reg. #100-1101and Durango (glyphosate) EPA Reg. #524-549 to the borders, Engenia (dicamba) EPA Reg. #7969-345 & Durango (glyphosate) EPA Reg. #524-549 to balance of the field;
d) Application rate: Flexstar 8 oz/acre, Durango 24 oz/acre, Engenia 12.8 oz/acre
e) Adjuvants: NIS;
f) Nozzles: TTI 11004
g) Boom height: 24 Inches
h) Ground speed: 8-10 mph
i) Winds: 5.4 mph from the south southwest;
j) Applicator: Brad Youngblood;
k) Certified supervisor: not applicable;
l) Left a 110' untreated buffer next to non-target site: Yes 180 feet around entire field
m) Checked registrant's web site before application: No
n) Checked Field Watch before application: No
o) Surveyed application site before application: No

5. I searched wind data from www.weatherunderground.com for zip code 47834 in Brazil, Indiana for the reported dates and times of the application. The results of that search indicated that wind speeds and directions during the application were as follows:

June 12, 2017
As recorded at Terre Haute 15-5 mph out of the southwest



Terre Haute Wind Data 13 Miles West

6. The wind speed was at 15mph at the beginning of the application and then 5mph toward the end of the application and would have been blowing in the direction of the non DT beans when being made to the field west of the non DT beans.

7. The report from the PPPDL states, "*Cupping and puckering on new trifoliates is indicative of injury from dicamba.*"

8. The report from the OISC Pesticide Residue Laboratory states:

Case #	2017/1063			Investigator		K. Neal	
Sample #	Sample Description	Amount of Analyte (ppb)					
		Matrix	Dicamba	5-OH Dicamba	DCSA	Glyphosate	AMPA
2017-220653	A. Youngblood beans RR	Vegetation	BDL	BDL	BQL	11085	292
2017-220654	B. Youngblood Dicamba beans F1	Vegetation	BDL	BDL	241	594	BDL
2017-220655	B. Youngblood Dicamba beans F2	Vegetation	BDL	BDL	117	781	BDL
2017-220656	B. Youngblood Dicamba beans F3	Vegetation	BDL	BDL	74.3	6246	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC							
LOQ (ppb)	Vegetation		4	1	2	25	25
Signature				**Date**	1/31/2018		

9. The PPPDL report and the wind direction data suggest that dicamba from the application to the target field moved off-target to the complainant's non-target soybean field. The detection of glyphosate in the non-target Roundup Ready soybeans may very well be indicative of an application of a glyphosate product applied by the complainant. This makes it difficult to determine if the dicamba moved off target from direct particle drift, application during a temperature inversion, or volatility at some point after the application. Regardless, the wind direction data supports that the Engenia was applied when the wind was blowing toward the sensitive non-DT soybeans.

10. The label for Engenia states, "*DO NOT apply when wind is blowing in the direction of neighboring specialty crops."* And, *DO NOT tank mix any product with Engenia unless: You check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia."* And, *"Before making an application the applicator must survey the application site for neighboring sensitive areas. The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available."*


Figure One


Figure Two


Figure Three


Figure Four

Figure Five

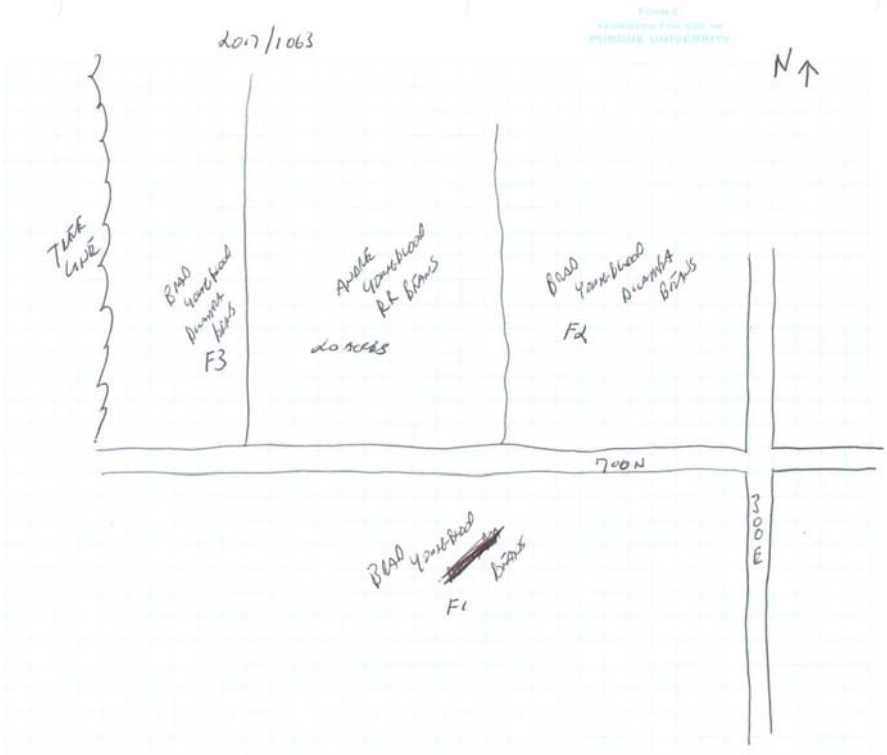


Figure Six

Kevin W. Neal
Investigator

Date: February 1, 2018

Disposition: Brad Youngblood was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the application site; checking the registrant's website and checking sensitive crop registry before application.

Brad Youngblood was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 19, 2018
Final Date: May 3, 2018

CASE SUMMARY

Case #2017/1066

Complainant: John Welch
7114 Bradford
Bennington, Indiana 47011
812-571-3343

Respondent: Jerry Ferguson — Private Applicator
7815 N. SR 7
Dupont, Indiana 47231
812-265-2181

1. On July 21, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On July 21, 2017, I spoke with Mr. Ferguson. Mr. Ferguson stated he made applications to several fields in the area. Mr. Ferguson stated he applied Engenia (EPA Reg. #7969-345, active ingredient dicamba) and Buccaneer Plus (EPA Reg. #5467-9, active ingredient glyphosate). I emailed Mr. Ferguson a Pesticide Investigation Inquiry form (PII) to complete sign and return. Mr. Ferguson stated he would include information of the other fields he made applications to in the area.

3. On July 24, 2017, I walked several of Mr. Welch's non-DT soybean fields. I observed soybeans leaves with "ripples". See figures 1-2 and see site diagram. Symptoms appeared to be more prominent closer to West Dawson Smith Road decreasing moving north into Mr. Welch's Liberty soybeans.


Figure 1-Crinkled leaves


Figure 2-Edges curled

2017501833	Vegetation 50 yds from target field	1
2017501834	Vegetation 1 yd from target field	2
2017501835	Vegetation from target field	3
2017501836	soil 50 yds from target field	4
2017501837	soil 1 yd from target field	5
2017501838	soil from target field	4

Site diagram

4. On July 24, 2017, I collected a vegetation sample to be visually analyzed by Purdue's Plant and Pest Diagnostic Lab (PPDL). In addition, I collected soil and vegetation samples to be analyzed by OISC's Residue Lab.

5. On July 25, 2017, PPDL reported the following:

Diagnosis and Recommendations

Host/Habitat	Soybean (Glycine max)
List of Diagnosis/ID(s)	
Suspected for Herbicide injury; Exposure (Abiotic disorder)	

Final Report

Cupping, puckering, and discoloration of leaf tip on new leaves is indicative of injury from dicamba.

Joe Ikley
Weed Science Research Associate
Purdue University
e-mail - jikley@purdue.edu
Office - (765) 494-0891

6. On August 7, 2017, I received Mr. Ferguson's completed PII. The following are answers to questions from the PII.

   A. Application dates & times: June 7, 2017. Times not recorded.
   B. Target field: DT-soybeans
   C. Application rate of Engenia: 12.8 oz. per acre
   D. Adjuvants: Kabak Plus
   E. Nozzles: TII 11003; 50 PSI
   F. Winds: Not recorded on PII
   G. Applicator: Jerry Ferguson
   H. Buffer Zone: no
   I. Ground speed: 5-7mph
   J. Boom height: Not asked on this PII
   K. Checked Registrants website before application: no
   L. Checked Field Watch before application: no
   M. Surveyed site before application: no

   Furthermore, Mr. Ferguson did not report wind data on the PII.

7. Wind data from Weather Underground, www.wunderground.com, from the Bowman Airport station in Louisville, Kentucky, approximately 68 miles away, indicated the wind was out of the south and south, southwest at 6.9-11.5 with gust 18.4 mph. The wind would have been blowing in the direction of Mr. Welch's fields.

8. On December 21, 2017, OISC's Residue Lab reported the following:

Case # 2017/1066		**Investigator: J. Kelley**			
Sample #	**Sample Description**	**Sample Matrix**	**Amount Found (ppb)**		
			Dicamba	**DCSA**	**5-OH Dicamba**
2017-50-1833	Vegetation 50 yards from target field	Vegetation	BDL	BDL	BDL
2017-50-1834	Vegetation 1 yard from target field	Vegetation	BDL	BQL	BDL
2017-50-1835	Vegetation from target field	Vegetation	12.1	BQL	BDL
2017-50-1836	Soil 50 yards from target field	Soil	2.50	BDL	BDL
2017-50-1837	Soil 1 yard from target field	Soil	8.95	150	BDL
2017-50-1838	Soil from target field	Soil	BDL	BDL	BDL

PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC

Product applied=Engenia
Application date=6/30/17
Sampling date=7/24/17

LOQ (ppb)	Vegetation	2	0.4	2
LOQ (ppb)	Soil	2	1	2

Signature		**Date**	12/21/2017

9. Label language for Engenia states in part:

A. "NO NOT apply when wind is blowing in the direction of neighboring specialty crops."
B. "DO NOT apply at wind speeds greater than 15 mph".
C. "DO NOT tank mix any product with Engenia unless: 1. You check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia…"
D. "The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available".
E. "*Before making an application, the applicator must survey the application site for neighboring sensitive areas*".

Paul J. Kelley III

Paul J. Kelley Date: January 23, 2017
Investigator

Disposition: Jerry Ferguson was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the application site; checking the registrant's website; checking the local sensitive crop registry before application.

Jerry Ferguson was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when winds are blowing towards a sensitive crop and in winds over fifteen (15) miles per hour. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton Draft Date: March 6, 2018
Compliance Officer Final Date: April 17, 2018

CASE SUMMARY

Case #2017/1075

Complainant: Victor Sell
4290 N. Royal Center Pike
Royal Center, Indiana 46978
574-735-0216

Respondent: Tony Herd — Private Applicator
5105 N 200 W
Logansport, Indiana 46947
574-889-3955

1. On July 24, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba pesticide agricultural drift to his beans.

2. On July 25, 2017, I met with the complainant at his home. I identified myself verbally and with OISC credentials. I issued a Notice of Inspection and explained the role of OISC in drift investigations.

3. The complainant told me he checked his fields on a daily basis and on Wednesday July 19, 2017, he noticed his soybeans fields just north of his house had an "odd" look to them. The complainant told me upon closer examination, he could see that the top leaves on most of the plants in the field were cupped and wrinkled (puckered). When the complainant did some checking, he found that the neighbor farmer who planted soybeans across the road from those fields had used a new "dicamba" product. The complainant suspects that dicamba product drifted or otherwise moved off target and onto his soybeans causing the aforementioned injury symptoms.


Fig.1


Fig. 2


Fig. 3


Fig. 4


Fig. 5

- Fig. 1-3 are the complainant's soybeans.
- Fig. 4 is the respondent's field of dicamba tolerant soybeans.
- Fig. 5 is the east end of the complainant's field showing no injury symptoms.

4. The complainant told me the last time his field had a pesticide spray application was on **June 21, 2017.** The North Central Co-Op of Logansport made the pesticide spray application. I was able to collect pesticide spray application records from North Central Co-op. They indicate there was **no dicamba** product used in that sprayer between November 16, 2016 and June 27, 2017. The pesticide product used in the June 21, 2017 pesticide spray application of the complainant's soybeans was:

- *Roundup Powermax, EPA Reg. #524-549, active ingredient=glyphosate*

5. I collected swab and vegetation samples and one whole plant sample from the complainant's field. I also collected swabs, vegetation and soil samples from the suspect field across the road. The complainant's samples were taken in the least and most affected areas in the field. The reference point for laser readings in this case is a Logansport Municipal Utilities pole # 04D025. The least affected point of sampling is 161 yards east of that pole; the most affected is 30 yards east of the pole. The samples taken in the suspect field are 8 yards and 61 yards SW of the pole.

6. I was able to make contact with the respondent in this case. I left a Pesticide Investigation Inquiry (PII) for the respondent to fill out. The respondent told me he made a pesticide spray application to the field across the road from the complainant's field on **July 3, 2017**. The time of day was **1:30pm to 2:30pm**... The following pesticide products were used in that application:

   - *Engenia, EPA Reg. #7969-345, active ingredient=48.38% dicamba*
   - *Roundup Powermax, EPA Reg. #524-549, active ingredient=glyphosate*

7. The samples in this case were tagged and transported to the OISC Residue Laboratory for analysis. The plant sample was taken to the Purdue Plant and Pest Diagnostic Laboratory (PPDL) for analysis.

8. I completed a field sketch with sampling information. Wind information was added at a later date. The inserted field sketch which follows is an accurate representation of the original with more information added (key, weather info). The inserted wind information was extracted from charts on weatherunderground.com. The three weather stations used were Logansport, Knox, and Warsaw Indiana. The respondent in this case on the PII listed his wind direction and wind speed as from the WNW at 5-10 mph, which would be blowing in the direction of the complainant's beans.

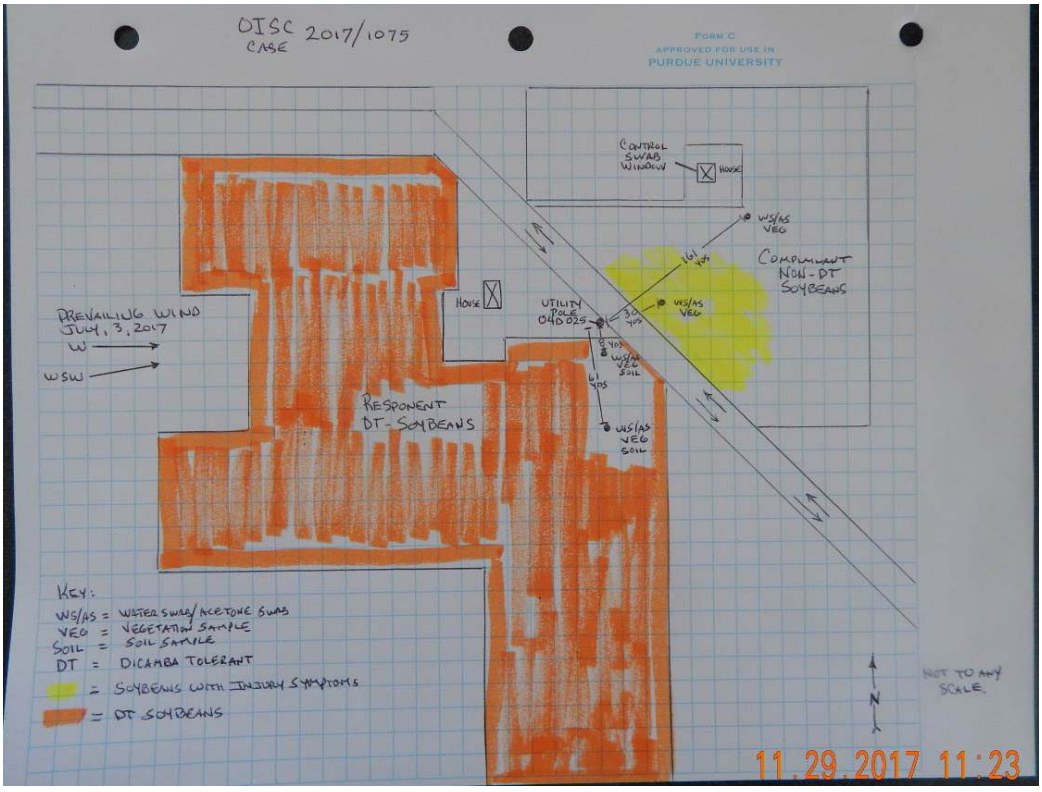


Fig. 6

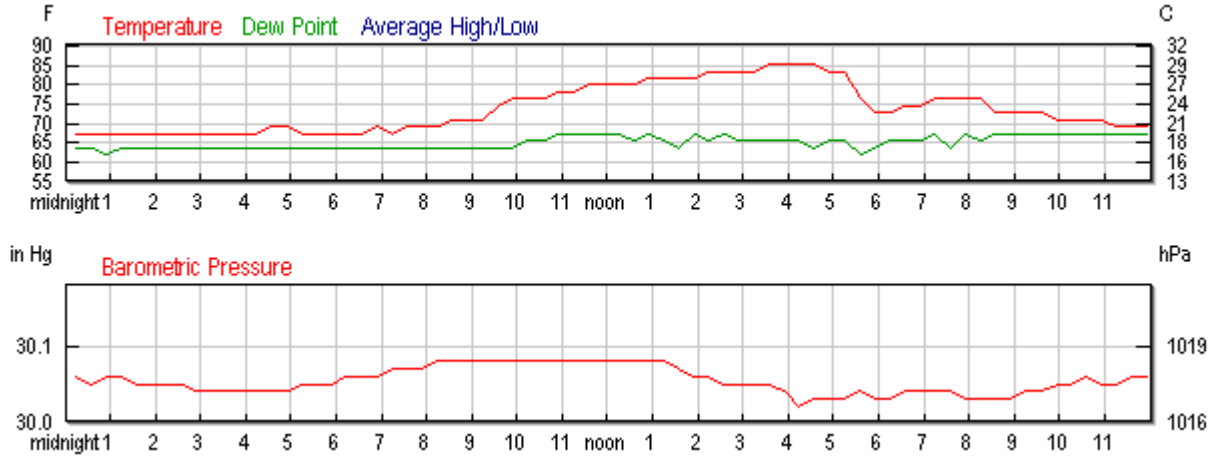
9. On July 26, 2017, I received a completed electronic copy of the PII I left with the respondent. The information that follows was taken from the PII. The PII will be placed in the case file.

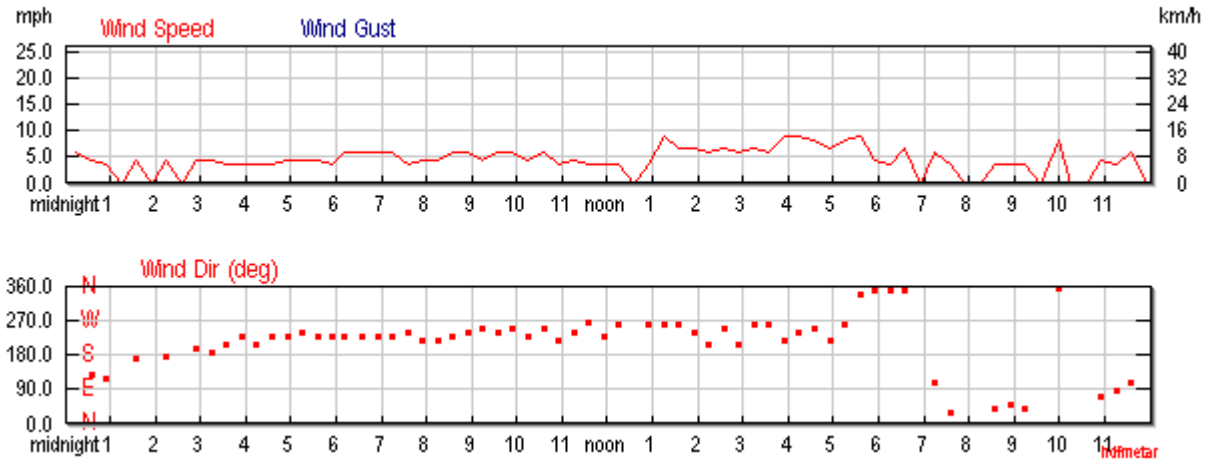
   a) **Application Date and Time**: July 3, 2017 from 1:30pm to 2:30pm
   b) **Target field location:** Powlen Farm Slaughter
   c) **Application rate of product(s):** Engenia at 12.8 oz/acre, Roundup at 28 oz/acre
   d) **Adjuvants used:** AG 16098 at 2qt/100 gal.
   e) **Nozzles used:** Flat fan nozzles on 10" centers.
   f) Wind: From the WNW at 5-10 mph when application began. **Listed as both Applicator estimate and a weather station called DTN**
   g) **Applicator:** Tony Herd
   h) **Buffer used:** 40' estimate
   i) **Ground speed:** 13-14 mph
   j) **Boom Height:** Did not exceed 24"
   k) **Checked Registrants website before application:** No, not aware of websites
   l) **Checked Fieldwatch before application:** No
   m) **Surveyed site before application:** Yes

10. The weather information charts and graphs, that follow, are from weatherunderground.com. weather history for Royal Center, Indiana which defaults to Logansport Municipal Airport approximately 15 miles SE; Plymouth, Indiana which defaults to Knox, Indiana approximately 30 miles NE and Warsaw Indiana which defaults to Warsaw Indiana Municipal Airport, approximately 45 miles NE of Royal Center Indiana.

The chart and graph that follow are the weather history for Logansport on **July 3, 2017**. Logansport is approximately 15 miles SE of Royal Center Indiana.

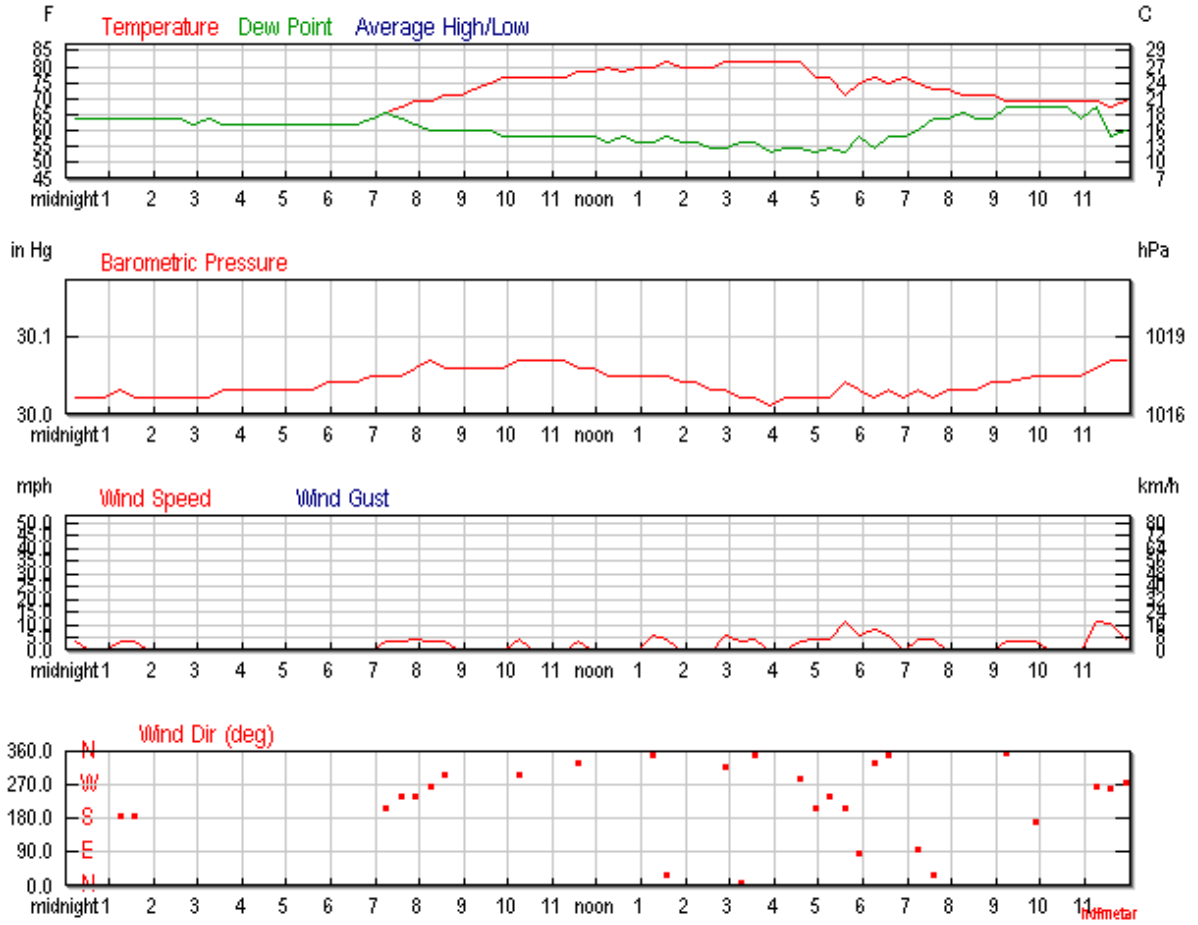
DATE	TIME	WIND DIRECTION	WIND SPEED
7-3-17	1:35pm	W	6.9 mph
7-3-17	1:55pm	WSW	6.9 mph
7-3-17	2:15pm	SSW	5.8 mph
7-3-17	2:35pm	WSW	6.9 mph





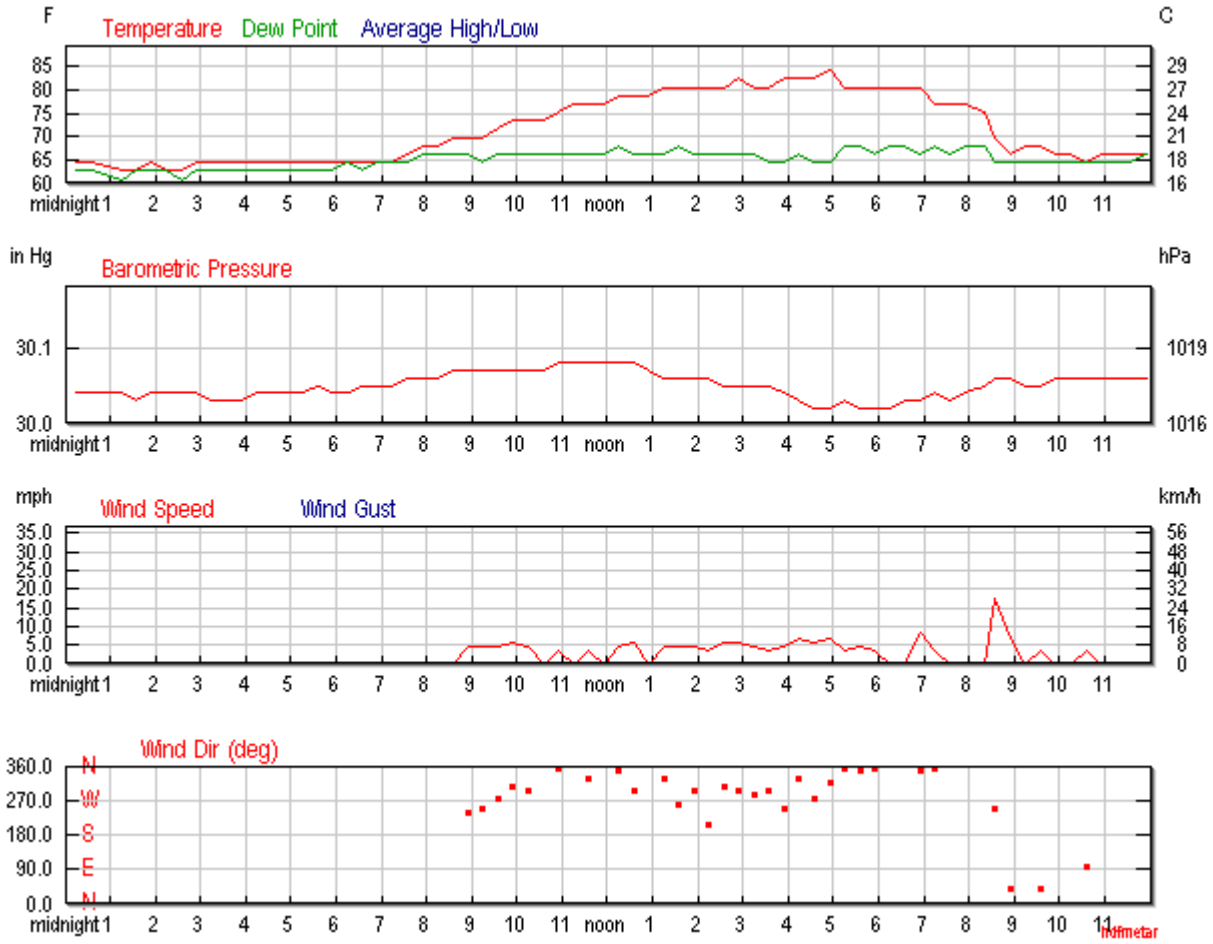
The chart and graph that follow are the weather history for Plymouth Indiana on **July 3, 2017**. Plymouth Indiana is approximately 30 miles NE of Royal Center Indiana.

DATE	TIME	WIND DIRECTION	WIND SPEED
7-3-17	1:35pm	NNE	4.6 mph
7-3-17	1:55pm	Calm	Calm
7-3-17	2:15pm	Calm	Calm
7-3-17	2:35pm	Calm	Calm



The chart and graph which follow are the weather history for Warsaw Indiana on **July 3, 2017**. Warsaw is located approximately 45 mile NE of Royal Center Indiana.

DATE	TIME	WIND DIRECTION	WIND SPEED
7-3-17	1:35pm	W	4.6 mph
7-3-17	1:55pm	WNW	4.6 mph
7-3-17	2:15pm	SSW	3.5 mph
7-3-17	2:35pm	NW	5.8 mph



11. On July 26, 2017, I received the final report from PPDL. The report reads in part:

    "*Cupping and puckering on new trifoliates is indicative of injury from dicamba*"

    Joe Ikley
    Weed Science Research Associate
    Purdue University

12. On December 1, 2017, I received an e-mail with the final report from the OISC Residue Laboratory for the samples submitted and tested in this case. The chart that follows is a copy and paste of that e-mailed report. The complainant's soybeans test results are in bold. The sample taken in the east end of the complainants field shows only glyphosate in it. The complainant did have glyphosate applied to his field. The sample taken from the west end, closest to the respondents DT soybeans was positive for both dicamba and glyphosate (see fig. 6)

OFFICE OF INDIANA STATE CHEMIST

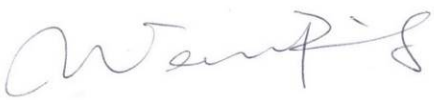
Pesticide Residue Laboratory

Lab Report

Case # 2017/1075			**Investigator: B. Baker**				
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**				
			Dicamba	DCSA	5-OH Dicamba	Glyphosate	AMPA
2017-323825	Trip blank swab	Swab	Not tested	Not tested	Not tested	Not tested	Not tested
2017-323826	Control sample swab	Swab	Not tested	Not tested	Not tested	Not tested	Not tested
2017-323827	Water swab of soybeans at east end of field	Swab	Not tested	Not tested	Not tested	Not tested	Not tested
2017-323828	Acetone swab of soybeans at east end of field	Swab	Not tested	Not tested	Not tested	Not tested	Not tested
2017-323829	Water swab of soybeans at west end of field	Swab	Not tested	Not tested	Not tested	Not tested	Not tested
2017-323830	Acetone swab of soybeans at west end of field	Swab	Not tested	Not tested	Not tested	Not tested	Not tested
2017-323831	Water swab of soybeans in suspect field buffer	Swab	Not tested	Not tested	Not tested	Not tested	Not tested
2017-323832	Acetone swab of soybeans in suspect field buffer	Swab	Not tested	Not tested	Not tested	Not tested	Not tested
2017-323833	Water swab of soybeans in suspect field app area	Swab	Not tested	Not tested	Not tested	Not tested	Not tested
2017-323834	Acetone swab of soybeans in suspect field app area	Swab	Not tested	Not tested	Not tested	Not tested	Not tested
2017-323835	**Veg sample from east end of soybean field**	Vegetation	BDL	BDL	BDL	68.9	BDL
2017-323836	**Veg sample from west end of complainant's soybean field**	Vegetation	3.92	BDL	BDL	101	BDL
2017-323837	Veg sample from suspect field buffer area	Vegetation	BDL	5.23	BDL	633	BDL
2017-323838	Veg sample from suspect field app area	Vegetation	BDL	19.8	BDL	2052	148
2017-323839	Soil sample from suspect field buffer	Soil	Not tested	Not tested	Not tested	Not tested	Not tested
2017-323840	Soil sample from suspect field app area	Soil	Not tested	Not tested	Not tested	Not tested	Not tested

PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC

LOQ (ppb)	Vegetation	2	0.4	20	25	125

Signature		**Date**	12/1/17

13. The label/supplemental label for Engenia reads in part under the heading:

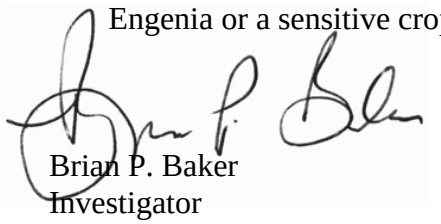
"DO NOT allow herbicide solution to mist, drip, drift, or splash onto desirable vegetation because severe injury or destruction to desirable broadleaf plants could result."

TANK MIX INSTRUCTIONS
"DO NOT tank mix any product with Engenia unless";

a) You check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia; and
b) The intended product tank mix with Engenia is identified on that list of tested and approved products; and
c) The intended product to be tank-mixed with Engenia is not prohibited on this label.

"The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available."

14. In conclusion, the respondent in this case made a pesticide spray application of Engenia, EPA Reg. #7969-345 to the dicamba tolerant (DT) soybeans on his property, which is directly west across the county road from the complainant's property. The complainant had non-DT soybeans in his field. The prevailing wind for the date of the respondent's pesticide spray application was from the west, which was blowing toward the complainant's non-DT soybeans. The injury symptoms on the complainant's non-DT soybeans dissipated as you progress from west to east in his field. The sample taken in the area to the east where the complainant's soybeans had no signs of injury showed no dicamba in the sample. The sample taken on the west edge of the complainant's field where the injury symptoms were present had a positive result for dicamba. When the wind direction for the date of the respondents pesticide spray application (paragraph 9&10) are taken together with the OISC Residue Laboratory results (paragraph 12) and the PPDL results (paragraph 11), it appears the pesticide spray application made by the respondent in this case did drift onto the complainant's non-DT soybeans causing the injury seen in the photo's in figs 1-3 of this report in violation of the label/supplemental label language for Engenia. The respondent also indicated in the PII that he did not check the website prior to making the tank mix with Engenia or a sensitive crop registry.



Brian P. Baker — Date: December 14, 2017
Investigator

Disposition: Tony Herd was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the registrant's website and failure to check sensitive crop registry before application.

Tony Herd was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton — Draft Date: February 2, 2018
Compliance Officer — Final Date: March 22, 2018

CASE SUMMARY

Case #2017/1079

Complainant: Eric Welch
10232 S. SR 129
Cross Plains, Indiana 47017
812-599-2520

Respondent: Jerry Ferguson — Private Applicator
7815 N. SR 7
Dupont, Indiana 47231
812-265-2181

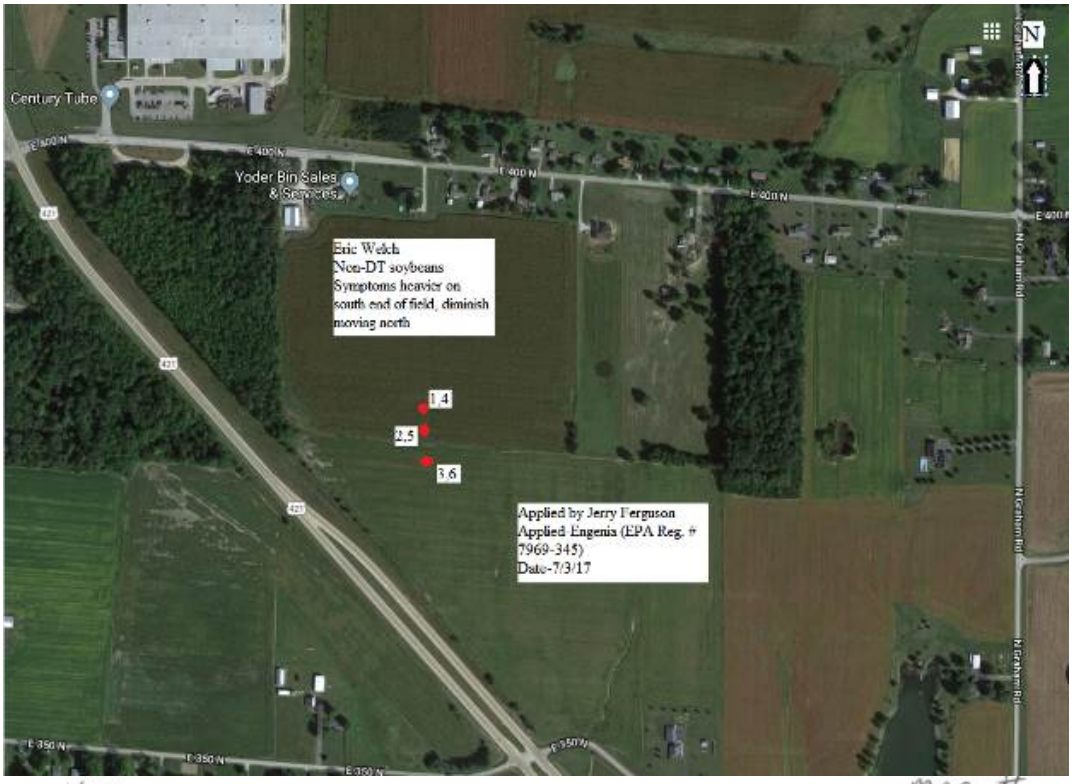
1. On July 24, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On July 21, 2017, I spoke with Mr. Ferguson (regarding a previous complaint). Mr. Ferguson stated he made applications to several fields in the area. Mr. Ferguson stated he applied Engenia (EPA Reg. #7969-345, active ingredient dicamba) and Buccaneer Plus (EPA Reg. #55467-9, active ingredient glyphosate). I emailed Mr. Ferguson a Pesticide Investigation Inquiry form (PII) to complete sign and return. Mr. Ferguson stated he would include information of the other fields he made applications to in the area.

3. On July 31, 2017, I spoke with Eric Welch. Mr. Welch stated his field has similar symptoms as his brother's fields. See case summary 20171066. See figures 1-2 and site diagram.


Figure 1- Crinkled leaves


Figure 2-Smaller plants on south end



Key — Map #

2017501844	Soil 50 yds from target field	1
2017501845	Soil 1 yd from target field	2
2017501846	Soil from target field	3
2017501847	vegetation 50 yds from target field	4
2017501848	Vegetation 1 yd from target field	5
2017501849	Vegetation from target field	6

Site diagram

4. On July 31, 2017, I collected a vegetation sample to be visually analyzed by Purdue's Plant and Pest Diagnostic Lab (PPDL). In addition, I collected soil and vegetation samples to be analyzed by OISC's Residue Lab.

5. On August 1, 2017, PPDL reported the following:

Diagnosis and Recommendations

Host/Habitat	Soybean (Glycine max)
List of Diagnosis/ID(s)	
Suspected for Herbicide injury; Exposure (Abiotic disorder)	

Final Report

8-1-17
Cupping/puckering of leaves, parallel venation of leaves, and discolored leaf tips are indicative of injury from dicamba.

Joe Ikley
Extension Weed Specialist
Purdue University
915 West State Street
W. Lafayette, IN 47907
e-mail - jikley@purdue.edu
Cell - (410) 596-9091
Office - (765) 496-2121

6. On August 7, 2017, I received Mr. Ferguson's completed PII. The following are answers to questions from the PII.

   A. Application dates & times: July 3, 2017. Times not recorded.
   B. Target field: DT-soybeans
   C. Application rate of Engenia: 12.8 oz. per acre
   D. Adjuvants: Kabak Plus
   E. Nozzles: TII 11003; 50 PSI
   F. Winds: Not recorded on PII
   G. Applicator: Jerry Ferguson
   H. Buffer Zone: no
   I. Ground speed: 5-7mph
   J. Boom height: Not asked on this PII
   K. Checked Registrants website before application: no
   L. Checked Field Watch before application: no
   M. Surveyed site before application: no

   Furthermore, Mr. Ferguson did not report wind data on the PII.

7. Wind data from Weather Underground, www.wunderground.com, from the Bowman Airport station in Louisville, Kentucky, approximately 68 miles away, indicated the wind was variable 3.5mph-6.9mph with readings out of the east, northeast and east, southeast (blowing in the direction of the Welch beans).

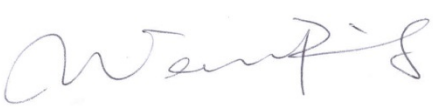
8. On November 30, 2017, OISC's Residue Lab reported the following:

Case # 2017/1079		**Investigator: J. Kelley**			
Sample #	**Sample Description**	**Sample Matrix**	**Amount Found (ppb)**		
			Dicamba	**DCSA**	**5-OH Dicamba**
2017-501844	Soil 50 yards from target field	Soil	Did not test	Did not test	Did not test
2017-501845	Soil 1 yard from target field	Soil	Did not test	Did not test	Did not test
2017-501846	Soil from target field	Soil	Did not test	Did not test	Did not test
2017-501847	Vegetation 50 yard from target field	Vegetation	BDL	BQL	BDL
2017-501848	Vegetation 1 yard from target field	Vegetation	BQL	0.652	BDL
2017-501849	Vegetation from target field	Vegetation	*1808	28.4	43.2

PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC

*minimum amount reported due to concentration exceeded calibration curve range.

Veg LOQ = 2.00 ppb Dicamba
Veg LOQ = 0.40 ppb DCSA
Veg LOQ = 2.00 ppb 5-OH Dicamba

Signature		**Date**	11/30/2017

9. Label language for Engenia states in part:

   A. "DO NOT apply when wind is blowing in the direction of neighboring specialty crops."
   B. "DO NOT tank mix any product with Engenia unless: 1. You check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia…"
   C. "*The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available*".
   D. *"Before making an application, the applicator must survey the application site for neighboring sensitive areas".*

Paul J. Kelley III

Paul J. Kelley — Date: January 23, 2017
Investigator

Disposition: Jerry Ferguson was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the application site, checking registrant's website and local sensitive crop registry before application.

Jerry Ferguson was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when wind is blowing in the direction of a sensitive crop. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton — Draft Date: March 7, 2018
Compliance Officer — Final Date: April 17, 2018

CASE SUMMARY

Case #2017/1084

Complainant: Jeffrey Smith
1123 N. CR400 E.
Portland, IN 47371
260-726-5532

Respondent: Jeff Knittle — Not Licensed
3749 E. CR300 N.
Portland, IN 47371
765-726-3465

1. On July 26, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On July 27, 2017, I spoke with Mr. Smith who reported he noticed cupped leaves on his non dicamba-tolerant (DT) soybeans two days prior. He suspected his field may have been adversely affected by a dicamba-containing tank mix applied to an adjacent field. The field in question was reportedly being farmed by Jeff Knittle.

3. On July 31, 2017, I met Mr. Smith at the field at the southeast corner of CR300N and CR400E in Jay County. Leaf cupping was visible on soybean plants at the corner and throughout much of the west side of the field as well as in lower ground as I went south. The field of Roundup Ready seed beans was reportedly sprayed on July 12 and 13, with a tank mix containing Roundup (glyphosate), Select (clethodim) and Vamos (fomesafen).

4. During my on-site investigation I did the following:

   a) Looked for, but did not find, any other potential sources of dicamba adjacent to the Smith soybean field. The Smith field was across CR400E to the east of the target field. Two residential properties on the west side of the road separated the fields to the north; toward the south end of the target field, approximately 30 feet separated the fields.
   b) Observed and photographed mostly uniform, widespread cupping and puckering of leaves on non-DT soybean plants across the Smith field with more severe symptoms in lower ground. These symptoms are commonly associated with exposure to a growth-regulator type herbicide such as dicamba. Soybeans in the target field exhibited no symptoms.
   c) Collected samples of affected soybean plants from the Smith field for assessment by the Plant & Pest Diagnostic Lab (PPDL) at Purdue.
   d) Collected plant samples from soybeans exhibiting symptoms approximately 20 feet into the Smith field across the road from the target field (south end). Collected plant samples from dead weeds approximately 20 feet into the target field (south end). Those samples were submitted to the OISC Residue Lab for analysis.

Fig.1 Aerial photo of fields


Fig.2 Cupped beans near intersection


Fig.3 Soybeans in Smith field


Fig.4 Cupped beans, road and target field

5. On July 31, 2017, I spoke with Jeff Knittle and informed him of the complaint. He confirmed the target field was sprayed on a calm Sunday evening in early July. Mr. Knittle stated he would provide any application information needed. He later returned a completed Pesticide Investigation Inquiry which indicated the following:

   a) Application date & time: July 2, 2017; from 6pm-730pm
   b) Target field: soybean field east of Knittle home, west of Smith soybean field
   c) Pesticides: Roundup PowerMax (glyphosate) EPA Reg. #524-549
      Xtendimax (dicamba) EPA Reg. #524-617
   d) Application rate of Xtendimax: 22 oz. per acre
   e) Adjuvants: Cornbelt Vaporgard and DRA
   f) Nozzles: TTI11004VP
   g) Ground speed: 7mph
   h) Winds: 0-3mph DTN Weather (no direction given)
   i) Applicator: Jeff Knittle
   j) Buffer zone: yes, 50' – 75' +
   k) Checked registrant's web site before application: yes
   l) Checked Driftwatch/Fieldwatch before application: no
   m) Surveyed application site before application: yes

6. I checked recorded wind data at www.wunderground.com for the closest official weather stations to the application site for July 2, 2017, and found the following:

Delaware County Airport (30 miles to the WSW)	6:53pm	6.9mph from west
Fort Wayne International (37 miles to the NNW)	6:54pm	5.8mph from the west-northwest
Marion Municipal Airport (40 miles to the west)	6:56pm	5.8mph from the west
Lima-Allen County Airport (48 miles to the ENE)	6:53pm	8.1mph from the west-northwest

7. The PPDL report stated, *"Cupping/puckering of leaves, parallel venation on leaves, and discolored leaf tip are indicative of dicamba injury."*

8. The OISC Residue Lab analyzed the plant samples for dicamba and its breakdown products, DCSA and 5-OH dicamba, as well as glyphosate and its breakdown product, AMPA, and reported the following:

Case #	**2017/1084**			**Investigator**		**A. Roth**	
Sample #	Sample Description	Amount of Analyte (ppb)					
		Matrix	**Dicamba**	**DCSA**	**5-OH Dicamba**	**Glyphosate**	**AMPA**
2017-474095	Non target beans - Smith	Vegetation	5.69	BQL	BDL	5710	349
2017-474096	Target weeds - Knittle	Vegetation	21100*	273	1430*	33600	883
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC *Concentration exceeded calibration curve and minimum amount reported Application=7/2/17 Sampling=7/31/17 Product applied=Xtendimax+ Roundup							
LOQ (ppb)		Vegetation	2	0.4	4	25	125
Signature				**Date**		12/4/2017	

9. Dicamba, as well as glyphosate and AMPA, were detected in the soybeans collected from the Smith field; detection of glyphosate and AMPA was expected as Roundup was applied to the Smith field. The evidence at the site, the lab reports and the wind data from the four airports suggest dicamba from the application to the target field moved off-target to the Smith soybean field. However, it is difficult to determine whether dicamba moved off-target due to direct particle drift, application into an inversion or volatility at some point after the application. Regardless, directional wind data supports that Xtendimax was applied when winds were either calm or blowing toward the sensitive non-DT soybeans.

10. Regarding the protection of sensitive areas, the Xtendimax label reads, ***"****Before making an application, the applicator must survey the application site for neighboring non-target sensitive crops.* ***The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site."*** The label also states, *"<3 mph, Do not apply Xtendimax with VaporGrip Technology."* (applicator wind estimate) and *"DO NOT APPLY this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops . . ."* (independent weather reporting stations).

Andrew R. Roth
Investigator

Date: February 5, 2018

Disposition: Jeff Knittle was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry before application.

Jeff Knittle was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 19, 2018
Final Date: May 3, 2018

CASE SUMMARY

Case #2017/1087

Complainant: Jerry Losure
5360 E. CR300 N.
Marion, IN 46952
765-661-6896

Respondent: Greg Comer — Private Applicator
5195 S. CR600 W.
Swayzee, IN 46986
765-618-2012

1. On July 25, 2017, Amy Beebe contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to beans in her field as well as in a field farmed by her dad, Jerry Losure.

2. On July 26, 2017, I spoke with Amy Beebe who reported that, in addition to the two fields mentioned above, she had called earlier to report that non dicamba-tolerant (DT) soybeans in her dad's field near CR500E and CR100N in Grant County developed cupped leaves after an adjacent soybean field was sprayed. I met Ms. Beebe and Mr. Losure to investigate the two cases in northern Grant County (see Case#s 2017/1080 and 2017/1081). I apologized for the miscommunication regarding the first complaint call and told them I would get to it as soon as possible. Mr. Losure reported he first noticed the cupping in the fields 5-6 days earlier.

3. On August 7, 2017, I met Ms. Beebe and then went to the field referenced in the original complaint. The target soybean field, which was on the west side of CR500E, was reportedly being farmed by Mark Glessner and was suspected to have been sprayed with a dicamba-containing tank mix. Mr. Losure's Liberty Link soybean field, across the road to the east of the target field, was reportedly sprayed on July 19, 2017, with Liberty (glufosinate).

4. During my on-site investigation I did the following:
   a) Looked for, but did not find, any other potential sources of dicamba adjacent to the Losure soybean field. The Losure field was separated from the target field by approximately 45 feet, including CR500E and side ditches.
   b) Observed and photographed swaths of cupped and puckered leaves on new growth of non-DT soybean plants in the Losure field; symptoms were noticeably prominent in a low swale across the northern portion of the Losure field. These symptoms are commonly associated with exposure to a growth-regulator type herbicide such as dicamba. The height and canopy of non-DT soybeans varied in the Losure field. Soybeans in the target field exhibited no symptoms.
   c) Collected samples of affected soybean plants from the low area approximately 40 feet into the Losure field for assessment by the Plant & Pest Diagnostic Lab (PPDL) at Purdue.
   d) Collected plant samples from soybeans exhibiting symptoms approximately 40 feet into the Losure field, east of the road. Collected plant samples from soybeans approximately 20 feet into the target field, west of the road. Those two samples were submitted to the OISC Residue Lab for analysis.

Fig.1 Aerial photo of fields


Fig.2 Cupping in swale of Losure field


Fig.3 Varied height and canopy along swale

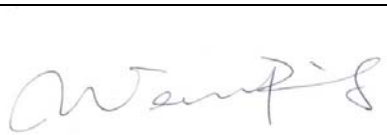

Fig.4 Cupped/puckered leaves on new growth

5. On August 7, 2017, I contacted Greg Comer, applicator at Glessner Farms, and informed him of the complaint. He confirmed he sprayed the target field with Xtendimax and estimated it was sometime in July. Mr. Comer indicated he would check the spray date and provide any application information needed. Mr. Comer later returned a completed Pesticide Investigation Inquiry which indicated the following:
   a) Application date & time: June 27, 2017, from 215-3pm
   b) Target field: Pulley farm (soybeans) SW corner 100N/500E, directly west of Losure field
   c) Pesticides: Roundup PowerMax (glyphosate) EPA Reg. #524-549
      Xtendimax (dicamba) EPA Reg. #524-617
   d) Application rate of Xtendimax: 22 oz. per acre
   e) Adjuvants: Astonish and Capsule
   f) Nozzles: TT1104
   g) Ground speed: 13.7mph
   h) Winds: 4mph from northwest
   i) Applicator: Greg Comer
   j) Buffer zone: side ditch and road
   k) Checked registrant's web site before application: yes
   l) Checked Driftwatch/Fieldwatch before application: yes
   m) Surveyed application site before application: yes

6. I checked recorded wind data at www.wunderground.com for the closest official weather station to the application site for June 27, 2017. The Marion Municipal Airport, which is seven (7) miles southwest of the application site, recorded the following:
   - 215pm Calm
   - 236pm 4.6mph from northwest (blowing toward Losure soybeans)
   - 255pm Calm

7. The PPDL report stated, "*Cupping/puckering of leaves and discolored leaf tip are indicative of injury from dicamba.*"

8. The OISC Residue Lab analyzed the plant samples for dicamba and its breakdown products, DCSA and 5-OH dicamba, and reported the following:

Case # 2017/1087		**Investigator: A. Roth**			
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**		
			Dicamba	DCSA	5-OH Dicamba
2017-47-4116	Non target beans- Losure	Vegetation	2.85	BQL	BDL
2017-47-4117	Target beans	Vegetation	BDL	0.714	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Vegetation		2	0.4	4
Signature		**Date**	12/4/17		

9. Dicamba was detected in the non-DT soybeans collected from the Losure field. One of two breakdown products of dicamba, DCSA, was detected in soybeans collected from the target field. Mr. Comer reported his buffer was comprised of the side ditch and road; the distance between the crops was no more than 45 feet. The evidence at the site, the lab reports and the wind data suggest dicamba from the application to the target field moved off-target to the Losure soybean field. While it is difficult to determine whether dicamba moved off-target due to direct particle drift, application into an inversion or volatility at some point after the application, the directional wind data supports that Xtendimax was applied when winds were either calm or blowing toward the sensitive non-DT soybeans.

10. The Xtendimax label reads, ***"DO NOT APPLY** this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops, including but not limited to, commercially grown tomatoes and other fruiting vegetables (EPA crop group 8), cucurbits (EPA crop group 9), and grapes."* And, *"Wind speed < 3 mph Do not apply XtendiMax with VaporGrip Technology."*

Andrew R. Roth
Investigator

Date: February 12, 2018

Disposition: Greg Comer was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 22, 2018
Final Date: May 3, 2018

CASE SUMMARY

Case #2017/1090

Complainant: Jeff Youngblood
9415 W 550 S
Williamsport, Indiana 47993
765-893-4434
765-366-4304

Respondent: Alan Lape — Private Applicator
Lape Farms
5501 W. US 136
Covington, Indiana 47932
765-299-7882

1. On July 27, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to their beans.

2. On August 1, 2017, I met with the complainant to conduct an on-site physical investigation of the alleged off-target pesticide movement incident reported to OISC. The complainant advised me that he believed his non-DT beans had been damaged by an application made to a nearby DT soybean field.

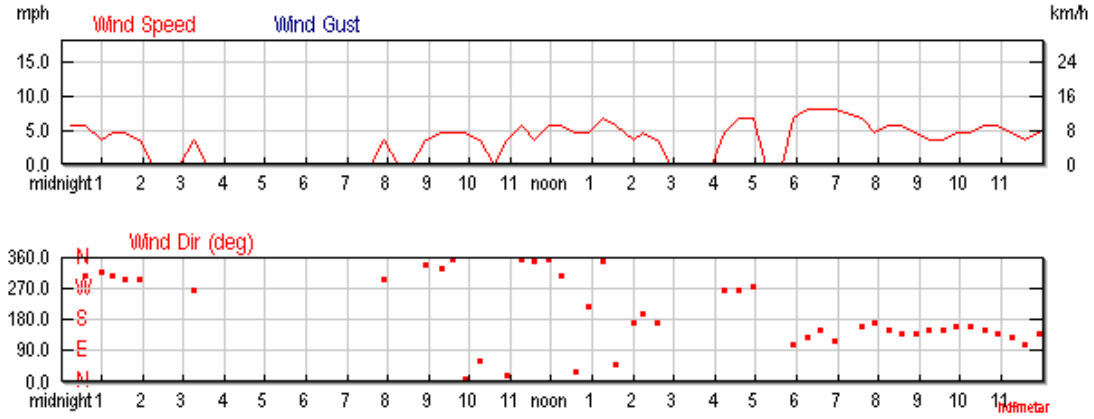
3. During my on-site investigation I did the following:
   a) Looked for and did not observe another potential dicamba application made in the area adjacent to the impacted site.
   b) Observed and photographed what I believed to be fairly uniform dicamba exposure symptoms (figure 1) throughout the complainant's non-target, non-DT soybean field (figure 2) located to the north of the target field. The target field and the complainant's non-target fields were separated by a road approximately 90 feet from first row to first row to the north. (figures 3 & 4).
   c) Collected soybean plant samples from impacted areas of the complainant's non-target soybean field for visual analysis by the Purdue Plant and Pest Diagnostic Lab (PPPDL).
   d) Collected samples for chemical analysis by the OISC Pesticide Residue Laboratory from the following areas:
      i) Impacted soybean plants from complainant's non-target soybean field;
      ii) Normal looking soybean plants from the target soybean field
   e) Made a diagram/map of the investigation site, depicting locations of relevant fields, sample collection, roads, structures, and other landmarks.

4. On August 3, 2017, I collected written records from the applicator. The written records and statements addressed the below items as follows:
   a) Application date & time: June 27, 2017; from 6:30pm-8:00pm
   b) Target field: soybean field to the south of complainant's soybean fields;
   c) Pesticides: Engenia (dicamba) EPA Reg. #7969-345, Buccaneer Plus (glyphosate) EPA Reg. #55467-9, Atlas (clethodim) EPA Reg. #89168-11-91395

d) Application rate: Engenia 12.8 oz/acre, Buccaneer Plus 32 oz/acre, Atlas 8 oz/acre
e) Adjuvants: Intact Xtra;
f) Nozzles: TTI 11005
g) Boom height: 24 Inches
h) Ground speed: 12-15 mph
i) Winds: 5 mph from the southwest;
j) Applicator: Alan Lape;
k) Certified supervisor: not applicable;
l) Left a 110' untreated buffer next to non-target site: No
m) Checked registrant's web site before application: No
n) Checked Field Watch before application: No
o) Surveyed application site before application: Yes

5. I searched wind data from www.weatherunderground.com for zip code 47993 in Williamsport, Indiana for the reported dates and times of the application. The results of that search indicated that wind speeds and directions during the application were as follows:

June 27, 2017
As recorded at Danville, IL 5-7 mph out of the south southeast



Danville, IL Wind Data located 8 Miles Southwest

6. The wind would have been blowing in the direction of the non DT beans.

7. The report from the PPPDL states, "*Cupping/puckering of leaves, parallel venation of leaves and discolored leaf tips are indicative of injury from dicamba.*"

8. The report from the OISC Pesticide Residue Laboratory states:

Case #	**2017/1090**		**Investigator**		**K. Neal**
Sample #	Sample Description	Amount of Analyte (ppb)			
		Matrix	**Dicamba**	**5-OH Dicamba**	**DCSA**
2017-220665	Youngblood beans 550 S W of 1000 W	Veg	BDL	BDL	BDL
2017-220666	Lape beans 550 S W of 1000 W	Veg	BDL	BDL	30.2

PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte

was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC				
LOQ	Vegetation	2 ppb	20 ppb	0.4 ppb
Signature			**Date**	11/27/2017

9. The label for Engenia states, *"Do not apply when wind is blowing in the direction of neighboring specialty crops." "Do not tank mix any product with Engenia unless: You check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia."* And *"The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available."*

Figure One

Figure Two

Figure Three

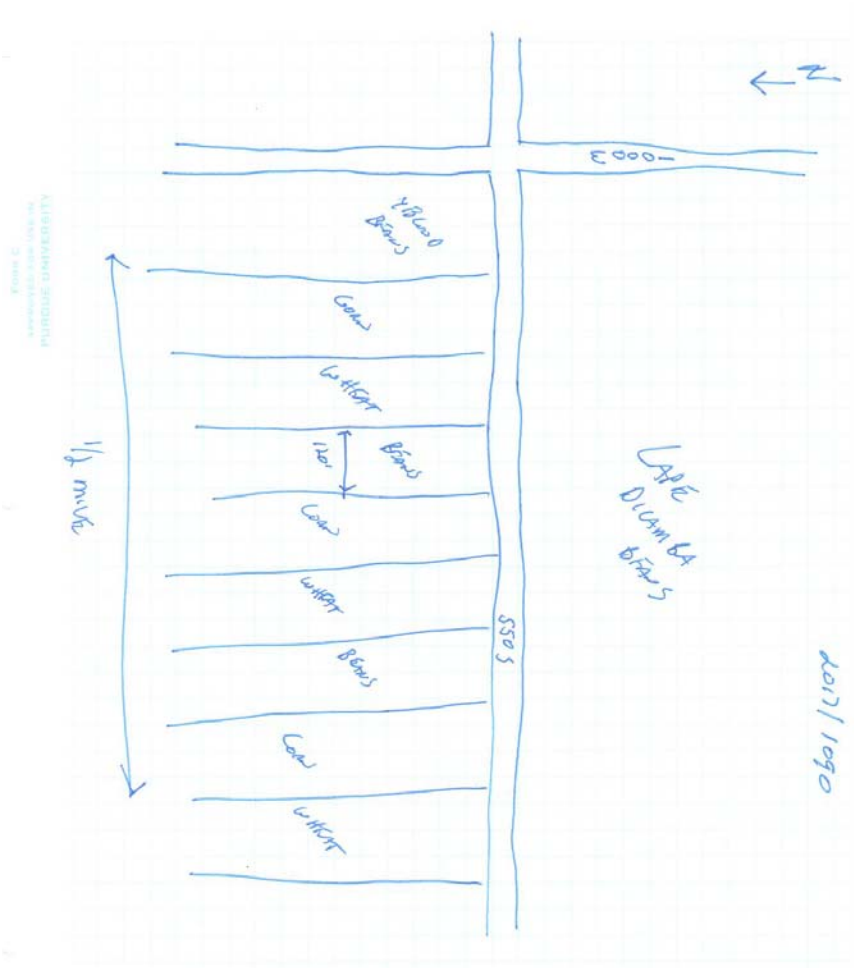


Figure Four

Kevin W. Neal
Investigator

Date: January 24, 2018

Disposition: Alan Lape was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the registrant's website and local sensitive crop registry before application.

Alan Lape was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding applying when wind is blowing in the direction of neighboring sensitive crop. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 7, 2018
Final Date: April 17, 2018

CASE SUMMARY

Case #2017/1098

Complainant: Brian Shafer
6868 S. CR200 E.
Warren, IN 46792
260-224-9527

Respondent: Greg Comer — Private Applicator
5195 S. CR600 W.
Swayzee, IN 46986
765-618-2012

1. On July 28, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his soybeans.

2. On August 1, 2017, I spoke with Brian Shafer who reported seeing cupped leaves on his non dicamba-tolerant (DT) Liberty Link soybeans on July 26, 2017, after a neighbor alerted him.

3. On August 2, 2017, I met Mr. Shafer at his field, which occupied the northeast corner of CR800E and CR200N in Grant County. He reportedly had walked the 80-acre field and observed widespread symptoms throughout the field. The field across the road to the west was reportedly farmed by Jim Thurman (Case #2017/1308) and the field across the road to the south was farmed by Eddie Blinn and Mark Glessner. It was suspected that at least one of those fields was sprayed with a dicamba-containing tank mix. Mr. Shafer reported his field was sprayed with Liberty (glufosinate) on July 15, 2017.

4. During my on-site investigation, I did the following:

   a) Identified two potential sources of dicamba adjacent to the Shafer soybean field. The Shafer field was bordered by county roads and the two potential target fields (Fig.1) on the west and south sides with no fence lines or other biological barriers.
   b) Observed and photographed widespread, mostly uniform cupping and puckering of leaves on non-DT soybean plants across the Shafer field. These symptoms are commonly associated with exposure to a growth-regulator type herbicide such as dicamba. Soybeans in the two suspected target fields exhibited no symptoms.
   c) Collected samples of affected soybean plants from the Shafer field for assessment by the Plant & Pest Diagnostic Lab (PPDL) at Purdue.
   d) Collected plant samples from soybeans exhibiting symptoms approximately 40 feet into the south end of the Shafer field, across CR200N from the (south) target field. Collected plant samples from soybeans approximately 40 feet into the target field, south of CR200N. Those two samples were submitted to the OISC Residue Lab for analysis. Because on-site investigations were conducted at two target fields, and samples were submitted at the same time, the lab results for both fields were reported on one report (see table below).

Fig.1 Aerial photo of fields


Fig.2 Shafer field; looking west


Fig.3 Cupped/puckered leaves

5. On August 2, 2017, I contacted Greg Comer, applicator for Mr. Blinn and Mr. Glessner, and informed him of the complaint. He confirmed he sprayed the target field with Xtendimax in July. Mr. Comer indicated he would check the spray date and provide any application information needed. He later returned a completed Pesticide Investigation Inquiry which indicated the following:

   a) Application date & time: July 12, 2017, from 9:40am-11am
   b) Target field: Reed farm (soybeans), directly south of the Shafer field
   c) Pesticides: Roundup PowerMax (glyphosate) EPA Reg. #524-549
      Xtendimax (dicamba) EPA Reg. #524-617
   d) Application rate of Xtendimax: 22 oz. per acre
   e) Adjuvants: Astonish and Capsule
   f) Nozzles: TTI1104
   g) Ground speed: 13.7mph
   h) Winds: 6-8mph from southwest (toward Shafer soybeans)
   i) Applicator: Greg Comer
   j) Buffer zone: not provided
   k) Checked registrant's web site before application: yes
   l) Checked Driftwatch/Fieldwatch before application: yes
   m) Surveyed application site before application: yes

6. I checked recorded wind data at www.wunderground.com for the closest official weather station to the application site for July 12, 2017. The Marion Municipal Airport, which is ten (10) miles southwest of the application site, recorded the following:

   - 10:16am 12.7mph from southwest (toward Shafer soybeans)
   - 10:35am 9.2mph from southwest

7. The PPDL report stated, *"Cupping/puckering of leaves and discolored leaf tip are indicative of injury from dicamba.*

8. The OISC Residue Lab analyzed the plant samples for dicamba and its breakdown products, DCSA and 5-OH dicamba, and reported the following (samples described as "West" were collected for Case #2017/1308 and do not pertain to this case):

Case #	2017/1098 (2017/1308)		Investigator		A. Roth
Sample #	Sample Description	Amount of Analyte (ppb)			
		Matrix	Dicamba	DCSA	5-OH Dicamba
2017-474104	Non target beans- West side Shafer	Vegetation	37.0	4.09	BDL
2017-474105	W. target beans- Thurman	Vegetation	BDL	3.80	BDL
2017-474106	Non target beans- South side Shafer	Vegetation	2.39	BQL	BDL
2017-474107	S. target beans- Blinn/Glessner	Vegetation	BDL	7.71	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Vegetation		2	0.4	4
Signature			**Date**	12/04/2017	

9. Dicamba was detected in the non-DT soybeans collected from the south end of the Shafer field. The dicamba breakdown product, DCSA, was detected in soybeans collected from the target field across the road to the south. The evidence at the site, the lab reports and the wind data suggest dicamba from the application to the target field moved off-target to the Shafer soybean field. While it is difficult to determine whether dicamba moved off-target due to direct particle drift, application into an inversion or volatility at some point after the application, the wind data provided by the applicator and recorded airport data supports Xtendimax was applied when winds were blowing toward the sensitive non-DT soybeans.

10. The Xtendimax label reads, **"DO NOT APPLY this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops, including but not limited to, commercially grown tomatoes and other fruiting vegetables (EPA crop group 8), cucurbits (EPA crop group 9), and grapes."**

Andrew R. Roth
Investigator

Date: February 22, 2018

Disposition: Greg Comer was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift management. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 23, 2018
Final Date: May 3, 2018

CASE SUMMARY

Case #2017/1108

Complainant: Richard Lee
11624 N. State Road 245
Lamar, Indiana 47550
512-296-5149

Respondent: Eric Mitchell, Certified Applicator
Blade Ag LLC
2929 N. Columbus Avenue
Louisville, Mississippi 39339
479-214-2255

Eric Mitchell
328 CR 3467
Clarksville, Arkansas 72830

1. On July 31, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected aerial agricultural pesticide drift. The complainant stated the aerial applicator drifted onto him. He stated he has a shirt he can surrender for analysis with the understanding the shirt will not be returned to him.

2. On August 1, 2017, I met with Mr. Richard Lee and his wife Mrs. Trish Lee at their residence. They stated on July 30, 2017 at approximately 2:00 pm, a dark blue helicopter was flying over their property, making a pesticide application between a corn field west of their property and a field to the north east of their property. They stated they attempted to waive the helicopter off, as they have chickens and horses and were concerned about the well-being of their animals. They stated they were by their barn and believed they were drifted upon by pesticide from the aerial application. They stated they had a bitter taste in their mouths .They stated they share crop the property with the Cochenouers. They stated they are to be notified by the Cochenours prior to any pesticide application, but were not. They further stated they had filed a complaint with the local Sheriff's Department and the Federal Aviation Administration (FAA) regarding the helicopter hovering over their barns. I advised them OISC only investigated pesticide violations. I collected a shirt from Mr. Lee which he was wearing at the time he was allegedly drifted upon. I placed the shirt in a bag and labeled it. I obtained a written statement from Mrs. Lee which is in this case file.

3. I then took photographs of the area, showing the location of the target field in relationship to the Lee's property. I collected soil and vegetation samples from the target field and vegetation samples from the Lee's property and the area next to where Mr. Lee stated he was standing when he was allegedly drifted upon. I also collected swab samples from the Lee's barn and the hay elevator. I labeled all of the samples and submitted them to the OISC residue lab.


4. I contacted the Cochenour Farm and left a message. On August 1, 2017, Mr. Chris Cochenour contacted me and advised me Eric Mitchell of Blade Ag LLC was the aerial applicator making the aerial pesticide application next to the Lee property on July 30, 2017. Mr. Cochenour stated Mr. Mitchell was applying Propaz fungicide EPA Reg. #83529-49 with the active ingredients propiconazole and azoxystrobin and Bifen 25% insecticide EPA Reg. #83520-4 with the active ingredient bifenthrin. He provided me with the contact information for Mr. Mitchell.

5. I made telephone contact with Mr. Mitchell. He confirmed he had applied Propaz fungicide and Bifen 25% insecticide. I advised him of the complaint and he stated he did not see anyone on the ground during his aerial pesticide application, but did see horses on his last pass, so he flew to avoid them. He did state he applied to the field west of the Lees, as well as a field to the NE. I advised Mr. Mitchell I would be sending a Pesticide Investigation Inquiry (PII) to him. Mr. Mitchell received the PII and completed it and returned it to me via email. He also provided me with the SATLOC application record from his aircraft. The PII confirmed the information provided to me by Mr. Cochenour and Mr. Mitchell. The PII further indicated, the winds at the time of the aerial pesticide application were SE 4 knots. The PII is in this case file.

6. I researched Weather Underground website for weather conditions on the date and time of the pesticide application. The weather report indicated the winds at the date and time of the aerial pesticide application were variable, ranging from SSE @ 1 – 9.8 mph to ENE @ 4.9 mph. The temperature was 84.7 degree F.

7. On November 7, 2017, I received a report from the OISC residue lab. The report indicated the active ingredients propiconazole and azoxystrobin were detected in the swab samples collected from the barn and the hay elevator, as well as the complainant's shirt and the vegetation samples collected from area the complainant stated he were standing. These were the active ingredients in Propaz fungicide. The following is a copy of the OISC residue lab report.

OFFICE OF INDIANA STATE CHEMIST

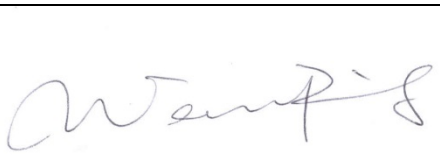
Pesticide Residue Laboratory

Lab Report

Case # 2017/1108		**Investigator: B. Brewer**			
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb, ng/swab or ng/shirt)**		
			Propiconazole	Azoxystrobin	Bifenthrin
2017-335030	Trip blank swab	Swab	BDL	BDL	Not tested
2017-335031	Control swab	Swab	0.774	BDL	Not tested
2017-335032	Swab north side of barn	Swab	28.2	69.4	Not tested
2017-335033	Swab south side of barn	Swab	7.15	21.5	Not tested
2017-335034	Swab Hay elevator	Swab	25.9	47.5	Not tested
2017-335035	Complainant Shirt	Clothing	77.4	2830	Not tested
2017-335036	Soil target	Soil	Not tested	Not tested	Not tested
2017-335037	Vegetation target	Vegetation	8.01	13.8	Not tested
2017-335038	Vegetation 60 feet from target	Vegetation	BQL	5.88	Not tested
2017-335039	Vegetation next to where complainant was standing	Vegetation	10.5	11.4	Not tested

PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC

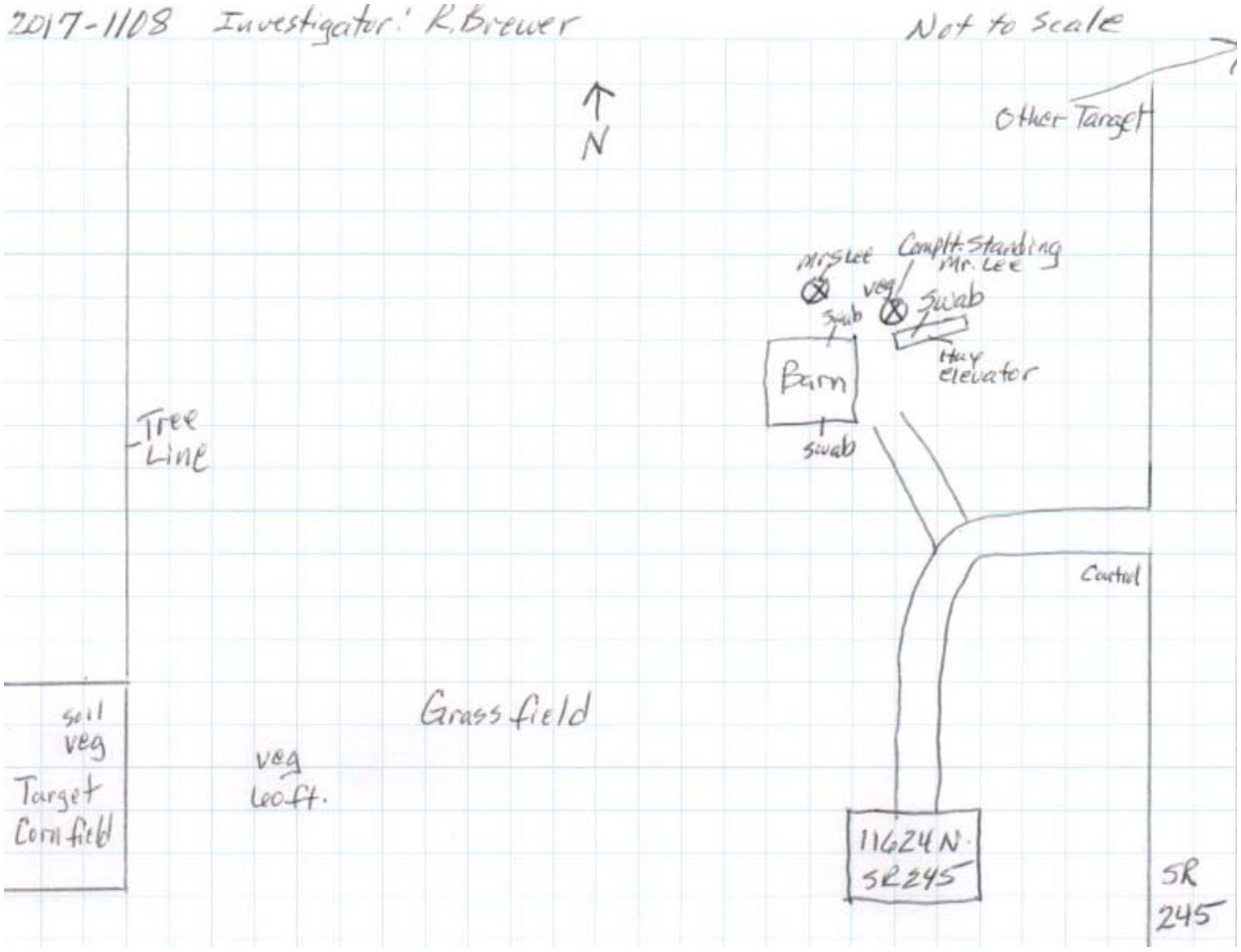
LOQ (ng/swab)	Swab	0.2	1	Not tested
LOQ (ng/shirt)	Clothing	8	40	Not tested
LOQ (ppb)	Vegetation	3	3	Not tested

Signature		**Date**	11/7/17

8. I researched the label for Propaz fungicide. The label stated *"Do not apply this product in a way that will contact workers or other persons, either directly or through drift"*.

9. The results of the OISC residue lab report along with the weather report, indicated the active ingredients in the pesticide Propaz fungicide did drift off target an onto the complainant's person. Note: Mr. Mitchell was very cooperative during the investigation.

10. The following is a diagram of the area and the locations of the sample collections.



Robert D. Brewer
Investigator

Date: December 4, 2017

Disposition: Eric Mitchell was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift to people. A civil penalty in the amount of $250.00 was assessed for this violation. Consideration was given to the fact there was potential for human harm.

George N. Saxton
Compliance Officer

Draft Date: February 1, 2018
Final Date: April 9, 2018

CASE SUMMARY

Case #2017/1110

Complainant: Jon Shields
10665 E. CR300 N.
Van Buren, IN 46991
765-661-3222

Respondent: Greg Comer — Private Applicator
5195 S. CR600 W.
Swayzee, IN 46986
765-618-2012

1. On August 1, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural drift to his beans.

2. On August 1, 2017, I spoke with Jon Shields who reported that he inspected his soybeans after learning that other growers in the area observed cupping in their non dicamba-tolerant (DT) soybean fields. He discovered his Liberty Link soybeans were cupped a few days prior and then decided to call the OISC.

3. On August 1, 2017, I met Mr. Shields at his field on the west side of State Road 5 in Grant County. He reported that the field bordering his to the north and northwest was being farmed by Eddie Blinn and Mark Glessner. It was suspected the field was sprayed with a dicamba-containing tank mix. Mr. Shields reported his field was sprayed with Liberty (glufosinate) over two days July 13 & 14.

4. During my on-site investigation, I did the following:

   a) Looked for, but did not find, any other potential sources of dicamba adjacent to the Shields soybean field. The target field bordered the Shields soybean field to the northwest and along the north side where a lane separated the two (Fig.1). A small woods on the south side of the lane separated the Shields field into two sections.
   b) Observed and photographed mostly uniform cupping and puckering of leaves on non-DT soybean plants across the northern and eastern portions of the Shields field; symptoms were visibly more severe in low areas within the field. These symptoms are commonly associated with exposure to a growth-regulator type herbicide such as dicamba. Soybeans in the target field exhibited no symptoms.
   c) Collected samples of affected soybean plants from the Shields field for assessment by the Plant & Pest Diagnostic Lab (PPDL) at Purdue.
   d) Collected two plant samples from soybeans exhibiting symptoms approximately 20 feet into the field; one from east the woods and one from west of the woods in the northwest corner of the field. Collected plant samples from soybeans approximately 20 feet into the target field, north of the lane. Those three samples were submitted to the OISC Residue Lab for analysis.

Fig.1 Aerial photo of fields


Fig.2 Shields low area east of woods


Fig.3 Affected beans in low area


Fig.4 Affected beans west of woods


Fig.5 Affected beans in NW corner


Fig.6 Cupped leaves on new growth

5. On August 2, 2017, I contacted Greg Comer, applicator for the growers farming the target field, and informed him of the complaint. He confirmed he sprayed the target field with Xtendimax in July. Mr. Comer indicated he would check the spray date and provide any application information needed. He later returned a completed Pesticide Investigation Inquiry which indicated the following:

   a) Application date & time: July 14, 2017, from 11am-1pm
   b) Target field: Williams farm (soybeans), bordering Taylor field
   c) Pesticides: Roundup PowerMax (glyphosate) EPA Reg. #524-549
      Xtendimax (dicamba) EPA Reg. #524-617
   d) Application rate of Xtendimax: 22 oz. per acre
   e) Adjuvants: Astonish and Capsule
   f) Nozzles: TTI1104
   g) Ground speed: 13.7mph
   h) Winds: 5mph from west-southwest (toward northwest corner of Shields field)
   i) Applicator: Greg Comer
   j) Buffer zone: not provided
   k) Checked registrant's web site before application: yes
   l) Checked Driftwatch/Fieldwatch before application: yes
   m) Surveyed application site before application: yes

6. I checked recorded wind data at www.wunderground.com for the closest official weather station to the application site for July 14, 2017. The Marion Municipal Airport, which is ten (10) miles southwest of the application site, recorded the following:
   - 11:16am 8.1mph from west-northwest (toward the Shields soybeans)
     11:35am 9.2mph from west-northwest
   - 11:55am 10.4mph from west-northwest
   - 12:15pm 6.9mph from west
   - 12:35pm 9.2mph from west
   - 12:55pm 10.4mph from west

7. The PPDL report stated, *"Cupping/puckering of leaves, parallel venation on leaves, and discolored leaf tip are indicative of dicamba injury."*

8. The OISC Residue Lab analyzed the plant samples for dicamba and its breakdown products, DCSA and 5-OH dicamba, and reported the following:

Case # 2017/1110		**Investigator: A. Roth**			
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**		
			Dicamba	DCSA	5-OH Dicamba
2017-474101	East Non target beans - Shields	Vegetation	4.52	BQL	BDL
2017-474102	West Non target beans - Shields	Vegetation	5.30	BQL	BDL
2017-474103	Target beans	Vegetation	354	96.6	25.4
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Vegetation		2	0.4	4
Signature		**Date**	12/04/17		

9. Dicamba was detected in the non-DT soybeans collected from both sides of the woods in the Shields field. Dicamba and both breakdown products were detected in soybeans collected from the target field. The evidence at the site, the lab reports and the wind data suggest dicamba from the application to the target field moved off-target to the Shields soybean field. While it is difficult to determine whether dicamba moved off-target due to direct particle drift, application into an inversion or volatility at some point after the application, the directional wind information provided by Mr. Comer supports that Xtendimax was applied when winds were blowing toward the northwest corner of the sensitive non-DT soybeans. It should be noted the airport wind data indicated winds were from the west-northwest and west, which would also have been blowing toward the Shields field, during the application.

10. The Xtendimax label reads, ***"DO NOT APPLY this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops, including but not limited to, commercially grown tomatoes and other fruiting vegetables (EPA crop group 8), cucurbits (EPA crop group 9), and grapes."***

Andrew R. Roth
Investigator

Date: February 20, 2018

Disposition: Greg Comer was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 23, 2018
Final Date: May 3, 2018

CASE SUMMARY

Case #2017/1162

Complainant: Wallace Meyer
2328 E. Mud Pike Road
Osgood, Indiana 47037
812-689-4499

Respondent: Milhon Air, Inc. — Licensed Business
David Ryan — Unlicensed Applicator
2151 Centerton Road
Martinsville, Indiana 46151
317-831-7464

1. On August 1, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report aerial agricultural pesticide drift to his garden.

2. On August 9, 2017, I met with Wallace Meyer at his residence. Mr. Meyer stated an aerial application on July 20, 2017, drifted onto his tomatoes and sweet corn. Mr. Meyer stated his son's garden was drifted on from the same application. See Case Summary 2017/1163. I collected vegetation samples from his tomato plants and sweet corn. See site diagram.

3. On August 9, 2017, I met with Brian Weston of Premier Ag. Mr. Weston provided me with a copy of an Application Report from Milhon Air for an application on July 30, 2017, by David Ryan. Mr. Ryan applied Trivapro A (EPA Reg. #100-1471, active ingredient benzovindiflupyr) and Trivapro B (EPA Reg. #100-1324, active ingredients azoxystrobin and propiconazole).

4. A check of OISC's licensing database indicated Davis Ryan did not have a license to apply pesticide for-hire.

5. On August 9, 2017, I spoke with Brent Milhon of Milhon Air Inc. Mr. Milhon stated he was unaware David Ryan was not licensed. Mr. Milhon cooperated fully with the investigation by providing the application record for the July 30, 2017, application and all applications made by David Ryan while he was employed with Milhon Air.

6. On August 22, 2017, I received all applications records for David Ryan. Mr. Ryan made applications on the following days without an applicators license:

July 26, 2017	July 28, 2017	July 29, 2017	July 30, 2017
July 31, 2017	August 1, 2017	August 2, 2017	August 3, 2017

7. On August 21, 2017, I received a letter from Brent Milhon that he sent to Wallace Meyer and Greg Meyer offering compensation for damages related to the application on July 30, 2017. The letter was signed by all parties.

8. On November 2, 2017 I received lab results from OISC's Residue lab;

Case # 2017/1162		**Investigator: J. Kelley**		
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**	
			Propiconazole	Azoxystrobin
2017-50-1869	Vegetation from tomato plants	Vegetation	96.4	130
2017-50-1870	Vegetation from sweet corn	Vegetation	37.8	27.4
2017-50-1871	Vegetation from target field	Vegetation	31.9	53.3
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC				
LOQ (ppb)	Vegetation		3	3
Signature		**Date**	11/2/17	

9. Weather data from Weather Underground, www.wunderground.com, indicated wind was variable at 0-7 mph with gusts to 13mph.

10. Label language for Trivapro B states in part, "*Do not spray when conditions favor drift beyond area intended for application.*"

Paul J. Kelley III

Paul J. Kelley
Investigator

Date: November 28, 2017

Disposition: David Ryan of Milhon Air, Inc. was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. Consideration was given to the fact this was his first violation of similar nature.

David Ryan of Milhon Air, Inc. was cited for eight (8) counts of violation of section 65(6) of the Indiana Pesticide Use and Application, specifically 355 IAC 4-2-2, for making aerial pesticide applications without an Indiana certification. A civil penalty in the amount of $2,000.00 (8 counts x $250.00 per count) was assessed.

George N. Saxton
Compliance Officer

Draft Date: January 31, 2018
Final Date: March 22, 2018

CASE SUMMARY

Case #2017/1164

Complainant: Leonard Stultz
9234 N. Adams Street
Terre Haute, Indiana 47805
812-242-0482

Respondent: Keith White — Certified Applicator
Crop Production Services
9009 State Road 28 W.
Attica, Indiana 47918
765-275-2795

1. On August 1, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On August 7, 2017, I met with the complainant at his home. I identified myself verbally and with OISC credentials. I explained the role of OISC in drift investigations and then issued a Notice of Inspection.

3. I followed Mr. Stultz to his affected fields, very near the intersection of E. Rio Grande Ave and Rosedale Rd. The complainant's two fields are on Rio Grande Rd, one just east and on the south side of the road and the other just west of the intersection and on the south side of the road. Mr Stultz told me the pesticide spray application of dicamba (Engenia) was made to the neighboring field on July 5, 2017, and he added he was present when the pesticide spray application was made by CPS of Attica, Indiana and the wind speed and wind direction were correct for the application. Mr. Stultz said he noticed his soybeans cupping and puckering just a few days after that pesticide spray application of dicamba to the neighboring field of dicamba tolerant (DT) soybeans.


Fig. 1


Fig. 2


Fig. 3


Fig. 4


Fig. 5

- Fig. 1 shows the dicamba tolerant soybeans on the left and the non-tolerant field on the right.
- Figs. 2&3 are the field SE of the intersection.
- Figs. 4&5 are the field SW of the intersection.

4. The complainant showed me a third field that was farther west on E. Rio Grande Avenue and the field that bordered it to the north was also sprayed with dicamba by the Attica CPS the same day. The pesticide exposure symptoms in that field were the same minor cupping/puckering of leaves with more in the center of that field and less along the edges. The complainant told me there were no crop fields in the area that used any dicamba products other than the ones he showed me which appear on the diagram in fig. 6. The complainant told me the only post emergent pesticide spray

application made to his fields was on July 5, 2017 by the Ceres Solutions in Brazil Indiana with the following pesticide product.

- *Cornerstone 5 Plus, EPA Reg. #1381-241, active ingredient=glyphosate*

5. I spoke to Mr. David Shroer at the Brazil Ceres and he told me the machine that sprayed the Cornerstone product did have dicamba in it the day before and they used a triple rinse with detergent clean out. Mr. Shroer told me he sprayed another field prior to spraying the complainant's fields in this case and that field had no injury symptoms to the non-DT soybeans planted in it.

6. I collected swabs and vegetation from the two fields discussed in paragraph 3. I collected in two places in both fields from the least affected to the most affected. I also collected swabs, vegetation and soil from the suspect field. I collected in what would be a buffer zone along the edge (if the label requires it) and in the application area. With a laser range finder I used a utility pole #3.9915 for the fixed location and the ranges taken in the complainant's field were 180 yards for least affected and 22 yards for most affected. In the suspect field, the ranges were 20 yards for buffer zone and 65 yards for the application area. In the second field I used the same method and my fixed object was utility pole #309405 for most affected and utility pole #309467 for the least affected. I also collected leaf samples for the Purdue Plant and Pest Diagnostic Laboratory (PPDL) to examine.

7. I used a field sketch to complete the diagram, which follows in figure 6. The diagram shows the fields discussed in this report and the sampling points. Some weather data was also added.

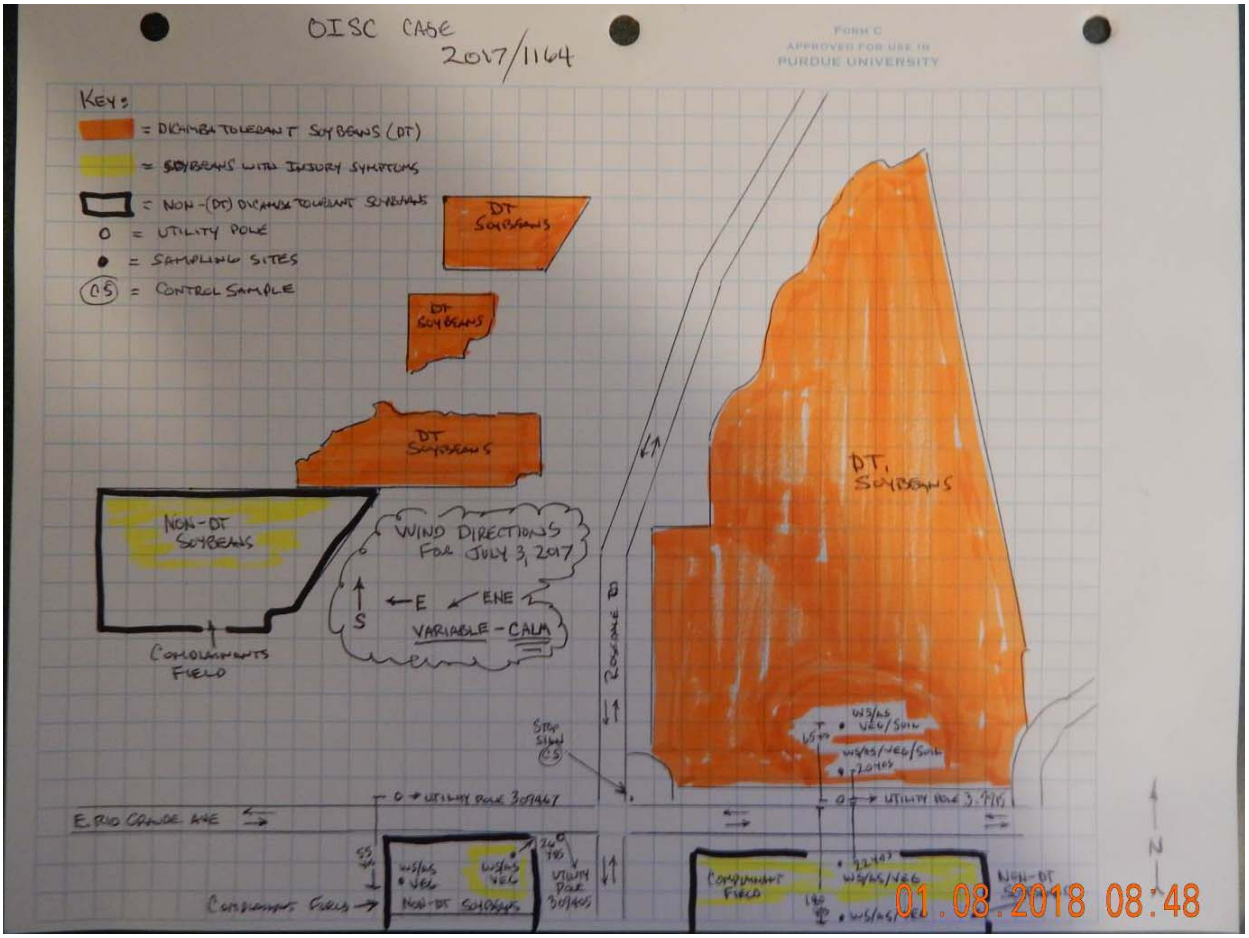


Fig. 6

8. The samples were tagged and transported to the OISC Residue Laboratory for analysis. The leaf samples were taken to PPDL for examination.

9. I delivered a Pesticide Investigation Inquiry (PII) to the CPS at Attica, Indiana and collected a record for the pesticide spray application in this case.

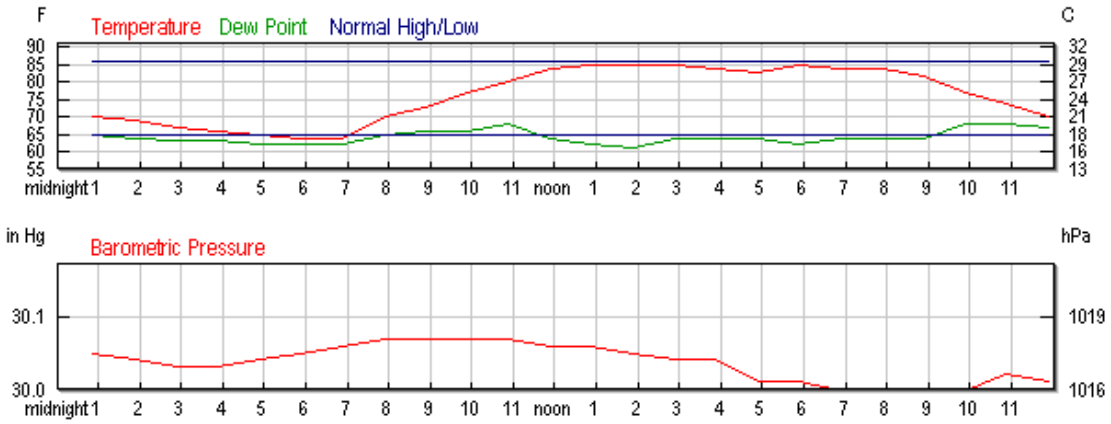
10. On August 23 2017, I picked up the completed PII from the Attica CPS. The information, which follows, was taken from that PII.

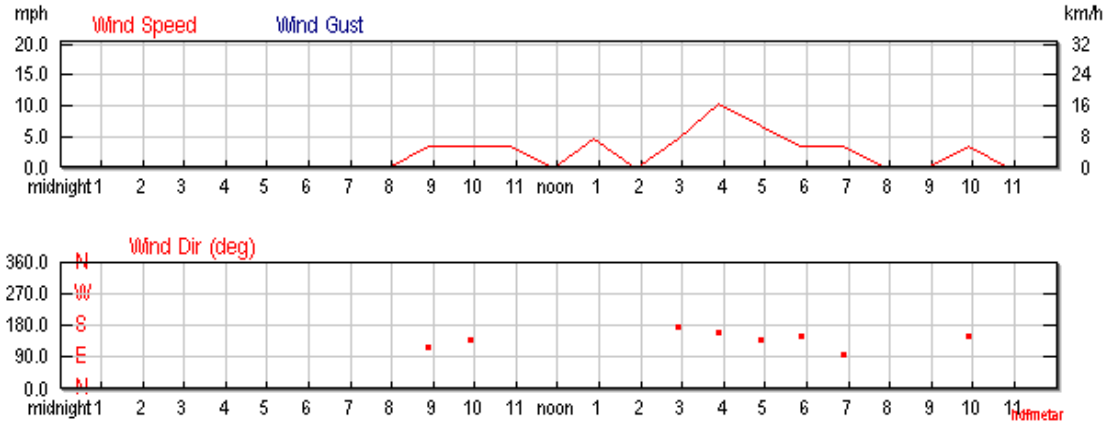
    a) **Application date & time:** Engenia; July 3, 2017 from 10:45am to 3:10pm
    b) **Target Application Site:** Triple J, 4 fields on the east and west sides of Rosedale Rd north of E. Rio Grande Ave.
    c) **Application rate of Engenia:** 12.8 oz per acre
    d) **Adjuvants**: Strikeforce and Reign
    e) **Nozzles:** TTI 11004
    f) **Winds on July 3, 2017:** Applicator estimated 10-15mph from memory, no direction.
    g) **Applicator:** Keith White
    h) **Buffer used:** yes, 120'
    i) **Ground Speed:** 14.4 mph
    j) **Boom Height:** 12"
    k) **Checked Registrants website before application:** yes
    l) **Checked Fieldwatch/Driftwatch:** yes
    m) **Surveyed site before application:** yes

11. The triangulated weather history data which follows was taken from weatherunderground.com. history for Terre Haute, Indiana, Robinson, Illinois which is approximately 35 miles SW of Terre Haute, and Bloomington, Indiana, which is approximately 50 miles SE of Terre Haute. It should be noted that there were many periods of "Calm" at all three locations during the time given for the pesticide spray application on July 3, 2017. I spoke to the Certified Applicator in this case and asked if he checked for an inversion during the application and he said he "did not".

Terre Haute Indiana

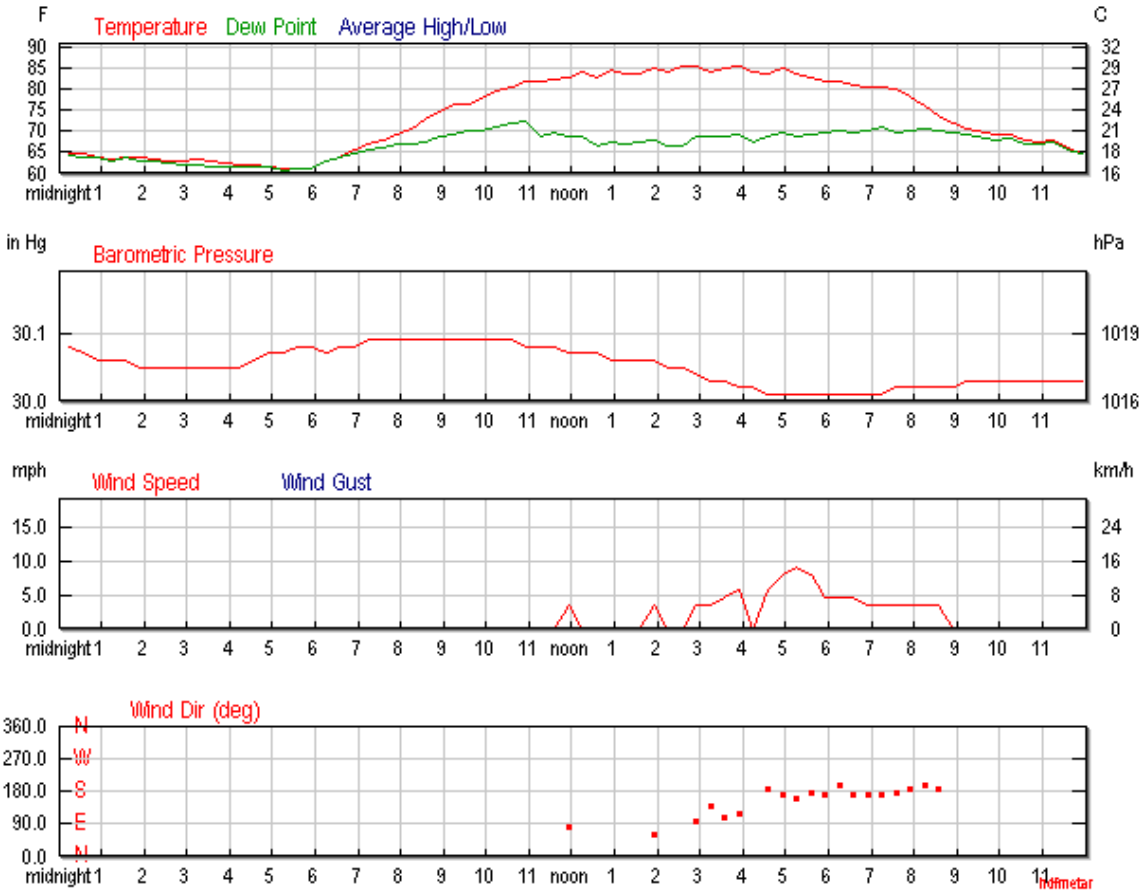
Date	Time	Wind Direction	Wind Speed
7-3-17	10:53am	Variable	3.5 mph
7-3-17	11:53am	Calm	Calm
7-3-17	12:53pm	Variable	4.6 mph
7-3-17	1:53pm	Calm	Calm
7-3-17	2:53pm	South	4.6 mph





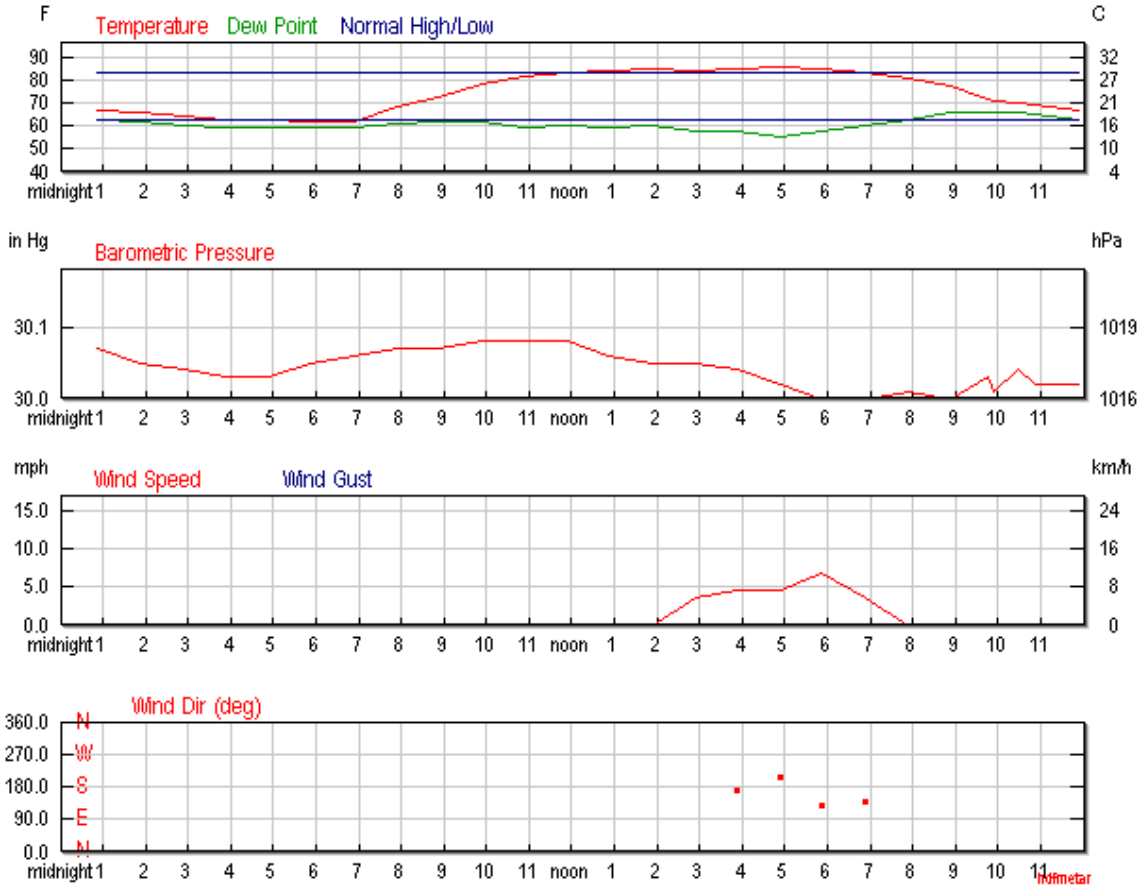
Robinson, Illinois approximately 35 miles SW of Terre Haute Indiana

Date	Time `	Wind Direction	Wind Speed
7-3-17	10:35am-11:35am	Calm	Calm
7-3-17	11:55am	East	3.5 mph
7-3-17	12:15pm-1:35pm	Calm	Calm
7-3-17	1:55pm	ENE	3.5 mph
7-3-17	2:15pm-2:35pm	Calm	Calm
7-3-17	2:55pm	East	3.5 mph



Bloomington Indiana approximately 50 miles SE of Terre Haute Indiana

Date	Time	Wind Direction	Wind Speed
7-3-17	10:53am	Calm	Calm
7-3-17	11:53am	Calm	Calm
7-3-17	12:53pm	Calm	Calm
7-3-17	1:53pm	Calm	Calm
7-3-17	2:53pm	Variable	3.5 mph



12. On August 8, 2017, I received the final report from PPDL in this case. The report reads in part;

    "Cupping/puckering of leaves and discolored leaf tip are indicative of injury from dicamba. Some leaves were strapped with parallel venation and no discolored leaf tip. This would be indicative of injury from another growth regulator herbicide like 2,4-D or triclopyr".

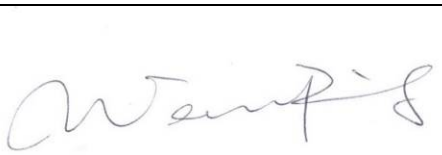
    Joe Ikley
    Extension Weed Specialist
    Purdue University

13. On December 22, 2017, I received an e-mail of the final analysis report from the OISC Residue Laboratory for the samples submitted in this case. The chart that follows is a copy and paste of that report.

OFFICE OF INDIANA STATE CHEMIST

Pesticide Residue Laboratory

Lab Report

Case # 2017/1164		**Investigator: B. Baker**			
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**		
			Dicamba	**DCSA**	**5-OH Dicamba**
2017-32-3909	Veg Sample from Field (#1) Middle of Field	Vegetation	BDL	BDL	BDL
2017-32-3910	Veg Sample from Field (#1) North end of Field	Vegetation	BDL	BDL	BDL
2017-32-3911	Veg Sample from Field (#2) West middle of Field	Vegetation	BDL	BDL	BDL
2017-32-3912	Veg Sample from Field (#2) NE Corner of Field	Vegetation	BDL	BDL	BDL
2017-32-3913	Veg Sample from Suspect Field – Buffer	Vegetation	BDL	BDL	BDL
2017-32-3914	Veg Sample from Suspect Field – App Area	Vegetation	127	51.9	365
2017-32-3915	Soil Sample from Suspect Field – Buffer	Soil	BDL	BDL	BDL
2017-32-3916	Soil Sample from Suspect Field – App Area	Soil	BDL	7.74	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Vegetation	2	1		20
LOQ (ppb)	Soil	2	1		2
Signature			**Date**	12/19/17	

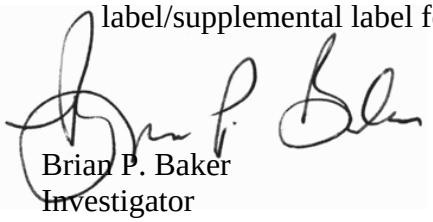
The results from the OISC Residue Laboratory indicate there was no measurable amount of dicamba found in any of the samples taken from the complainant's fields. The results also verify that the respondent did observe a buffer as stated in his PII.

14. The label for Engenia EPA Reg# 7969-345 reads in part under the heading:
Wind Speed Application Conditions and Restrictions:
Page 3 of the supplemental label.

"< 3 mph, Only apply Engenia if steps have been taken to confirm that a temperature inversion is not present".

15. CONCLUSION:
In this case, the complainant reported injury symptoms to his non-DT soybeans and he suspected an application of dicamba to neighboring fields had moved off target and onto his soybeans. Samples were taken and submitted to PPDL and OISC Residue Laboratory. The results from the OISC Residue Laboratory did not show any detectable levels of dicamba in the samples however, the samples submitted to the PPDL showed symptoms that were "indicative" of dicamba injury. The respondent made a pesticide spray application with Engenia to the four fields marked in orange on the diagram in fig. 6 of this report. The pesticide spray application of dicamba on the DT Soybeans was made on July 3, 2017 from 10:45 am until 3:10pm. In that period on July 3,

2017, the triangulated weather data in paragraph 11 of this report indicates the wind went calm, which is defined as less than one knot or 1.15 mph on the Beaufort Scale[1], during the pesticide spray application. I spoke to the Respondent in this case and asked if steps were taken during the application time period to check for an inversion and he told me "no". The post-emergent pesticide spray application made by Ceres Solutions of Brazil, Indiana on the complainant's non-DT Soybeans on July 5, 2017 was one day after a dicamba product had been used in the sprayer making the application. The Manager for Ceres Solutions told me a triple rinse with detergent was used before making the post emergent pesticide spray application to the complainant's non DT soybeans and added that one other field had been sprayed on July 5, 2017 prior to the complainant's and that field had "no injury symptoms" to the non DT soybeans. It appears in this case, there could have been a temperature inversion during the pesticide spray application made by the respondent, which could have led to the off-target movement of the dicamba and the resulting injury symptoms to the complainant's non-DT soybeans. The label/supplemental label language for Engenia in paragraph 14 of this report requires the user to take steps to check for a temperature inversion when the wind speed is less than 3 mph. There is one violation of the label/supplemental label for Engenia in this case.



Brian P. Baker
Investigator

Date: January 8, 2018

Disposition: Keith White was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application in winds less than three miles per hour. A civil penalty in the amount of $250.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: February 16, 2018
Final Date: April 9, 2018

[1] American Heritage® Dictionary of the English Language, Fifth Edition. Copyright © 2016 by Houghton Mifflin Harcourt Publishing Company. Published by Houghton Mifflin Harcourt Publishing Company. All rights reserved.

CASE SUMMARY

Case #2017/1166

Complainant: John Barber
3886 E. 700 S.
Montgomery, Indiana 47558
812-486-9383

Respondent: Ryan Michael — Private Applicator
4475 E. 750 S.
Montgomery, Indiana 47558
812-486-8412

1. On August 1, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his Liberty beans.

2. On August 14, 2017, I met with John Barber. Mr. Barber took me to his field located along the east fork of the White River. Mr. Barber stated Ryan Michael farms DT soybeans that are next to his Liberty soybeans. See site diagram. Mr. Barber stated he believed as a result of a pesticide application by Mr. Michael with dicamba, he now has pesticide exposure symptoms.

3. On August 14, 2017, I collected a vegetation sample to be visually analyzed by Purdue's Plant and Pest Diagnostic Lab (PPDL). In addition, I collected soil and vegetation samples to be analyzed by OISC's Residue Lab. See site diagram. I observed soybean leaves in Mr. Barber's field had crinkled leaves. See figures 1-2.


Figure 1-Crinkled leaves


Figure 2-Barber soybeans on left

Key		Map #
2017501881	Soil 50 yds from target field	1
2017501882	Soil 5 yds from target field	2
2017501883	Soil from target field	3
2017501884	Vegetation 50 yds from target field	4
2017501885	vegetation 5 yds from target field	6
2017501886	Vegetation from target field	6

Site Diagram

4. On August 14, 2017, I spoke with Ryan Michael. Mr. Michael stated he applied Xtendimax (EPA Reg. #524-617, active ingredient dicamba) on June 26, 2017 and June 27, 2017. I emailed Mr. Michael a Pesticide Investigative Inquiry (PII) form to complete, sign and return.

5. On August 15, 2017, PPDL reported the following:

Diagnosis and Recommendations

Host/Habitat	Soybean (Glycine max)
List of Diagnosis/ID(s)	
Suspected for Herbicide injury; Exposure (Abiotic disorder)	
Confirmed for Soybean brown spot (Septoria glycines)	

Final Report

8-16-17
Cupping/puckering of leaves and discolored leaf tip are indicative of injury from dicamba.

Joe Ikley
Extension Weed Specialist
Purdue University

915 West State Street
W. Lafayette, IN 47907
e-mail - jikley@purdue.edu
Cell - (410) 596-9091
Office - (765) 496-2121

8-16-17
A common foliar disease, Brown Spot, was confirmed on the lower leaves.

Gail Ruhl
Plant Disease Diagnostician

6. On August 14, 2017, I received Mr. Michael's completed PII. The following are answers to questions from the PII.

   A. Application dates & times: June 26, 2017 (6:00pm-7:30pm) and June 27, 2017 (6:30pm-7:00pm).
   B. Target field: DT-soybeans
   C. Application rate of Xtendimax: 22 oz. per acre
   D. Adjuvants: none used
   E. Nozzles: TTI 11004; 40 PSI
   F. Winds: 6/26 - 3-4mph west 6/27 – 5mph north
   G. Applicator: Ryan Michael
   H. Buffer Zone: no
   I. Ground speed: 6.5-8mph
   J. Boom height: Not asked on this PII
   K. Checked Registrants website before application: no
   L. Checked Field Watch before application: no
   M. Surveyed site before application: no

7. On December 5, 2017, OISC's Residue Lab reported the following:

Case # 2017/1166		**Investigator: J. Kelley**			
Sample #	**Sample Description**	**Sample Matrix**	**Amount Found (ppb)**		
			Dicamba	**DCSA**	**5-OH Dicamba**
2017-50-1881	Soil 50 yards from target field	Soil	BDL	BDL	BDL
2017-50-1882	Soil 5 yards from target field	Soil	BDL	BDL	BDL
2017-50-1883	Soil from target field	Soil	1.04	82.6	BDL
2017-50-1884	Vegetation 50 yards from target field	Vegetation	BDL	BDL	BDL
2017-50-1885	Vegetation 5 yards from target field	Vegetation	BDL	BDL	BDL
2017-50-1886	Vegetation from target field	Vegetation	BDL	0.526	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Soil		1	1	1
LOQ (ppb)	Vegetation		2	0.4	4
Signature			**Date**	12/5/2017	

8. Wind data from weather Underground, www.wunderground.com, by triangulating data from three (3) weather stations indicated the following:

   A. Daviess County Airport station in Washington, Indiana, 23 miles away indicated the wind was calm on June 26, 2017 and June 27, 2017.
   B. Wind data from station KINJASPE11 in Jasper, Indiana, 15 miles away indicated on June 26, 2017, the wind was 0mph. Wind data for June 27, 2017, indicated the wind was variable 0-2 mph.
   C. Wind data from station KINPRINC7 in Princeton, Indiana, 47 miles away indicated the wind on June 26, 2017, was out of the south, southwest, west, and west, southwest at 0-2.2mph with gust to 2.7mph. On June 27, 2017, the wind speed was 0mph.

9. Label language for Xtendimax states in part:

   A. "DO NOT tank mix any product with XtendiMax with VaporGrip Technology unless, . . . You check the list of tested products found not to adversely affect the offsite movement potential of XtendiMax with VaporGrip Technology at www.xtendimaxapplicationrequirements.com no more than 7 days before applying . . ."

   B. "<3 mph Do not apply XtendiMaxTM With VaporGripTM Technology"

   C. "Before making an application, the applicator must survey the application site for neighboring non-target susceptible crops. The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site."

Paul J. Kelley III

Paul J. Kelley
Investigator

Date: January 24, 2018

Disposition: Ryan Michael was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding checking the Registrant's website, sensitive crop registry and for failure to survey the site before application.

Ryan Michael was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application in winds less than three (3) miles per hour. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 6, 2018
Final Date: April 17, 2018

CASE SUMMARY

Case #2017/1168

Complainant: Greg Daily
8950 E. 25th Street
Columbus, Indiana 47203
812-371-7087
812-376-6922

Respondent: Louis Wischmeier — Certified Private Supervisor
Seth Pollert — Non-certified Applicator
8925 S. 350 E.
Columbus, Indiana 47201
812-371-7087

1. On August 2, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On August 3, 2017, I went to Mr. Daily's non-DT soybean field to investigate. I observed soybean leaves "crinkled". See figure 1. I did not see any discernable pattern of heavier to lighter. I observed a soybean field directly west of Mr. Daily's soybean field with no visible symptomology. See figures 2-3. I observed a soybean field south of Mr. Daily's soybean field across State Road 7, in Columbus, Indiana. See site diagram. I collected a vegetation sample to be visually analyzed by Purdue's Plant and Pest Diagnostic Lab (PPDL). In addition, I collected soil and vegetation samples to be analyzed by OISC's Residue Lab.


Figure 1-Crinkled leaves


Figure 2-DT-soybeans upper right


Figure 3-Soybean field to west

Key		map #
2017501856	Soil 50 yds from target field	1
2017501857	Soil 5 yds from target field	2
2017501858	Soil from target field	3
2017501859	vegetation 50 yds from target field	4
2017501860	vegetation 5 yds from target field	5
2017501861	vegetation from target field	6

Site diagram

3. On August 3, 2017, I spoke with Louis Wischmeier of L&H Wischmeier farms. Mr. Wischmeier stated he farms the ground around Mr. Daily's field. Mr. Wischmeier stated his employee, Seth Pollert, made pesticide applications to the surrounding fields. Mr. Pollert applied Engenia (EPA Reg. #7968-345, active ingredient dicamba) and Buccaneer Plus (EPA Reg. #55467-9, active ingredient glyphosate). I emailed Mr. Wischmeier a copy of a Pesticide Investigation Inquiry (PII) form to complete, sign, and return.

4. On August 4, 2017, I received Mr. Pollert's completed PII. The following are answers to questions from the PII.

   A. Application dates & times: June 10, 2017 (1:08pm-2:57pm) and July 13, 2017 (9:16am-10:12am).
   B. Target field: DT-soybeans
   C. Application rate of Engenia: 12.8 oz. per acre
   D. Adjuvants: Kabak Plus

E. Nozzles: TII 11004; 35-60 PSI
F. Winds: Applicator field measurement on 6/10 – 8mph SSW. On 7/13 – 9mph SW
G. Applicator: Seth Pollert
H. Buffer Zone: 6/10-no ("downwind field did not have an emerged crop on application date"). 7/13-"State Highway 7 was used as buffer".
I. Ground speed: 9-13mph
J. Boom height: 15-20 in.
K. Checked Registrants website before application: yes
L. Checked Field Watch before application: no
M. Surveyed site before application: yes

5. On August 4, 2017, PPDL reported the following:

Diagnosis and Recommendations

Host/Habitat	Soybean (Glycine max)
List of Diagnosis/ID(s)	
Suspected for Herbicide injury; Exposure (Abiotic disorder)	

Final Report

8-4-17
Cupping/puckering of leaves and discolored leaf tip are indicative of injury from dicamba.

Joe Ikley
Extension Weed Specialist
Purdue University
915 West State Street
W. Lafayette, IN 47907
e-mail - jikley@purdue.edu
Cell - (410) 596-9091
Office - (765) 496-2121

6. On December 3, 2017, OISC's Residue Lab reported the following:

Case # 2017/1168		**Investigator: J. Kelley**			
Sample #	**Sample Description**	**Sample Matrix**	**Amount Found (ppb)**		
			Dicamba	**DCSA**	**5-OH Dicamba**
2017-501856	Soil 50 yards from target field	Soil	BDL	BDL	BDL
2017-501857	Soil 5 yards from target field	Soil	BDL	BDL	BDL
2017-501858	Soil from target field	Soil	BDL	59.0	BDL
2017-501859	Vegetation 50 yards from target field	Vegetation	BDL	BDL	BDL
2017-501860	Vegetation 5 yards from target field	Vegetation	BDL	BDL	BDL
2017-501861	Vegetation from target field	Vegetation	7.12	BDL	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Soil		1	1	1
LOQ (ppb)	Vegetation		2	0.4	4
Signature		**Date**	12/3/2017		

7. Wind data from Weather Underground, www.wunderground.com, by triangulating data from three (3) weather stations indicated the following:

   A. Wind data from the Columbus Municipal Airport station approximately 13 miles away on June 10, 2017, between 1:08pm and 2:57pm, indicated the wind was out of the south, south southwest at 15mph-16.1mph with gust to 21.9mph blowing toward Mr. Daily's soybean field. On July 13, 2017, between 9:16am and 10:12am, wind data indicated the wind was out of the southwest, west southwest at 13.8mph-16.1mph with gust to 18.4 mph.
   B. Wind data from station KINCOLUM62 near Elizabethtown, Indiana, approximately 4 miles away indicated the wind was out of the south, southwest, and southeast on June 10, 2017, at 2mph-4mph. On July 13, 2017, the wind was mainly out of the south at 1mph-2mph.
   C. Wind data from station KINCOLUM36 near Jonesville, Indiana, approximately 13 miles away indicated the wind on June 10, 2017, was out of the south, southwest, and southeast at 2mph-12 mph. On July 13, 2017, the wind was out of the south, southwest, south-southwest, and south-southeast at 4mph-7mph.

8. Label language for Engenia states in part," *DO NOT apply when wind is blowing in the direction of neighboring specialty crops*". And, "*The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available*".

9. Mr. Pollert's PII indicated the wind on June 10, 2017 and July13, 2017, were out of the south-southwest and southwest. Weather Underground data confirms the wind was out of the southwest during the both applications blowing toward Mr. Daily's non-DT soybeans. Furthermore, Mr. Pollert stated in his PII he did not check the "Field Watch" website.

Paul J. Kelley III

Paul J. Kelley
Investigator

Date: January 24, 2017

Disposition: Seth Pollert was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry.

Seth Pollert was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 6, 2018
Final Date: April 17, 2018

CASE SUMMARY

Case #2017/1171

Complainant: Glen Martin
4366 Folsomville Degonia Road
Tennyson, Indiana 47637
812-779-7450

Respondent: Tim Reibold — Private Applicator
13600 Gore Road
Lynnville, Indiana 47619
812-319-2857

1. On August 2, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On August 10, 2017, I went to the address for Glen Martin. Mr. Martin was not present at the time of my investigation; however, Tim Reibold, applicator was present. Mr. Reibold made an application to Mr. Byers' DT soybeans adjacent to Mr. Martin's Liberty soybeans. See site diagram. Mr. Reibold was not certain on the date of his application or the pesticide product he used. I handed Mr. Reibold a copy of the Pesticide Investigation Inquiry (PII) form and instructed him to complete the form and return.

Key		MAP #
2017501875	Soil 50 yds from target field	1
2017501876	Soil 5 yds from target field	2
2017501877	Soil from target field	3
2017501878	vegetation 50 yds from target field	4
2017501879	vegetation 5 yds from target field	5
2017501880	vegetation from target field	6

Site Diagram

3. On August 10, 2017, I observed leaf cupping and crinkling. See figures 1-2. Symptoms appeared to be consistent throughout the field, including a finger on the northeast corner of the Liberty soybeans. See site diagram.

Figure 1-Cupped and crinkled leaves

Figure 2-Symptoms throughout

4. On August 10, 2017, I collected a vegetation sample from Mr. Martin's non-DT soybeans to be visually analyzed by Purdue's Plant and Pest Diagnostic Lab (PPDL). In addition, I collected vegetation samples and soil to be analyzed by OISC's Residue Lab.

5. On August 12, 2017, PPDL reported the following:

Diagnosis and Recommendations

Host/Habitat	Soybean (Glycine max)
List of Diagnosis/ID(s)	
Suspected for Herbicide injury; Exposure (Abiotic disorder)	

Final Report

8-11-17
Cupping/puckering of leaves and discolored leaf tip are indicative of injury from dicamba

Joe Ikley
Extension Weed Specialist
Purdue University
915 West State Street
W. Lafayette, IN 47907
e-mail - jikley@purdue.edu
Cell - (410) 596-9091
Office - (765) 496-2121

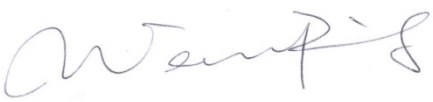
6. On November 30, 2017, OISC's Residue Lab reported the following:

Case # 2017/1171		Investigator: J. Kelley			
Sample #	**Sample Description**	**Sample Matrix**	**Amount Found (ppb)**		
			Dicamba	**DCSA**	**5-OH Dicamba**
2017-50-1875	Soil 50 yards from target field	Soil	BDL	BDL	BDL
2017-50-1876	Soil 5 yards from target field	Soil	BDL	BDL	BDL
2017-50-1877	Soil from target field	Soil	1.62	21.4	BDL
2017-50-1878	Vegetation 50 yards from target field	Vegetation	BDL	BDL	BDL
2017-50-1879	Vegetation 5 yards from target field	Vegetation	BDL	BQL	BDL
2017-50-1880	Vegetation from target field	Vegetation	*1075	10.4	6.30

PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC

*minimum amount reported due to concentration exceeded calibration curve range.

LOQ (ppb)	Soil	1	1	1
LOQ (ppb)	Vegetation	2	0.4	4

Signature		**Date**	11/30/2017

7. On January 23, 2018, I contacted Tim Reibold inquiring about his failure to return the PII handed to him on August 10, 2017. Mr. Reibold stated he would have his boss, Dewayne Byers, email me the PII and application record. On January 25, 2018, I received an emailed copy of Tim Reibold's application record; however, no PII was included. On January 25, 2018, January 30, 2018, and February 8, 2108, I sent follow-up emails requesting the completed PII. I have yet to receive a completed PII.

8. The following is information gleaned from Tim Reibold's limited application record.

   A. Application dates & times: July 1, 2017 (9:34am – 10:05am).
   B. Target field: Soybeans
   C. Application rate of Engenia: 13.39 oz.
   D. Adjuvants: Not listed
   E. Nozzles: Not listed
   F. Winds: From southwest 9.0mph
   G. Applicator: Tim Reibold
   H. Buffer Zone: Not Listed
   I. Ground speed: Not listed
   J. Boom height: Not listed
   K. Checked Registrants website before application: Not Listed
   L. Checked Field Watch before application: Not listed
   M. Surveyed site before application: Not listed

9. Wind data from Weather Underground, www.wunderground.com, from three (3) triangulated weather stations indicated the following:

   A. Owensboro-Davies County airport located 38 miles away listed wind from west, southwest at 11.5mph-16.1mph.
   B. Evanston, Indiana station (KINEVANS55) 26 miles away listed wind from south, southwest at 1.3mph-8.7mph with gust to 9.8mph.
   C. Boonville, Indiana station (KINBOONV&) 11 miles away listed wind from southwest, west, and south, southwest at 2.8mph-6.1mph with gust to 15mph.

   Wind was blowing toward Mr. Martin's Liberty soybeans based on information from all three stations.

10. Label language for Engenia states in part, "***DO NOT*** *apply when wind is blowing in the direction of neighboring specialty crops*".

Paul J. Kelley III

Paul J. Kelley
Investigator

Date: February 12, 2018

Disposition:

A. Tim Reibold was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

B. Tim Reibold was cited for violation of section 65(7) of the Indiana Pesticide Use and Application Law for refusing to make reports and supply information when required or requested by the state chemist in the course of an investigation or inspection. A civil penalty in the amount of $100.00 was assessed for this violation. In addition, the Private Applicator permit issued to Tim Reibold was suspended until such time as he complies with the records request.

C. On April 17, 2018, the requested records were sent to OISC. The suspension of Mr. Reibold's Private Applicator permit was lifted.

George N. Saxton
Compliance Officer

Draft Date: April 30, 2018
Final Date: May 3, 2018

CASE SUMMARY

Case #2017/1180

Complainant: Phillip Rexing
9077 W 650 S
Owensville, Indiana 47665
812-431-6032

Respondent: Superior Ag
7780 S. State Road 57
Oakland City, Indiana 47660
Brandon Koester Certified Applicator
812-795-2535

1. On August 7, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On August 10, 2017, I met with Phillip Rexing and we went to his soybean field located on the north side of County Road 550 South, near Mackey, Indiana. Mr. Rexing stated Superior Ag had applied a dicamba product to a soybean field located across County Road 550 South to the south of his field and he believed it may have impacted his Roundup Ready, non-dicamba tolerant (DT) beans. Mr. Rexing informed me he had not applied any dicamba products this year on any of his farm fields and had only made a post-emergent application of Roundup PowerMax (EPA Reg. #524-549; active ingredient: glyphosate) to the soybeans in this field on June 15, 2017, and no symptoms were noticed at that time. Mr. Rexing indicated he first noticed the symptoms on July 31, 2017.

3. During my on-site investigation I did the following:
    a) Looked for but did not observe, nor learn of from Mr. Rexing, any other dicamba applications made in the areas adjacent to his soybean field.
    b) Observed and photographed what appeared to be exposure symptoms (figure #1 below) to a growth regulator type of herbicide such as dicamba. These symptoms were more pronounced on the south side of Mr. Rexing's field closest to the target field; however, symptoms were notable throughout the field.
    c) Collected soybean vegetation from Mr. Rexing's field and a vegetation and soil sample from the target soybean field to the south.
    d) The graph below (Illustration #1) shows the field locations in question and areas where samples were obtained. Wind direction at the time of application is also noted in the illustration and explained later in this report.

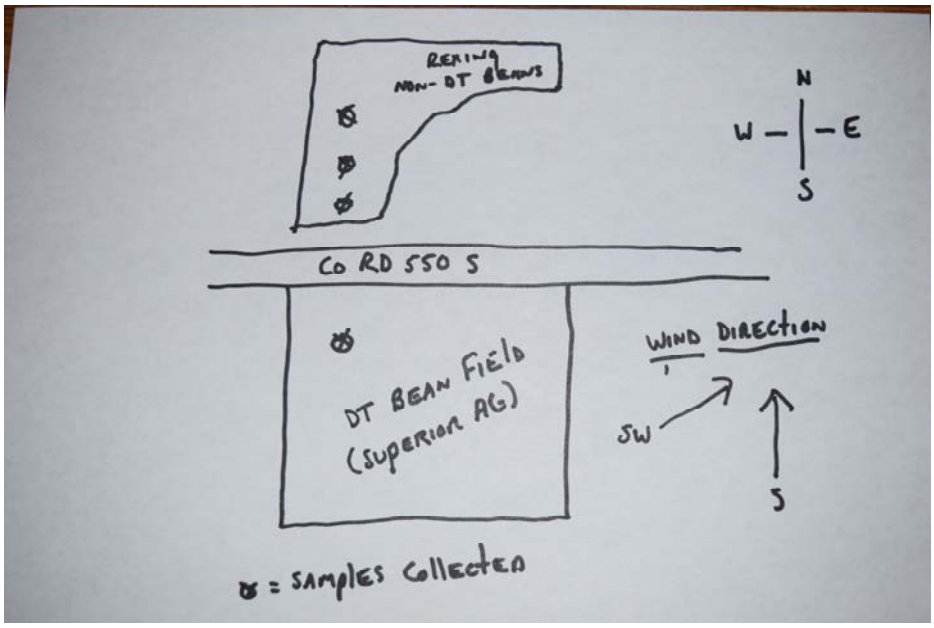


Illustration #1

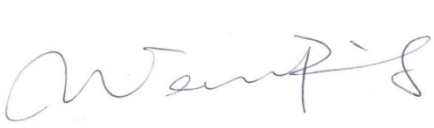
Figure #1

4. I contacted Michael Nurrenbern, Facility Manager for Superior Ag in Oakland City, Indiana, and spoke to him about the target field in question. Mr. Nurrenbern indicated no buffer had been used (other than the gravel road between fields), but did not believe the winds were an issue at the time of application. Mr. Nurrenbern informed me they had applied Engenia (EPA Reg. #7969-345; active ingredient: dicamba) and Roundup PowerMax on July 12, 2017. I informed Mr. Nurrenbern he would be receiving a Pesticide Investigation Inquiry (PII) form to be completed by the applicator and returned. The form was returned and indicated the following:
    a) Application date & time: July 12, 2017, between 1:15pm and 3:00pm (CDT).
    b) Target Field: soybean field directly south of Mr. Rexing's bean field
    c) Application rate of Engenia: 12.8oz per acre
    d) Adjuvants: Ridion
    e) Nozzles: TTI 04
    f) Winds: from the southwest at 13 miles per hour (mph)
    g) Applicator: Brandon Koester

h) Buffer used: 50 feet (gravel road/ditch banks)
i) Ground speed: 10 mph
j) Boom Height: 24 inches
k) Checked Registrants website before application: yes
l) Checked Field Watch before application: no
m) Survey site before application: yes

5. A check of the historical weather conditions at the date and time of Mr. Koester's application were reported from the following weather stations as follows:
   - Evansville Indiana Airport (approximately 17 miles south-CDT): Winds were reported from the south/southwest (blowing toward Mr. Rexing's bean field during part of the application time frame), at 12.7 mph. No gusts were reported during the application period.
   - Huntingburg Indiana Airport (approximately 26 miles east-CDT): Winds were reported from the south/southwest (blowing toward Mr. Rexing's bean field during part of the application time frame), between 11.5 mph and 12.7 mph. A gust of 17.3 mph was reported at 2:56pm (CDT) during the application time period.
   - Mt. Vernon Illinois Airport (approximately 27 miles –northwest-CDT): Winds were reported from the south/southwest (blowing toward Mr. Rexing's bean field during part of the application time frame), between 12.7 mph and 15 mph. Gusts were reported between 17.3 mph and 18.4 mph.

6. On August 11, 2017, the collected vegetation and soil samples were turned into the Indiana State Chemist Office for analysis. The results were reported back on December 4, 2017, and indicated the following:

Case # 2017/1180		**Investigator: S. Farris**			
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**		
			Dicamba	DCSA	5-OH Dicamba
2017-51-0183	Soybean vegetation 50 feet north of target bean field	Vegetation	BDL	BQL	BDL
2017-51-0184	Soybean vegetation 600 feet north of target bean field	Vegetation	BDL	BDL	BDL
2017-51-0185	Soil from target field 60 feet south of bean field	Soil	4.17	*524	BDL
2017-51-0186	Soil from target bean 250 feet south of bean field	Soil	11.9	*219	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC *Concentration exceeded calibration curve and minimum amount reported					
LOQ (ppb)	Vegetation		2	1	2
LOQ (ppb)	Soil		2	1	2
Signature		**Date**	12/4/17		

7. The above lab results did not detect the presence of any dicamba.

8. The Engenia Supplemental Label stated the following:

   - *"The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available."*
   - *"If wind speed is between 10 to 15 mph, DO NOT apply Engenia when wind is blowing toward neighboring sensitive crops."*
   - *"If wind speed is above 15 mph, DO NOT apply Engenia."*

Scott M. Farris — Date: December 21, 2017
Investigator

Disposition: Brandon Koester was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry website before application.

Brandon Koester was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $250.00 was assessed for this violation.

Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton — Draft Date: February 7, 2018
Compliance Officer — Final Date: March 22, 2018

CASE SUMMARY

Case #2017/1188

Complainant: Bo Napier
8638 S. SR 62
Nabb, Indiana 47147
812-701-7801

Respondent: Crop Production Services (CPS) — Licensed Business
Bart Barnett — Licensed Applicator
71 S. SR 3
Lexington, Indiana 47138
812-752-4951

1. On August 9, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On August 21, 2017, I met with Bo Napier. Mr. Napier stated his non-DT soybeans have crinkled, cupped leaves. Mr. Napier's field is located west of Lexington, Indiana on the north side of State Road 356. See site diagrams. I observed crinkled, cupped leaves. Symptoms on the field off State Road 356 appeared to be heavier closer to State Road 356. See figures 1-2.

Key		Map #
2017501899	Soil 50 yds from target field – BN1	1
2017501900	Soil 10 yds from target field – BN1	2
2017501901	Soil from target field – BN1	3
2017501902	Vegetation 50 yds from target field – BN1	4
2017501903	Vegetation 10 yds from target field – BN1	5
2017501904	Vegetation from target field – BN1	6

Site diagram

Figure 1-Crinkled leaves (356 field)

Figure 2-Crinkled & cupped (356 field)

3. On August 21, 2017, I collected a vegetation sample to be visually analyzed by Purdue's Plant and Pest Diagnostic Lab (PPDL). In addition, I collected soil and vegetation samples to be analyzed by OISC's Residue Lab.

4. On August 21, 2017, I met with Chris Smith at CPS in Lexington, Indiana. Mr. Smith provided me with CPS applications records for the two (2) fields sprayed adjacent to Bo Napier's soybeans. I requested to Mr. Smith to make copies of a blank Pesticide Investigation Inquiry (PII) form I provided for the other cases involving this CPS location.

5. On August 22, 2017, PPDL reported the following:

Diagnosis and Recommendations

Host/Habitat	Soybean (Glycine max)
List of Diagnosis/ID(s)	
Suspected for Herbicide injury; Exposure (Abiotic disorder)	
Confirmed for Soybean downy mildew (Peronospora manshurica)	

Final Report

8-22-17
Cupping/puckering of leaves and discolored leaf tip are indicative of injury from dicamba.

Joe Ikley
Extension Weed Specialist
Purdue University
915 West State Street
W. Lafayette, IN 47907
e-mail - jikley@purdue.edu
Cell - (410) 596-9091
Office - (765) 496-2121
8-22-17
Soybean Downy Mildew, a fungal disease, was confirmed to be associated with the small, yellow spots visible on the top side of the leaves.

Gail Ruhl
Plant Disease Diagnostician

6. Dated August 25, 2017, I received Mr. Barnett completed PII. The following are answers to questions from the PII.

   A. Application dates & times: June 21, 2017 (10:15am- 12:00pm)
   B. Target field: DT-soybeans
   C. Application rate of Xtendimax: 30 oz. per acre
   D. Adjuvants: Strike force and Reign
   E. Nozzles: ULD 05; 30 PSI
   F. Winds: 6/21 – 5mph southwest (blowing toward Mr. Napier's non-DT soybeans)
   G. Applicator: Bart Barnett
   H. Buffer Zone: PII lists "yes, 100ft"
   I. Ground speed: 14 mph
   J. Boom height: Not asked on this PII
   K. Checked Registrants website before application: Did not answer
   L. Checked Field Watch before application: Did not answer
   M. Surveyed site before application: no

7. On November 11, 2017, OISC's Residue Lab reported the following:

Case # 2017/1188		**Investigator: J. Kelley**			
Sample #	**Sample Description**	**Sample Matrix**	**Amount Found (ppb)**		
			Dicamba	**DCSA**	**5-OH Dicamba**
2017-50-1899	Soil 50 yards from target field – BN1	Soil	BDL	BDL	BDL
2017-50-1900	Soil 10 yards from target field – BN1	Soil	BDL	BDL	BDL
2017-50-1901	Soil from target field – BN1	Soil	BQL	BQL	BDL
2017-50-1902	Vegetation 50 yards from target field – BN1	Vegetation	BDL	BDL	BDL
2017-50-1903	Vegetation 10 yards from target field – BN1	Vegetation	BDL	BDL	BDL
2017-50-1904	Vegetation from target field – BN1	Vegetation	BDL	BDL	BDL
2017-50-1905	Soil 50 yards from target field – BN2	Soil	BDL	BDL	BDL
2017-50-1906	Soil 30 yards from target field – BN2	Soil	BDL	BDL	BDL
2017-50-1907	Soil from target field – BN2	Soil	7.65	29.6	BDL
2017-50-1908	Vegetation 50 yards from target field – BN2	Vegetation	BDL	BDL	BDL
2017-50-1909	Vegetation 30 yards from target field – BN2	Vegetation	BDL	BDL	BDL
2017-50-1910	Vegetation from target field – BN2	Vegetation	BDL	BDL	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Soil		1	1	1
LOQ (ppb)	Vegetation		2	0.4	4
Signature			**Date**	11/30/2017	

8. Wind data from Weather Underground, www.wunderground.com, indicated:

   A. Wind data on June 21, 2017, from the weather station located at the Bowman airport, 45 miles away, in Louisville, Kentucky, registered wind out of the south, southwest at

9.2mph. This is consistent to Mr. Barnett's PII. The wind was blowing toward Mr. Napier's non-DT soybeans.

9. Label language for Xtendimax states in part:
   A. "*DO NOT tank mix any product with XtendiMaxTM With VaporGripTM Technology unless: 1. You check the list of tested products found not to adversely affect the offsite movement potential of XtendiMaxTM With VaporGripTM Technology at www.xtendimaxapplicationrequirements.com no more than 7 days before applying XtendiMaxTM With VaporGripTM Technology…*"
   B. "*DO NOT APPLY this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops, including but not limited to, commercially grown tomatoes and other fruiting vegetables (EPA crop group 8), cucurbits (EPA crop group 9), and grapes.*"
   C. "*Before making an application, the applicator must survey the application site for neighboring non-target susceptible crops. The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site.*"

10. It appears from Mr. Barnett's answers to the PII, he failed to check the manufacturer's website, Driftwatch website, and survey the site prior to application, or make sure wind was not blowing toward sensitive sites. Furthermore, Mr. Barnett did not answer all questions on the PII.

Paul J. Kelley III

Paul J. Kelley
Investigator

Date: January 29, 2018

Disposition: Bart Barnett was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the site, checking registrant's website and checking local sensitive crop registry before application.

Bart Barnett was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when the wind is blowing towards a sensitive crop. A civil penalty in the amount of $250.00 was assessed for this violation.

Bart Barnett was cited for violation of section 65(6) of the Indiana Pesticide Use and Application Law for failure to comply with an Order of the state chemist by not providing all of the requested information. A civil penalty in the amount of $250.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 8, 2018
Final Date: April 17, 2018

CASE SUMMARY

Case #2017/1190

Complainant: Larry Thatcher
3790 Beech Church Road
Coal City, Indiana 47427
812-829-8315 cell
812-859-4220 home

Respondent(s): Earl Worland, Jr. Private Applicator
5254 Worland Road
Coal City, Indiana 47427
812-859-3830

1. On August 10, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On August 11, 2017, I met with the complainant. I identified myself verbally and with OISC credentials. I explained the role of OISC in drift investigations and issued a Notice of Inspection. The complainant told me he noticed the "injury" to his soybean field about a month ago and the reason he did not report it at that time was that the local Co-Op personnel told him that the beans would "grow out of it". The soybeans did grow nicely however the complainant had his beans surveyed by crop specialists and they allegedly showed him how there was no pod development along the top half of his plants (fig. 1&2).

3. I followed the complainant to his fields located off Worland Rd. The affected field in question is "L" shaped and has dicamba tolerant soybeans on three sides of it (fig. 3 center right/yellow).


Fig. 1


Fig. 2

- Figure 1 is the bottom portion of the soybean plant with a small pod
- Figure 2 is the top portion of the same plant with tiny blossoms and no pod.

4. The soybeans had leaves on the bottom portion of the plant, which were puckered, cupped and discolored on the tips and edges (center of fig. 1). I collected the plant in figs 1&2 for submission to the Purdue Plant and Pest Diagnostic Laboratory (PPDL). The fields to the north/south and west of the complainant were planted in dicamba tolerant soybeans and post emergent applications of two different dicamba products had been made. One of the owners of those fields was provided to me as Mr. Earl Worland. I was able to get the information for the pesticide products used. I delivered a Pesticide Investigation Inquiry (PII) to Mr. Worland. I instructed him to fill out the PII and call me when it was complete and ready to be picked up. I noted the following for the dates of the applications and products used:

Mr. **Earl Worland Jr**. made a pesticide spray application on **June 5, 2017 from 1:15pm to 3:00pm** with the following pesticide products:

- *Engenia, EPA Reg. #7969-345, active ingredient= dicamba*
- *Makaze, EPA Reg. #34704-890, active ingredient=glyphosate*
- *Metribuzin 75, EPA Reg. #34704-876, active ingredient=metribuzin*
- *Sharpen, EPA Reg. #7969-278, active ingredient=saflufenacil*

5. The **complainant** had a post emergent pesticide spray application on **July 12, 2017** made by the Clay City Co-op with the following pesticide products:

   - Liberty 280 SL, EPA Reg. #264-829, active ingredient=glufosinate
   - Section Three, EPA Reg. #66330-414-1381, active ingredient=clethodim

   I spoke to the Manager of Clay City Co-op and he told me the sprayer used in the application for Mr. Thatcher did not have any dicamba products used in it in 2017.

6. I collected swabs and vegetation from the complainant's field and swabs, vegetation and soil from the suspect fields. The samples collected in the complainant's field were 15 paces off the dividing dirt road and 175 paces into the field from the dirt road. The two suspect fields were designated Worland 1 and Worland 2. In the Worland 1 field, I collected samples 17 paces and 60 paces into the field from the dirt road dividing the field from the complainant's field. In Worland 2, I collected the samples mid field and 15 paces and 70 paces from the dirt road that separated the field from complainant's field. The samples were tagged and transported to the OISC Residue Laboratory for analysis. The PPDL samples was secured and transported to the PPDL for analysis.

7. I completed a field sketch of the fields involved and included the sampling data. The diagram which follows (fig.3) is taken from that field sketch. The weather wind direction was also added.

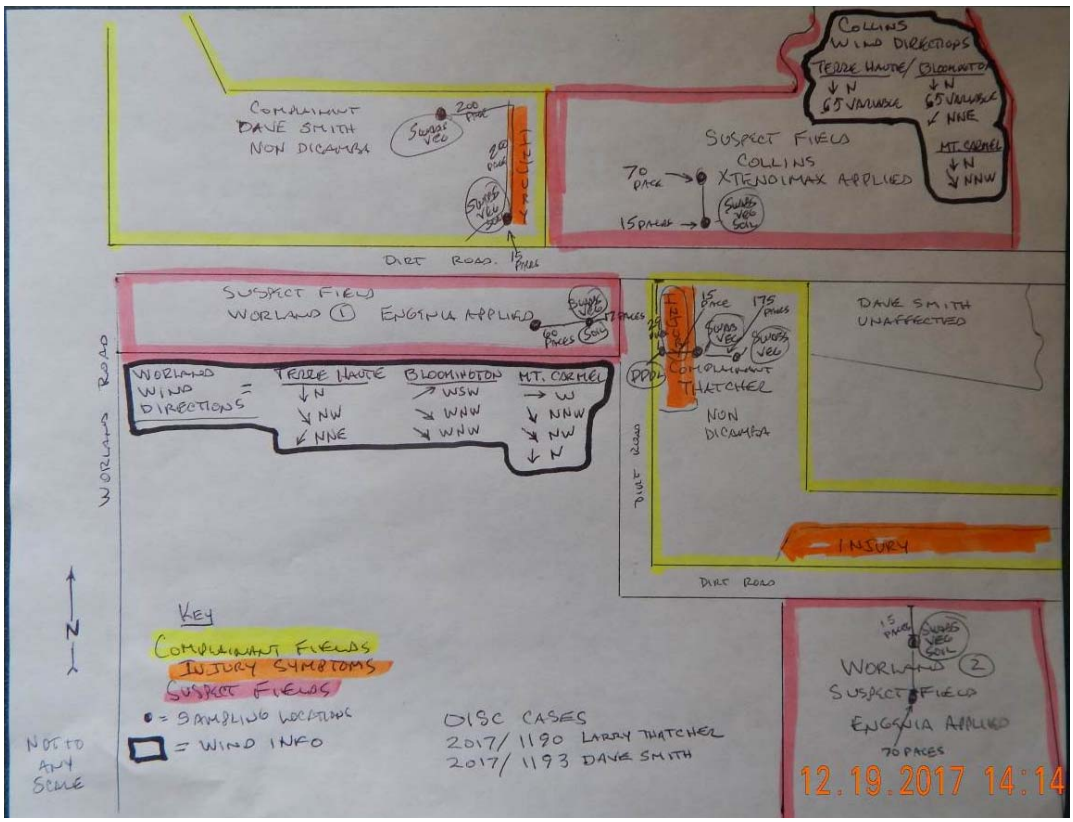


Fig. 3

8. I received a phone call from both Mr. Worland informing me his PII was complete.

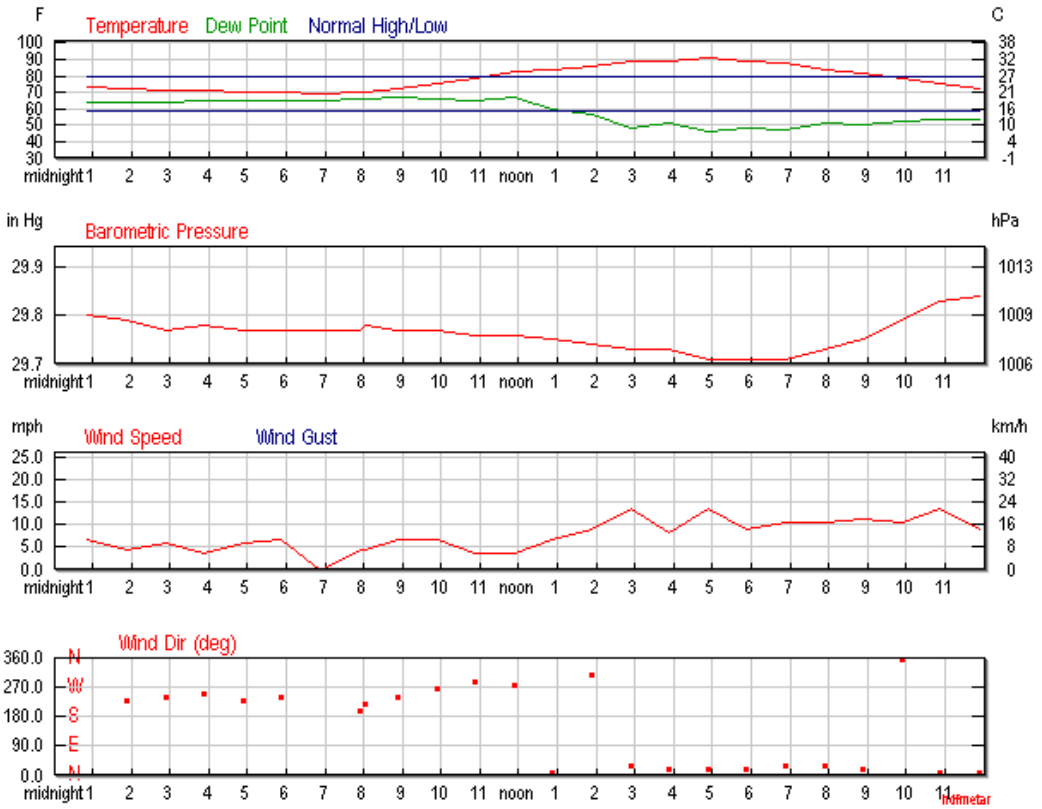
   a) Application date & time: **6-5-17 from 1:15pm to 3:00pm**
   b) Target Field: **Earl Worland Sr**.
   c) Application rate of *Engenia*: **12.5 oz per acre**
   d) Adjuvants: **None**
   e) Nozzles: **TTI 11004**
   f) Winds on June 5, 2017: **from the North at 4-5 mph by Applicator Estimate.**
   g) Applicator: **Earl Worland Jr.**
   h) Buffer Used: **No**
   i) Ground Speed: **6.5 mph**
   j) Boom Height: **16-18 inches**
   k) Checked Registrants website before application: **No**
   l) Checked Field Watch before application: **No**
   m)Surveyed site before application: **Yes**

9. The triangulated weather history data that follows was taken from:
   www.weatherunderground.com

   The locations for the data were Coal City, which defaults to Terre Haute Indiana, Bloomington Indiana and Vincennes, Indiana. The history for Vincennes defaults to Mount Carmel Indiana. The first three weather histories will pertain to the Worland applications in this case.

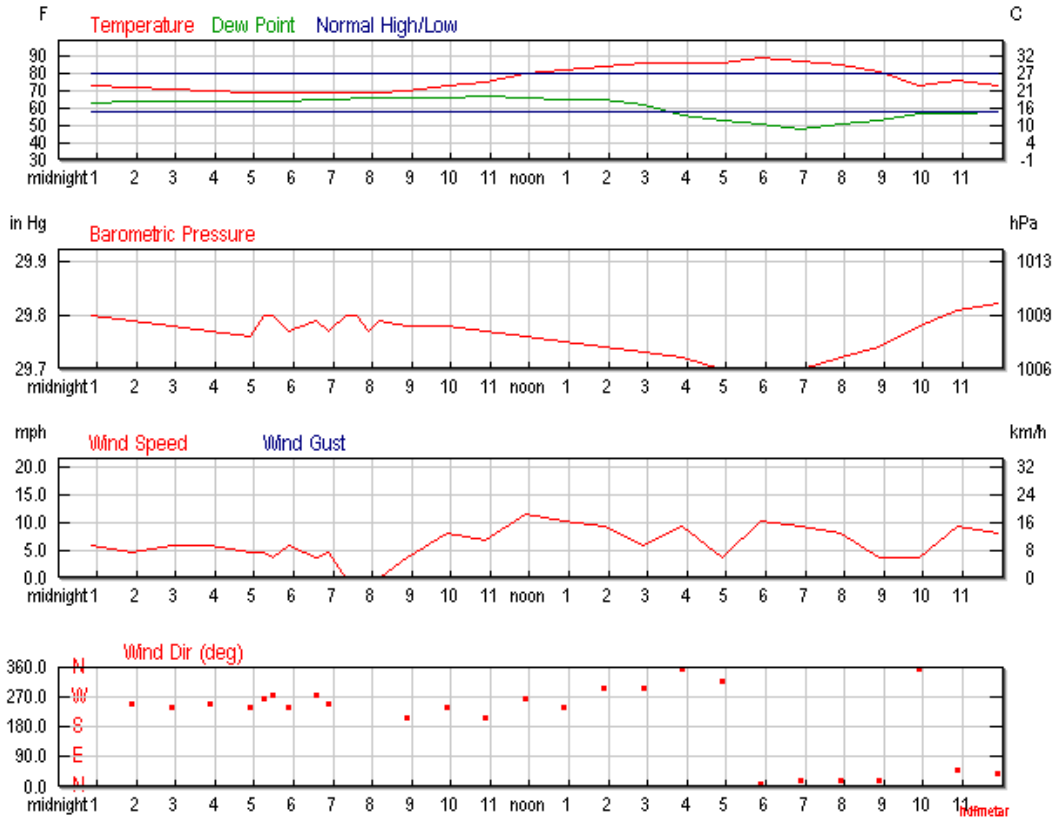
   The chart and graph, which follow, are for **Terre Haute Indiana** on **June 5, 2017. 1:15PM TO 3:00PM.** Terre Haute is approximately 20 miles NW of Coal City.

DATE	TIME	WIND DIRECTION	WIND SPEED
6-5-17	12:53pm	North	6.9 mph gusting to 16.1 mph
6-5-17	1:53pm	NW	9.2 mph
6-5-17	2:53pm	NNE	13.8 mph



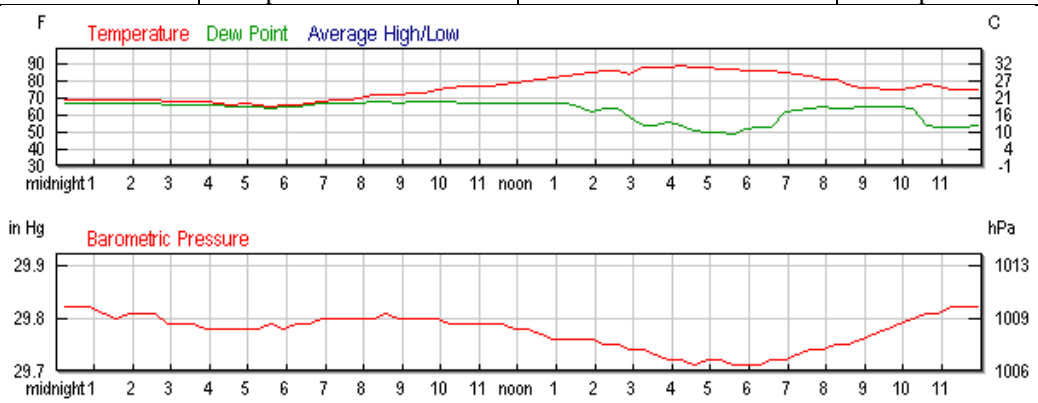
The chart and graph, which follow, are for **Bloomington Indiana** on **June 5, 2017 from 1:15pm to 3:00 pm.** Bloomington is approximately 30 miles SE of Coal City.

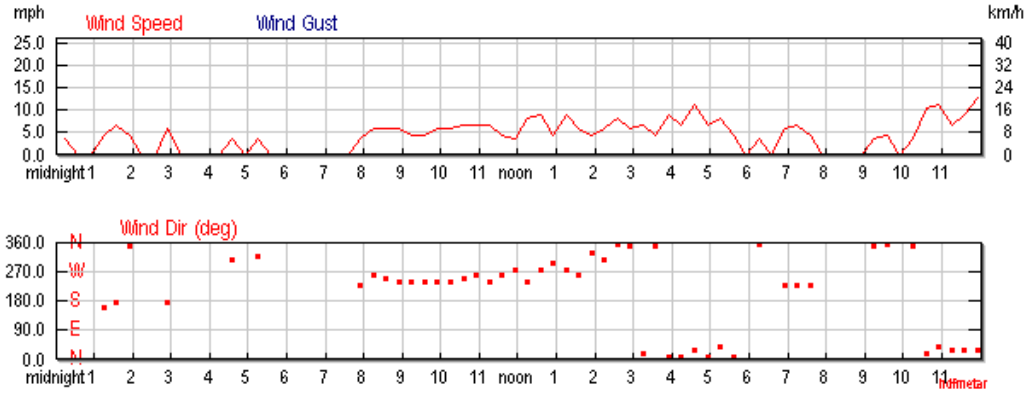
DATE	TIME	WIND DIRECTION	WIND SPEED
6-5-17	12:53pm	WSW	10.4 mph
6-5-17	1:53pm	WNW	9.2 mph
6-5-17	2L53pm	WNW	5.8 mph



The chart and graph which follow are for **Mount Carmel Illinois** on **6-5-17 from 1:15 pm to 3:00 pm.** Mount Carmel Illinois is approximately 45 miles SW of Coal City.

DATE	TIME	WIND DIRECTION	WIND SPEED
6-5-17	1:15pm	West	9.2 mph
6-5-17	1:35pm	West	5.8 mph
6-5-17	1:55pm	NNW	4.6 mph
6-5-17	2:15pm	NW	5.8 mph
6-5-17	2:35pm	North	8.1 mph
6-5-17	2:55pm	North	5.8 mph





10. On August 14, 2017, I received the final report from PPDL. The report reads in part:

    "*Cupping and puckering on leaves and discolored leaf tip are indicative of injury from dicamba. Depending on weather conditions after exposure, plant regrowth and recovery could have been delayed, leaving the plants at a younger growth stage than plants that were not exposed to dicamba*".

    Joe Ikley
    Extension Weed Specialist
    Purdue University

11. On December 1, 2017, I received an e-mail with the final report from the OISC Residue Laboratory for the samples, which were analyzed in this case. The chart that follows is a copy and paste of that final report.

Case # 2017/1190 (Linked to 2017/1193 & 2017/1303)			**Investigator: B. Baker**		
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**		
			Dicamba	DCSA	5-OH Dicamba
2017-32-3939	Vegetation sample from center of field	Vegetation	BDL	BDL	BDL
2017-32-3940	Vegetation sample from west edge of field	Vegetation	BDL	BDL	BDL
2017-32-3955	Vegetation -Suspect Worland (1) Buffer	Vegetation	BDL	BQL	BDL
2017-32-3956	Vegetation -Suspect Worland (1) App. Area	Vegetation	BDL	BQL	BDL
2017-32-3957	Vegetation -Suspect Worland (2) Buffer	Vegetation	BDL	BQL	BDL
2017-32-3958	Vegetation -Suspect Worland (2) App. area	Vegetation	BDL	BDL	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Vegetation		4	0.4	4
Signature		**Date**	12/1/17		

The charted results do not indicate the presence of dicamba in the complainant's samples and a small measure in the two respondent's fields. (BQL and 6.47ppb reading). There must be a consideration of the time between the post-emergent pesticide spray applications of the dicamba product Engenia and the date of sampling. The dicamba application date was June 5. The complainant field sampling was done on August 11, 2017. In looking for the source of the injury symptoms on the complainant's soybeans the PPDL report reads in part the injury symptoms observed were "indicative of injury from dicamba". The post emergent pesticide spray application to the complainant's soybeans did not contain any dicamba or other pesticide product that would injure the soybeans.

12. In this case, respondent **Earl Worland** used **Engenia** in his pesticide spray application. The prevailing wind direction (all three weather stations in paragraph 8) on the date of the application has some West element to it, i.e. West, NW, WSW, WNW, NNW, NW. The respondent's field is east of the Worland field and separated only by a dirt road (fig.3).

    The label/supplemental label for Engenia reads *in part*:

    ***"DO NOT** apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption."*

    ***"DO NOT** apply when wind is blowing in the direction of neighboring specialty crops."*

    Tank Mix Instructions:
    DO NOT tank mix any product with **Engenia** unless:
    1. You check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia;

    "The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available."

    In Mr. Worland's PII responses, he indicates he *did not* check the registrant's website and he did not check sensitive crop registry.

Brian P. Baker
Investigator

Date: December 19, 2017

Disposition: Earl Worland Jr. was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry and registrant's website before application.

Earl Worland Jr. was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when spray drift may occur. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: February 28, 2018
Final Date: April 9, 2018

CASE SUMMARY

Case #2017/1195

Complainant: Phillip Rexing
9077 W 650 S
Owensville, Indiana 47665
812-431-6032

Respondent: Clyde Lee Viers — Private Applicator
1243 S 450 E
Francisco, Indiana 47649
812-455-3662

1. On August 7, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On August 10, 2017, I met with Phillip Rexing and we went to his soybean field located on the west side of County Road 1000 East, near Mackey, Indiana. Mr. Rexing stated Clyde Viers had applied a dicamba product to a soybean field located to the north of his bean field and believed it may have impacted his Roundup Ready, non-dicamba tolerant (DT) beans. Mr. Rexing informed me he had not applied any dicamba products this year on any of his farm fields and had only made a post-emergent application of Roundup PowerMax (EPA Reg. #524-549; active ingredient: glyphosate) to the soybeans in this field on June 15, 2017, and no symptoms were noticed at that time. Mr. Rexing indicated he first noticed the symptoms on July 31, 2017.

3. During my on-site investigation I did the following:
    a) Looked for but did not observe, nor learn of from Mr. Rexing, any other dicamba applications made in the areas adjacent to his soybean field.
    b) Observed and photographed what appeared to be exposure symptoms (figure #1 below) to a growth regulator type of herbicide such as dicamba. These symptoms were more pronounced on the north side of Mr. Rexing's field closest to the target field, however, symptoms were notable throughout the field.
    c) Collected soybean vegetation from Mr. Rexing's field and a vegetation and soil sample from the target soybean field to the north.
    d) The graph below (Illustration #1) shows the field locations in question and areas where samples were obtained. Wind direction at the time of application is also noted in the illustration and explained later in this report.

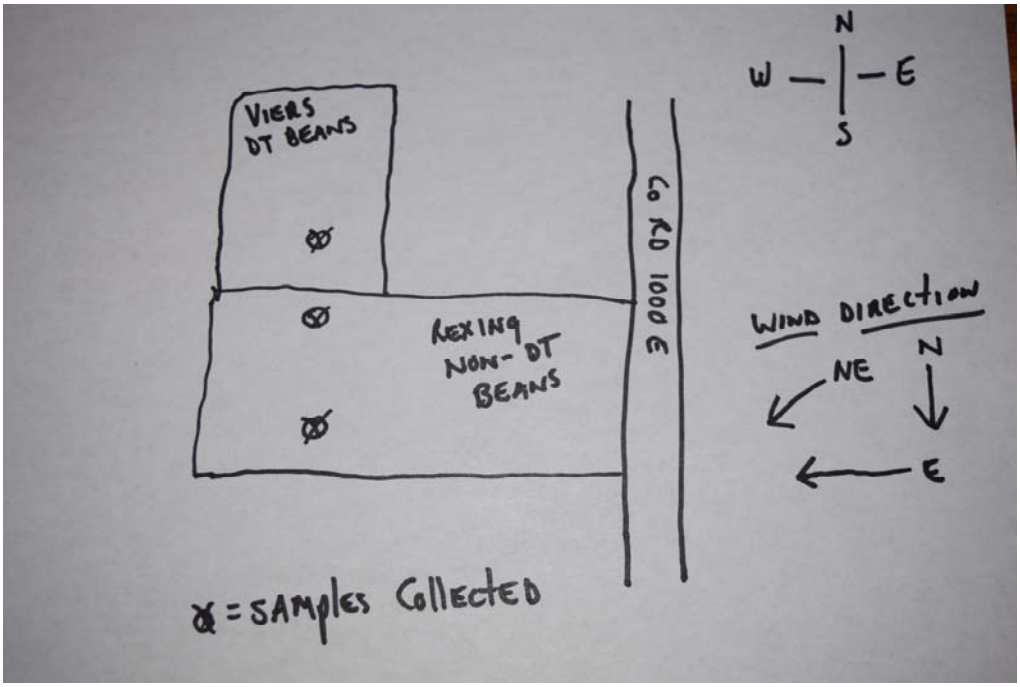


Illustration #1

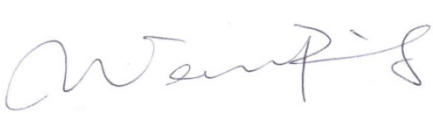
Figure #1

4. I contacted Clyde Viers and spoke to him about the target field in question. Mr. Viers indicated no buffer had been used, but did not believe the winds were an issue at the time of application. Mr. Viers informed me they had applied Engenia (EPA Reg. #7969-345; active ingredient: dicamba) and Roundup Tomahawk (EPA Reg. #33270-18; active ingredient: glyphosate) on July 3, 2017. I informed Mr. Viers he would be receiving a Pesticide Investigation Inquiry (PII) form to be completed and returned. The form was returned on August 28, 2017, and indicated the following:
    a) Application date & time: July 3, 2017, between 6:30pm and 7:30pm (CDT).
    b) Target Field: soybean field directly north of Mr. Rexing's bean field
    c) Application rate of Engenia: 12.8oz per acre
    d) Adjuvants: Iconic
    e) Nozzles: TTI 04

f) Winds: from the northwest at 3 to 4 miles per hour (mph) – (blowing toward Mr. Rexing's bean field).
g) Applicator: Clyde Viers
h) Buffer used: no
i) Ground speed: 10 mph
j) Boom Height: 24 inches
k) Checked Registrants website before application: yes
l) Checked Field Watch before application: no
m) Survey site before application: yes

5. A check of the historical weather conditions at the date and time of Mr. Koester's application were reported from the following weather stations as follows:
   - Evansville Indiana Airport (approximately 16 miles south-CDT): Winds were reported from the east/northeast (blowing toward Mr. Rexing's bean field during part of the application time frame), at 4.6 mph. No gusts were reported during the application period.
   - Huntingburg Indiana Airport (approximately 23 miles east-CDT): Winds were reported from the north/northeast (blowing toward Mr. Rexing's bean field), at 3.5mph. No gusts reported.

6. On August 11, 2017, the collected vegetation and soil samples were turned into the Indiana State Chemist Office for analysis. The results were reported back on December 4, 2017, and indicated the following:

Case # 2017/1195		**Investigator: S. Farris**			
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**		
			Dicamba	DCSA	5-OH Dicamba
2017-51-0187	Soybean vegetation 20 feet south of target bean field	Vegetation	BDL	BDL	BDL
2017-51-0188	Soybean vegetation 800 feet south of target bean field	Vegetation	BDL	BDL	BDL
2017-51-0189	Soil from 40 feet north in target bean field	Soil	4.50	71.0	BDL
2017-51-0190	Soil from 200 feet north in target bean field	Soil	4.26	58.8	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Vegetation		2	1	2
LOQ (ppb)	Soil		2	1	2
Signature		**Date**	12/4/17		

7. The above lab results did not detect the presence of any dicamba.

8. The Engenia Supplemental Label stated the following:

   - *"The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available."*
   - *"DO NOT apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption."*
   - *"DO NOT apply when the wind is blowing in the direction of neighboring specialty crop."*

Scott M. Farris — Date: December 24, 2017
Investigator

Disposition: Clyde Lee Viers was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry before application.

Clyde Lee Viers was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton — Draft Date: February 13, 2018
Compliance Officer — Final Date: March 22, 2018

CASE SUMMARY

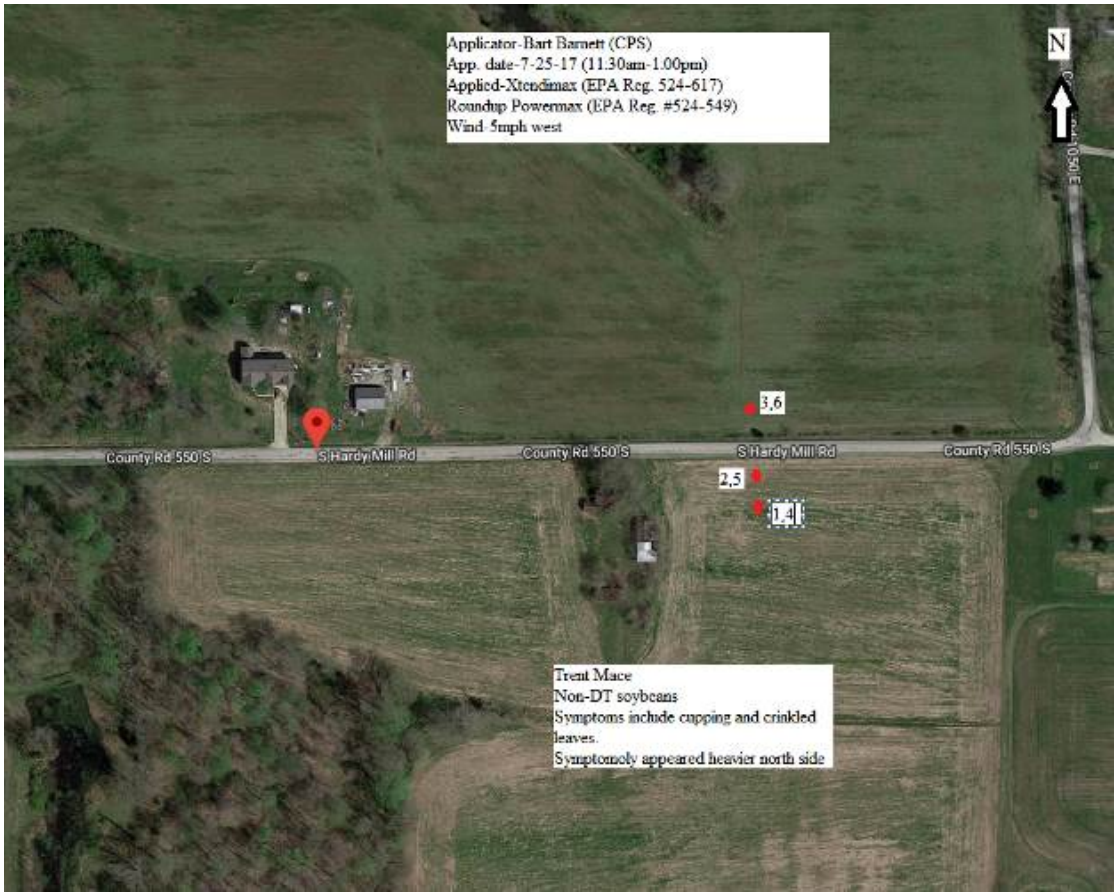
Case #2017/1208

Complainant: Trent Mace
4152 S Concord Road
Lexington, Indiana 47138
812-595-5361

Respondent: Crop Production Services (CPS) — Licensed Business
Bart Barnett — Licensed Applicator
71 S. SR 3
Lexington, IN 47138
812-752-4951

1. On August 15, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On August 21, 2017, I went to a non-DT soybean field of Trent Mace south Hardy Mill road in Nabb, Indiana. See site map. I observed pesticide exposure symptoms throughout field. However, symptoms appeared heavier on the north side adjacent to field sprayed with dicamba by CPS. See figures 1-2.



2017501887	Soil 50 yds from target field – TM1	1
2017501888	Soil 10 yds from target field – TM1	2
2017501889	Soil from target field – TM1	3
2017501890	Vegetation 50 yds from target field – TM1	4
2017501891	Vegetation 10 yds from target field – TM1	5
2017501892	Vegetation from target field – TM1	4

Site diagram

Figure 1-Crinkled leaves

Figure 2-Crinkled & cupped

3. On August 21, 2017, I collected a vegetation sample to be visually analyzed by Purdue's Plant and Pest Diagnostic Lab (PPDL). In addition, I collected soil and vegetation samples to be analyzed by OISC's Residue Lab.

4. On August 21, 2017, I met with Chris Smith at CPS in Lexington, Indiana. Mr. Smith provided me with CPS applications records for the two (2) fields sprayed adjacent to Trent Mace's soybeans. I requested to Mr. Smith to make copies of a blank Pesticide Investigation Inquiry (PII) form I provided for the other cases involving this CPS location.

5. On August 22, 2017, PPDL reported the following:

Diagnosis and Recommendations

Host/Habitat	Soybean (Glycine max)
List of Diagnosis/ID(s)	
Suspected for Herbicide injury; Exposure (Abiotic disorder)	
Confirmed for Soybean downy mildew (Peronospora manshurica)	

Final Report

8-22-17
Cupping/puckering of leaves and discolored leaf tip are indicative of injury from dicamba.

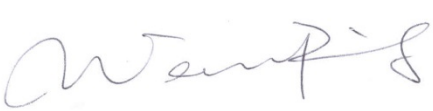
Joe Ikley
Extension Weed Specialist
Purdue University
915 West State Street
W. Lafayette, IN 47907
e-mail - jikley@purdue.edu
Cell - (410) 596-9091
Office - (765) 496-2121
8-22-17
Soybean Downy Mildew, a fungal disease, was confirmed to be associated with the small, yellow spots visible on the top side of the leaves.

Gail Ruhl
Plant Disease Diagnostician

6. Dated August 25, 2017, I received Mr. Barnett completed PII. The following are answers to questions from the PII.

   A. Application dates & times: 7/25/17 (11:30am- 1:00pm)
   B. Target field: DT-soybeans
   C. Application rate of Xtendimax: 30 oz. per acre
   D. Adjuvants: Strike force and Reign
   E. Nozzles: ULD 05; 30 PSI
   F. Winds: 7/25 – 5mph west
   G. Applicator: Bart Barnett
   H. Buffer Zone: PII lists "yes, 50ft"
   I. Ground speed: 14 mph
   J. Boom height: Not asked on this PII
   K. Checked Registrants website before application: Did not answer on PII
   L. Checked Field Watch before application: Did not answer on PII
   M. Surveyed site before application: Did not answer on PII

7. On December 4, 2017, OISC's Residue Lab reported the following:

Case # 2017/1208		**Investigator: J. Kelley**			
Sample #	**Sample Description**	**Sample Matrix**	**Amount Found (ppb)**		
			Dicamba	**DCSA**	**5-OH Dicamba**
2017-50-1887	Soil 50 yards from target field – TM1	Soil	BDL	BDL	BDL
2017-50-1888	Soil 10 yards from target field – TM1	Soil	BDL	BDL	BDL
2017-50-1889	Soil from target field – TM1	Soil	1.84	32.0	BDL
2017-50-1890	Vegetation 50 yards from target field – TM1	Vegetation	BDL	BDL	BDL
2017-50-1891	Vegetation 10 yards from target field – TM1	Vegetation	BDL	BQL	BDL
2017-50-1892	Vegetation from target field – TM1	Vegetation	BDL	13.2	BDL
2017-50-1893	Soil 50 yards from target field – TM2	Soil	BDL	BDL	BDL
2017-50-1894`	Soil 10 yards from target field – TM2	Soil	BDL	BDL	BDL
2017-50-1895	Soil from target field – TM2	Soil	6.14	74.3	BDL
2017-50-1896	Vegetation 50 yards from target field – TM2	Vegetation	BDL	BDL	BDL
2017-50-1897	Vegetation 10 yards from target field – TM2	Vegetation	BDL	BQL	BDL
2017-50-1898	Vegetation from target field – TM2	Vegetation	BDL	47.2	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Soil		1	1	1
LOQ (ppb)	Vegetation		2	0.4	4
Signature			**Date**	12/4/2017	

8. Wind data from Weather Underground, www.wunderground.com, indicated:

   A. Wind data on July 25, 2017, from the weather station located at the Bowman airport, 45 miles away, in Louisville, Kentucky, registered wind variable and east, northeast at 4.6mph-8.1mph.
   B. Wind data from other weather stations were inconclusive and did not corroborate with the Bowman airport data.

9. Label language for Xtendimax states in part:
   A. "*DO NOT tank mix any product with XtendiMaxTM With VaporGripTM Technology unless: 1. You check the list of tested products found not to adversely affect the offsite movement potential of XtendiMaxTM With VaporGripTM Technology at www.xtendimaxapplicationrequirements.com no more than 7 days before applying XtendiMaxTM With VaporGripTM Technology…*"
   B. "*Before making an application, the applicator must survey the application site for neighboring non-target susceptible crops. The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site.*"

10. It appears from Mr. Barnett's answers to the PII, he failed to check the manufacturer's website, Driftwatch website, or survey the site prior to application. Furthermore, Mr. Barnett did not answer all questions on the PII.

Paul J. Kelley III

Paul J. Kelley — Date: January 29, 2018
Investigator

Disposition: Bart Barnett was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the site, checking registrant's website and checking local sensitive crop registry before application.

Bart Barnett was cited for violation of section 65(6) of the Indiana Pesticide Use and Application Law for failure to comply with an Order of the state chemist by not providing all of the requested information. A civil penalty in the amount of $250.00 was assessed for this violation.

George N. Saxton — Draft Date: March 8, 2018
Compliance Officer — Final Date: May 3, 2018

CASE SUMMARY

Case #2017/1226

Complainant: Chris Winiger
7811 S. Happe Road
Evansville, Indiana 47712
812-204-9212

Respondent: Joseph E. Steinkamp (Private Applicator)
6601 S. Happe Road
Evansville, Indiana 47712
812-424-1062

1. On August 25, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On August 28, 2017, I met with Mr. Winiger and we proceeded to his bean field where he believed dicamba related drift had occurred. The field was located on the west side of South Happe Road, near Evansville, Indiana. Mr. Winiger stated Joe Steinkamp had applied a dicamba product to a soybean field located to the west of his bean field and believed it may have impacted his Roundup Ready, non-dicamba tolerant (DT) beans. Mr. Winiger informed me he had not applied any dicamba products this year on any of his farm fields and had made a post-emergent application of Roundup PowerMax (EPA Reg. #524-549; active ingredient: glyphosate) and Flexstar (EPA Reg. #100-1101; active ingredient: fomesafen) to the soybeans in this field on June 21, 2017, and no symptoms were noticed at that time. Mr. Winiger indicated he first noticed the symptoms around July 24, 2017.

3. During my on-site investigation I did the following:
    a) Looked for but did not observe, nor learn of from Mr. Winiger, any other dicamba applications made in the areas adjacent to his soybean field.
    b) Observed and photographed what appeared to be exposure symptoms (figure #1 below) to a growth regulator type of herbicide such as dicamba. These symptoms were more pronounced on the west side of Mr. Winiger's field closest to the target field; however, symptoms were notable throughout the field.
    c) Collected soybean vegetation from Mr. Winiger's field and a vegetation and soil sample from the target soybean field to the west.
    d) The graph below (Illustration #1) shows the field locations in question and areas where samples were obtained. Wind direction at the time of application is also noted in the illustration and explained later in this report.

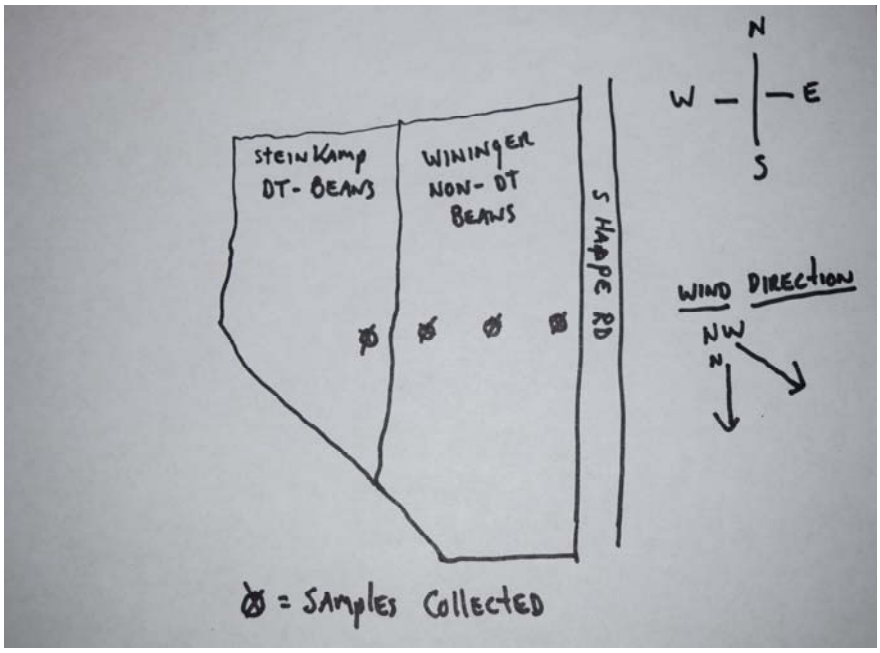


Illustration #1

Figure #1

4. I contacted Joe Steinkamp and spoke to him about the target field in question. Mr. Steinkamp indicated no buffer had been used. Mr. Steinkamp informed me he had applied Engenia (EPA Reg. #7969-345; active ingredient: dicamba) and Roundup PowerMax on July 8 and July 15, 2017. I informed Mr. Steinkamp he would be receiving a Pesticide Investigation Inquiry (PII) form to be completed and returned. The form was returned on September 6, 2017, and indicated the following:
    a) Application date & time: July 8, 2017, between 12:00pm and 1:00pm (CDT).
    b) Application date & time: July 15, 2017, between 3:00pm & 4:00pm (CDT).
    c) Target Field: soybean field directly adjacent west of Mr. Winiger's bean field
    d) Application rate of Engenia: 12.8oz per acre
    e) Adjuvants: none
    f) Nozzles: TTI 04
    g) Winds: July 8, 2017: from west (blowing toward Mr. Winiger's bean field), between 3 to 5 miles per hour (mph).
    h) Winds: July 15, 2017: from west/northwest (blowing toward Mr. Winiger's bean field), between 3 to 5 mph.

i) Applicator: Joseph E. Steinkamp
j) Buffer used: no
k) Ground speed: 10 mph
l) Boom Height: 24 inches
m) Checked Registrants website before application: no
n) Checked Field Watch before application: no
o) Survey site before application: yes

5. A check of the historical weather conditions on July 8, 2017 during the time of Mr. Steinkamp's application were reported from the following weather stations as follows:
   - Henderson Kentucky Airport (approximately 4 miles south-CDT): Winds were reported from the northwest (blowing toward Mr. Winiger's bean field), between 5.8 and 8.1 mph. No gusts were reported during the application period.
   - Evansville Indiana Airport (approximately 12 miles northeast-CDT): Winds were reported from the west/northwest (blowing toward Mr. Winiger's bean field), between 6.9 and 10.4 mph. A gust of 17.3 mph was reported during the application time frame.

6. A check of the historical weather conditions on July 15, 2017 during the time of Mr. Steinkamp's application were reported from the following weather stations as follows:
   - Henderson Kentucky Airport (approximately 4 miles south-CDT): Winds were reported from the northwest (blowing toward Mr. Winiger's bean field), between 4.6 and 8.1 mph. No gusts were reported during the application period.
   - Evansville Indiana Airport (approximately 12 miles northeast-CDT): Winds were reported as variable (no specific wind direction), between 4.6 and 5.8 mph. No gusts were reported during the application period.

7. On August 29, 2017, the collected vegetation and soil samples were turned into the Indiana State Chemist Office for analysis. The results were reported back on December 4, 2017, and indicated the following:

Case # 2017/1226		**Investigator: S. Farris**			
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**		
			Dicamba	DCSA	5-OH Dicamba
2017-51-0195	Soil sample target field 50 feet west of bean field	Soil	25.2	153	BDL
2017-51-0196	Vegetation bean sample 30 feet east of target field	Vegetation	BDL	BQL	BDL
2017-51-0197	Vegetation bean sample 300 feet east of target field	Vegetation	BDL	BDL	BDL
2017-51-0198	Vegetation bean sample 1300 feet east of target field	Vegetation	BDL	BDL	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Vegetation		2	1	2
LOQ (ppb)	Soil		2	1	2
Signature		**Date**	12/4/17		

8. The Engenia Supplemental Label stated the following:

- *"The applicator must also consult sensitive crop registries to locate nearby sensitive areas where available."*
- *"Do not tank mix any product with Engenia unless: You check the list of EPA approved products for use with Engenia at www.engeniatankmix.com no more than 7 days before applying Engenia."*
- *"Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption."*

Scott M. Farris
Investigator

Date: December 27, 2017

Disposition: Joseph E. Steinkamp was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of the sensitive crop registry or registrant's website before application.

Joseph E. Steinkamp was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when spray drift may occur. A civil penalty in the amount of $100.00 was assessed for this violation. Consideration was given to the fact in a dicamba outreach memo dated February 21, 2017, the Indiana Pesticide Review Board urged OISC to apply the most stringent penalties available for these types of violations.

George N. Saxton
Compliance Officer

Draft Date: February 9, 2018
Final Date: April 9, 2018

CASE SUMMARY

Case #2017/1302

Complainant: David Smith
14518 Klass Road
Coal City, Indiana 47427
812-821-0408

Respondent: Ryan Collins — Private Applicator
9390 S. SR 59
Clay City, Indiana
812-201-0585

1. On August 11, 2017, the complainant made contact with me, Agent Brian Baker of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his soybeans.

2. On August 11, 2017, I met with the complainant. I identified myself verbally and with OISC credentials. I explained the role of OISC in drift investigations and issued a Notice of Inspection. The complainant met with me at his affected field. I was in that same area conducting an investigation with a neighboring farmer.

3. The complainant showed me his field and echoed what his neighbor had told me in that he did not report the injury of his soybeans to OISC because he was told the soybeans would "grow out of it". When the complainant was told that might not be true by another source, he decided to report the "injury" to OISC.

4. The complainant's soybean field is bordered by two soybean fields one to the east and one south of his field. The two bordering fields were planted in dicamba tolerant soybeans. The two fields had post emergent pesticide spray applications of two different pesticide products.


Fig. 1


Fig. 2


Fig. 3


Fig. 4


Fig. 5

- Figure 1 is the area where the complainants field and the Collin field meet
- Figure 2&3 are a close up of the complainant's soybeans in fig. 1.
- Figure 4 is the top portion of the complainant's soybeans

5. At the point where the complainant's field borders the Collins field, it was plain to see the complainant's soybeans were cupped and puckered with some discoloring on the edges and tips. I collected swabs and vegetation from the complainant's field 15 paces from the dirt road separating the Worland 1 field and the complainant's field. I also walked 200 paces north and 200 west and collected a second sample. I collected swabs, vegetation and soil samples in the Collins field 15

and 70 paces off the dirt road. The samples were tagged and transported to the OISC Residue Laboratory for analysis.

6. I was able to speak to Mr. Collins in this case and provide a Pesticide Investigation Inquiry for him to fill out and return to me.

   Mr. **Ryan Collins** made a pesticide spray application on **June 8, 2017 from 3:00pm to 5:00pm** with the following pesticide products:

   - *Xtendimax, EPA Reg. #524-617, active in gradient=dicamba*
   - *Roundup Powermax, EPA Reg. #524-617, active ingredient=glyphosate.*

   The **complainant** made a post emergent pesticide spray application on **June 7, 2017** with the following pesticide products:

   - *Dupont Trivence, EPA Reg. #352-887, active ingredient=metribuzin, chlorimuron, flumioxazin.* **The complainant did not use any dicamba products in his sprayer in 2017.**

7. I completed a field sketch with sampling data, distances and I inserted the weather data (wind directions) at a later date. The sketch/diagram which follows (fig.6) contains all the information from the field sketch and some weather data.

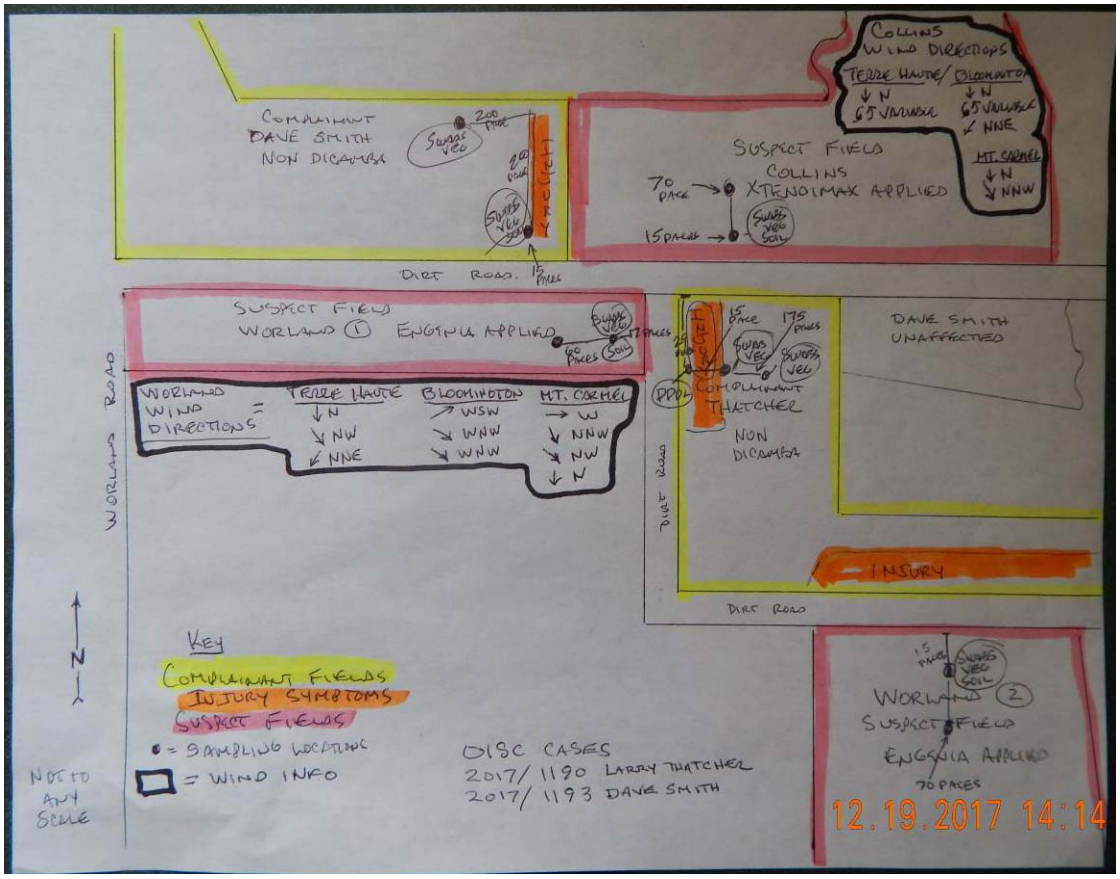


Fig. 6

8. In my initial contact, I provided a Pesticide Investigation Inquiry (PII) to Mr. Collins. I asked him to call me when the PII was completed.

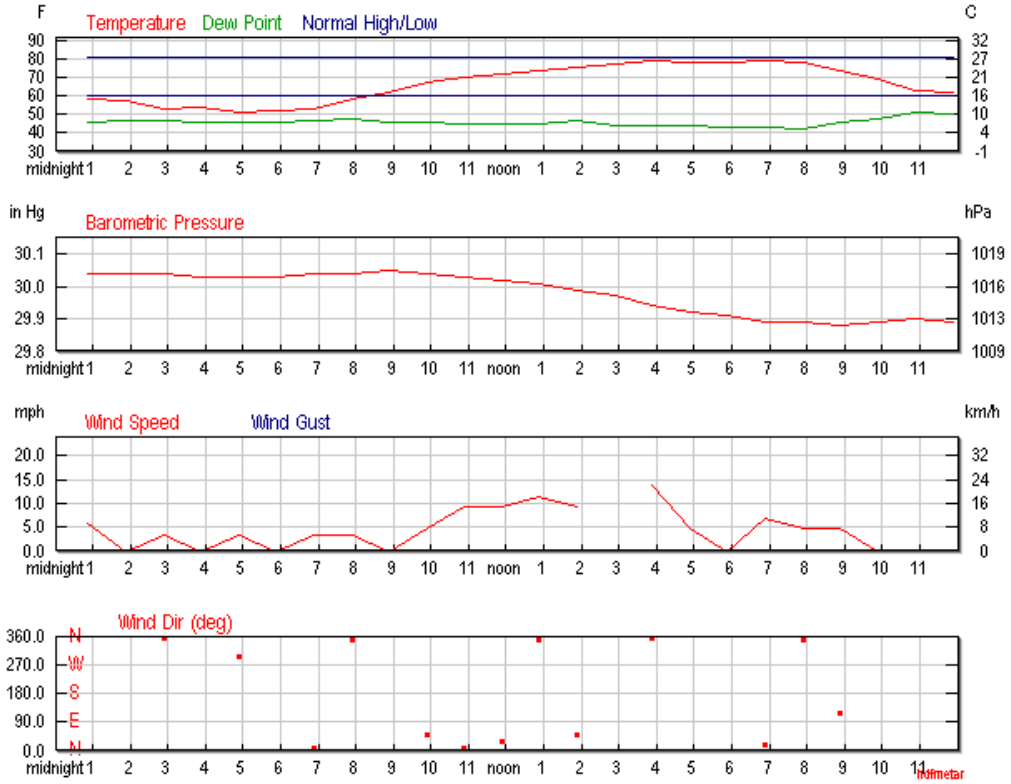
Ryan Collins PII responses:

a) Application date & time: **6-8-17 3:00pm to 5:00pm**
b) Target Field: **Hayfield Road**
c) Application rate of *Xtendimax*: **22 oz per acre**
d) Adjuvants: **None**
e) Nozzles: **TTI 11004**
f) Winds on June 8, 2017: **from the North at 9 mph (air inconsistent) by Applicator estimate.**
g) Applicator: **Ryan Collins**
h) Buffer used: **Yes Road and Ditch total of 120'**
i) Ground Speed: 10 mph
j) Boom Height: 24 inches
k) Checked Registrants website before application: **No**
l) Checked Field Watch before application: **No**
m) Surveyed site before application: **Yes**

9. The triangulated weather history data that follows is for June 8, 2017. The locations used will be Coal City Indiana that defaults to Terre Haute Indiana, Bloomington Indiana and Vincennes Indiana that defaults to Mount Carmel Illinois. The information provided pertains to the Collins application.

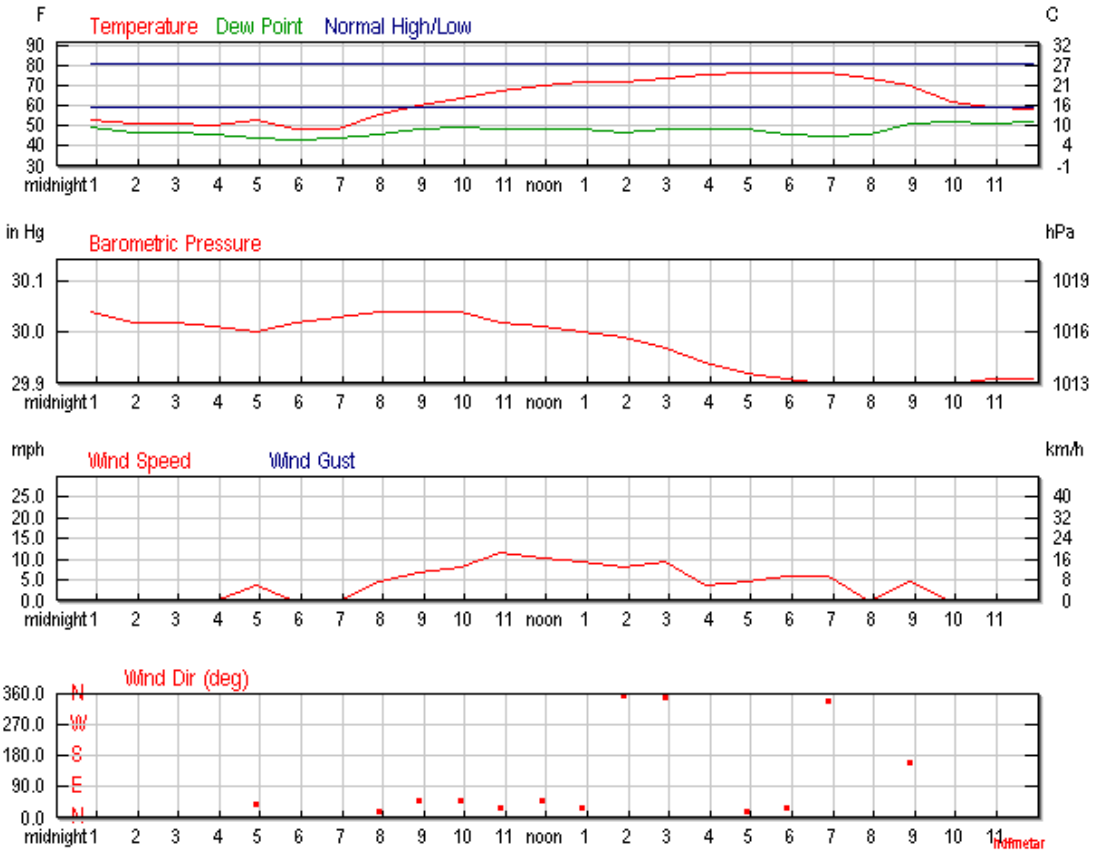
The chart and graph that follow are for **Terre Haute Indiana** on **June 8, 2017 from 3:00pm to 5:00pm** and it pertains to the Ryan Collins application. Terre Haute is approximately 20 miles NW of Coal City.

DATE	TIME	WIND DIRECTION	WIND SPEED
6-8-17	2:53pm	North	None given
6-8-17	3:53pm	North	13.8 mph
6-8-17	4:53pm	Variable	4.6 mph



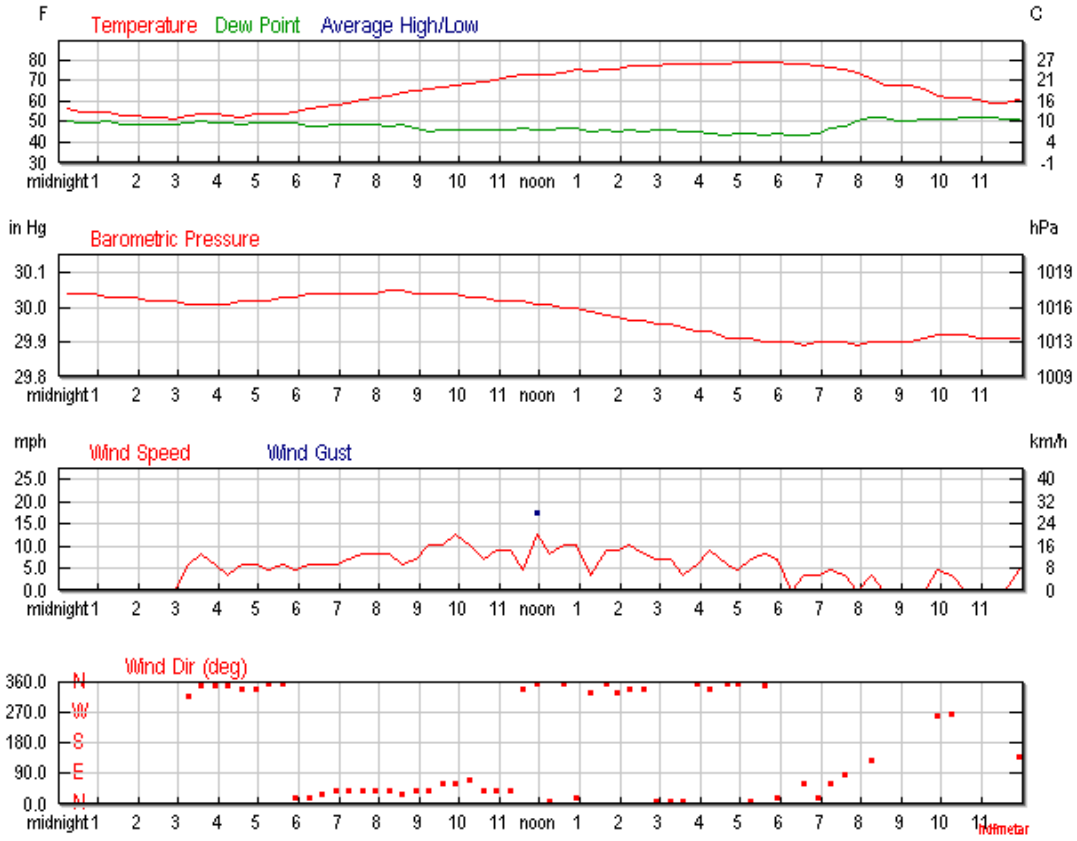
The chart and graph that follow are for **Bloomington Indiana** on **June 8, 2017 from 3:00pm to 5:00pm** and pertain to the Collins application. Bloomington is approximately 30 miles SE of Coal City.

DATE	TIME	WIND DIRECTION	WIND SPEED
6-8-17	2:53pm	North	9.2 mph
6-8-17	3:53pm	Variable	3.5 mph
6-8-17	4:53pm	NNE	4.6 mph



The chart and graph that follow are for **Mount Carmel Illinois** on **June 8, 2017 from 3:00pm to 5:00pm** and pertain to the Collins application. Mount Carmel Illinois is approximately 45 miles SW of Coal City.

DATE	TIME	WIND DIRECTION	WIND SPEED
6-8-17	2:55pm	North	6.9 mph
6-8-17	3:15pm	North	6.9 mph
6-8-17	3:35pm	North	3.5 mph
6-8-17	3:55pm	North	5.8 mph
6-8-17	4:15pm	NNW	9.2 mph
6-8-17	4:40pm	North	5.8 mph
6-8-17	4:55pm	North	4.6 mph

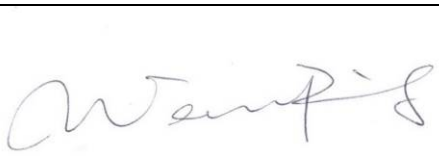


10. On August 16, 2017, I received the final report from PPDL in this case. The report reads in part:

> *"Cupping/puckering of leaves and discolored leaf tip are indicative of injury from dicamba. Plants can also be stunted for most of the season from dicamba injury in the vegetative growth stages."*
>
> Joe Ikley
> Extension Weed Specialist
> Purdue University

11. On December 1, 2017, I received an e-mail with the final report from The OISC Residue Laboratory for the samples that were analyzed in this case, 2017/1193 and the neighboring and bordering case 2017/1190. The charts that follow are a copy and paste of those final reports.

Case # 2017/1193 (Linked to 2017/1302)			**Investigator: B. Baker**		
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**		
			Dicamba	DCSA	5-OH Dicamba
2017-32-3945	Vegetation sample from N. Center of field	Vegetation	BDL	BDL	BDL
2017-32-3946	Vegetation sample from SE Corner of field	Vegetation	BDL	BDL	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Vegetation		4	0.4	4
Signature			**Date**	12/1/17	

Case # 2017/1190		Investigator: B. Baker			
Sample #	Sample Description	Sample Matrix	Amount Found (ppb)		
			Dicamba	DCSA	5-OH Dicamba
2017-32-3939	Vegetation sample from center of field	Vegetation	BDL	BDL	BDL
2017-32-3940	Vegetation sample from west edge of field	Vegetation	BDL	BDL	BDL
2017-32-3967	Vegetation -Suspect Collins Buffer	Vegetation	BDL	6.47	BDL
2017-32-3968	Vegetation -Suspect Collins App. area	Vegetation	BDL	BQL	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Vegetation		4	0.4	4
Signature		**Date**	12/1/17		

The charted results do not indicate the presence of dicamba in the complainant's samples and a small measure in the field. (BQL and 6.47ppb reading) in the neighboring case 2017/1190. There must be a consideration of the time between the post-emergent pesticide spray applications of dicamba product Xtendimax and the date of sampling. The dicamba application date was June 8 of 2017. The complainant field sampling was done on August 11, 2017. In looking for the source of the injury symptoms on the complainant's soybeans the PPDL report reads in part the injury symptoms observed were "indicative of injury from dicamba". The post emergent pesticide spray application to the complainant's soybeans did not contain any dicamba or other pesticide product that would injure the soybeans

12. In this case, respondent **Ryan Collins** made a pesticide spray application of **Xtendimax**. The prevailing wind direction on the date of the application was primarily a North wind with the variables being NNE, NNW. The respondent's field is south of the Collins field and separated by a dirt road (fig.3).

The label/supplemental label for Xtendimax reads:

"DO NOT APPLY this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops, . . ."

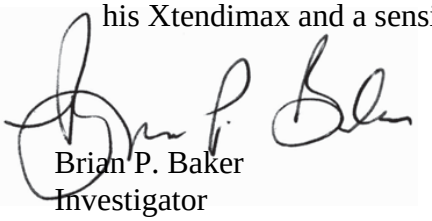
"The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site."

TANK-MIXING INSTRUCTIONS:
DO NOT tank mix any product with Xtendimax with VaporGrip technology unless:
1. You check the list of tested products found not to adversely affect the offsite movement potential of Xtendimax with VaporGrip technology at www.xtendimaxapplicationrequirements.com no more than 7 days before applying Xtendimax with VaporGrip technology.

In Mr. Collin's PII, he indicated he did not check the registrant's website or sensitive crop registry.

CONCLUSION:

In this case, Mr. Collins applied when the wind was blowing towards an adjacent commercially grown dicamba sensitive crop. He also failed to check the registrant's website prior to tank mixing his Xtendimax and a sensitive crop registry.



Brian P. Baker
Investigator

Date: December 22, 2017

Disposition: Ryan Collins was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry or registrant's website 7 days before application.

Ryan Collins was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when wind is blowing toward adjacent commercially grown dicamba sensitive crops. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: February 28, 2018
Final Date: April 9, 2018

CASE SUMMARY

Case #2017/1303

Complainant: Larry Thatcher
3790 Beech Church Road
Coal City, Indiana 47427
812-829-8315 cell
812-859-4220 home

Respondent(s): Ryan Collins Private Applicator
9390 S. SR 59
Clay City, Indiana 47841
812-201-0585

1. On August 10, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On August 11, 2017, I met with the complainant. I identified myself verbally and with OISC credentials. I explained the role of OISC in drift investigations and issued a Notice of Inspection. The complainant told me he noticed the "injury" to his soybean field about a month ago and the reason he did not report it at that time was that the local Co-Op personnel told him that the beans would "grow out of it". The soybeans did grow nicely however the complainant had his beans surveyed by crop specialists and they allegedly showed him how there was no pod development along the top half of his plants (fig. 1&2).

3. I followed the complainant to his fields located off Worland Rd. The affected field in question is "L" shaped and has dicamba tolerant soybeans on three sides of it (fig. 3 center right/yellow).


Fig. 1


Fig. 2

- Figure 1 is the bottom portion of the soybean plant with a small pod
- Figure 2 is the top portion of the same plant with tiny blossoms and no pod.

4. The soybeans had leaves on the bottom portion of the plant, which were puckered, cupped and discolored on the tips and edges (center of fig. 1). I collected the plant in figs 1&2 for submission to the Purdue Plant and Pest Diagnostic Laboratory (PPDL). The fields to the north/south and west of the complainant were planted in dicamba tolerant soybeans and post emergent applications of two different dicamba products had been made. One of the owners of those fields was provided to me as Mr. Ryan Collins. I was able to get the information for the pesticide products used. I delivered a Pesticide Investigation Inquiry (PII) to Mr. Collins. I instructed him to both fill out the PII and call me when it was complete and ready to be picked up. I noted the following for the dates of the applications and products used:

Mr. **Ryan Collins** made a pesticide spray application on **June 8, 2017 from 3:00pm to 5:00pm** with the following pesticide products:

- *Xtendimax, EPA Reg. #524-617, active in gradient=dicamba*
- *Roundup Powermax, EPA Reg. #524-617, active ingredient=glyphosate.*

5. The **complainant** had a post emergent pesticide spray application on **July 12, 2017** made by the Clay City Co-op with the following pesticide products:

   - Liberty 280 SL, EPA Reg. #264-829, active ingredient=glufosinate
   - Section Three, EPA Reg. #66330-414-1381, active ingredient=clethodim

   I spoke to the Manager of Clay City Co-op and he told me the sprayer used in the application for Mr. Thatcher did not have any dicamba products used in it in 2017.

6. I collected swabs and vegetation from the complainant's field and swabs, vegetation and soil from the suspect field. The samples collected in the complainant's field were 15 paces off the dividing dirt road and 175 paces into the field from the dirt road. In the Collins field, I took the samples 15 paces and 70 paces from the dirt road dividing the fields. The samples were tagged and transported to the OISC Residue Laboratory for analysis. The PPDL samples was secured and transported to the PPDL for analysis.

7. I completed a field sketch of the fields involved and included the sampling data. The diagram which follows (fig.3) is taken from that field sketch. The weather wind direction was also added.

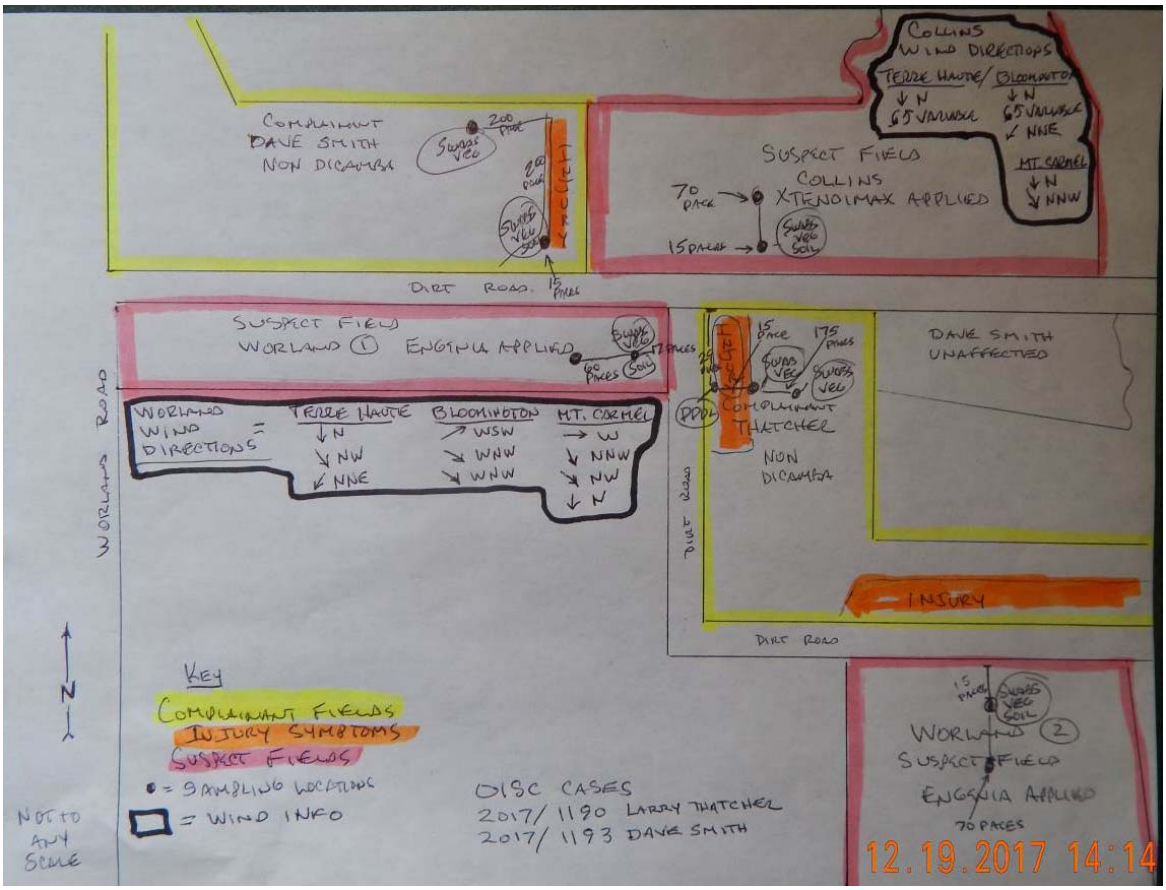


Fig. 3

8. I received a phone call from Mr. Collins informing me his PII was complete.

Ryan Collins PII responses:

a) Application date & time: **6-8-17 3:00pm to 5:00pm**
b) Target Field: **Hayfield Road**
c) Application rate of *Xtendimax*: **22 oz per acre**
d) Adjuvants: **None**
e) Nozzles: **TTI 11004**
f) Winds on June 8, 2017: **from the North at 9 mph (air inconsistent) by Applicator estimate.**
g) Applicator: **Ryan Collins**
h) Buffer used: **Yes Road and Ditch total of 120'**
i) Ground Speed: 10 mph
j) Boom Height: 24 inches
k) Checked Registrants website before application: **No**
l) Checked Field Watch before application: **No**
m) Surveyed site before application: **Yes**

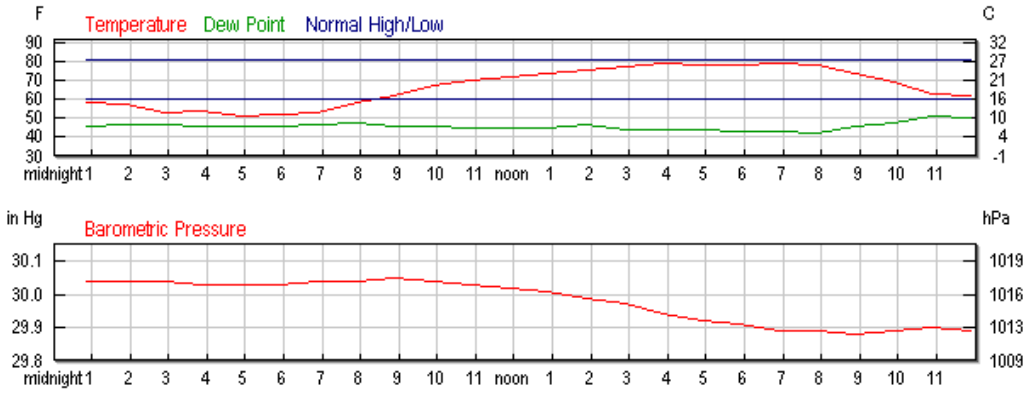
9. The triangulated weather history data that follows was taken from:
www.weatherunderground.com

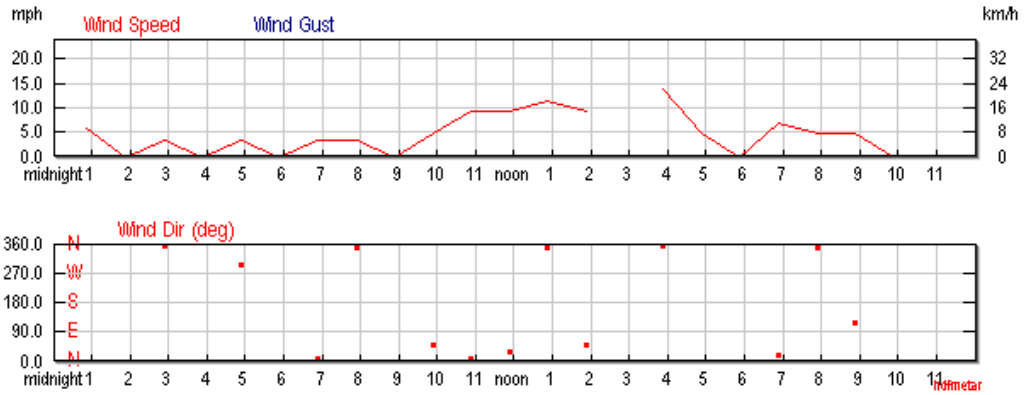
The locations for the data were Coal City, which defaults to Terre Haute Indiana, Bloomington Indiana and Vincennes, Indiana. The history for Vincennes defaults to Mount Carmel Indiana.

The triangulated weather history data, which follows, is for June 8, 2017. The locations used will be Coal City Indiana, which defaults to Terre Haute Indiana, Bloomington Indiana and Vincennes Indiana, which defaults to Mount Carmel Illinois.

The chart and graph that follow are for **Terre Haute Indiana** on **June 8, 2017 from 3:00pm to 5:00pm** and it pertains to the Ryan Collins application. Terre Haute is approximately 20 miles NW of Coal City.

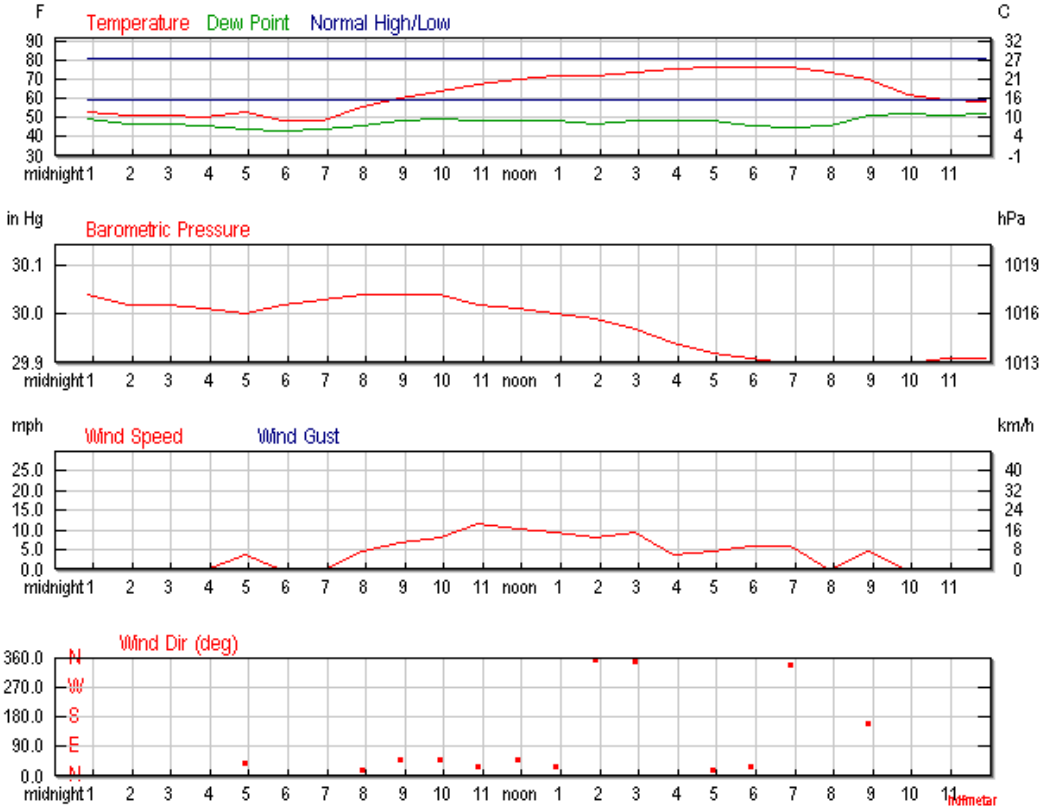
DATE	TIME	WIND DIRECTION	WIND SPEED
6-8-17	2:53pm	North	None given
6-8-17	3:53pm	North	13.8 mph
6-8-17	4:53pm	Variable	4.6 mph





The chart and graph that follow are for **Bloomington Indiana** on **June 8, 2017 from 3:00pm to 5:00pm** and pertain to the Collins application. Bloomington is approximately 30 miles SE of Coal City.

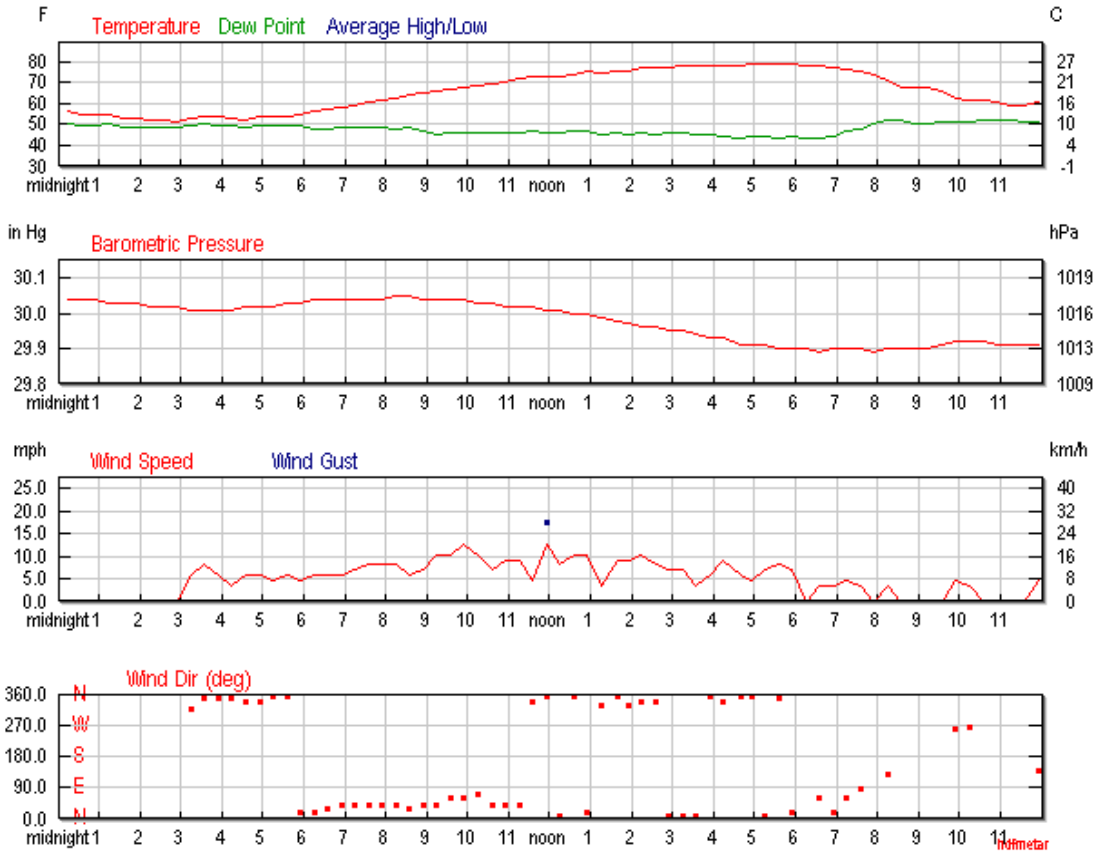
DATE	TIME	WIND DIRECTION	WIND SPEED
6-8-17	2:53pm	North	9.2 mph
6-8-17	3:53pm	Variable	3.5 mph
6-8-17	4:53pm	NNE	4.6 mph



The chart and graph that follow are for **Mount Carmel Illinois** on **June 8, 2017 from 3:00pm to 5:00pm** and pertain to the Collins application. Mount Carmel Illinois is approximately 45 miles SW of Coal City.

DATE	TIME	WIND DIRECTION	WIND SPEED
6-8-17	2:55pm	North	6.9 mph
6-8-17	3:15pm	North	6.9 mph
6-8-17	3:35pm	North	3.5 mph

6-8-17	3:55pm	North	5.8 mph
6-8-17	4:15pm	NNW	9.2 mph
6-8-17	4:40pm	North	5.8 mph
6-8-17	4:55pm	North	4.6 mph



10. On August 14, 2017, I received the final report from PPDL. The report reads in part:

    "Cupping and puckering on leaves and discolored leaf tip are indicative of injury from dicamba. Depending on weather conditions after exposure, plant regrowth and recovery could have been delayed, leaving the plants at a younger growth stage than plants that were not exposed to dicamba".

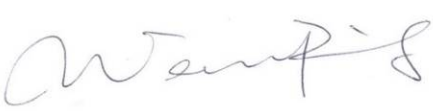
    Joe Ikley
    Extension Weed Specialist
    Purdue University

11. On December1, 2017, I received an e-mail with the final report from The OISC Residue Laboratory for the samples, which were analyzed in this case. The chart that follows is a copy and paste of that final report.

OFFICE OF INDIANA STATE CHEMIST

Pesticide Residue Laboratory

Lab Report

Case # 2017/1303 (Linked to 2017/1190)			**Investigator: B. Baker**		
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**		
			Dicamba	DCSA	5-OH Dicamba
2017-32-3939	Vegetation sample from center of field	Vegetation	BDL	BDL	BDL
2017-32-3940	Vegetation sample from west edge of field	Vegetation	BDL	BDL	BDL
2017-32-3967	Vegetation -Suspect Collins Buffer	Vegetation	BDL	6.47	BDL
2017-32-3968	Vegetation -Suspect Collins App. area	Vegetation	BDL	BQL	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Vegetation		4	0.4	4
Signature		**Date**	12/1/17		

The charted results do not indicate the presence of dicamba in the complainant's samples and a small measure in the respondent's fields. (BQL and 6.47ppb reading). There must be a consideration of the time between the post-emergent pesticide spray applications of the dicamba product Xtendimax and the date of sampling. The dicamba application date was June 8 of 2017. The complainant field sampling was done on August 11, 2017. In looking for the source of the injury symptoms on the complainant's soybeans the PPDL report reads in part the injury symptoms observed were "indicative of injury from dicamba". The post emergent pesticide spray application to the complainant's soybeans did not contain any dicamba or other pesticide product that would injure the soybeans.

12. In this case, respondent **Ryan Collins** made a pesticide spray application of **Xtendimax**. The prevailing wind direction on the date of the application is primarily a North wind with the variables being NNE, NNW. The respondent's field is south of the Collins field and separated by a dirt road (fig.3).

    The label/supplemental label for Xtendimax reads in part:

    "DO NOT apply this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops."

    TANK-MIXING INSTRUCTIONS:
    DO NOT tank mix any product with Xtendimax with VaporGrip technology unless:

    1) You check the list of tested products found not to adversely affect the offsite movement potential of Xtendimax with VaporGrip technology at

www.xtendimaxapplicationrequirements.com no more than 7 days before applying Xtendimax with VaporGrip technology.
"The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site."

Mr. Collin's PII indicated he did not check the registrant's website or a sensitive crop registry.

Brian P. Baker
Investigator

Date: December 19, 2017

Disposition: Ryan Collins was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding the checking of a sensitive crop registry and registrant's website before application.

Ryan Collins was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when wind is blowing toward adjacent commercially grown crops. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: February 28, 2018
Final Date: April 9, 2018

CASE SUMMARY

Case #2017/1304

Complainant: Bo Napier
8638 S. SR 62
Nabb, Indiana 47147
812-701-7801

Respondent: Crop Production Services (CPS) — Licensed Business
Jeremy Sharp — Licensed Applicator
71 S. SR 3
Lexington, Indiana 47138
812-752-4951

1. On August 9, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On August 21, 2017, I met with Bo Napier. Mr. Napier stated his non-DT soybeans have crinkled, cupped leaves. Mr. Napier's field is east of Lexington, Indiana, on the east side of Hardy Mill Road. See site diagrams. I observed crinkled cupped leaves. Symptoms on the Hardy Mill Road field appeared heavier on the south end. See figures 1-2.

2017501905	Soil 50 yds from target field – BN2	7
2017501906	Soil 30 yds from target field – BN2	8
2017501907	Soil from target field – BN2	9
2017501908	Vegetation 50 yds from target field – BN2	10
2017501909	Vegetation 30 yds from target field – BN2	11
2017501910	Vegetation from target field – BN2	12

Site diagram

Figure 1-Crinkled & cupped (Hardy Mill Rd)

Figure 2-Symtomology (Hardy Mill Rd)

3. On August 21, 2017, I collected a vegetation sample to be visually analyzed by Purdue's Plant and Pest Diagnostic Lab (PPDL). In addition, I collected soil and vegetation samples to be analyzed by OISC's Residue Lab.

4. On August 21, 2017, I met with Chris Smith at CPS in Lexington, Indiana. Mr. Smith provided me with CPS applications records for the two (2) fields sprayed adjacent to Bo Napier's soybeans. I requested to Mr. Smith to make copies of a blank Pesticide Investigation Inquiry (PII) form I provided for the other cases involving this CPS location.

5. On August 22, 2017, PPDL reported the following:

Diagnosis and Recommendations

Host/Habitat	Soybean (Glycine max)
List of Diagnosis/ID(s)	
Suspected for Herbicide injury; Exposure (Abiotic disorder)	
Confirmed for Soybean downy mildew (Peronospora manshurica)	

Final Report

8-22-17
Cupping/puckering of leaves and discolored leaf tip are indicative of injury from dicamba.

Joe Ikley
Extension Weed Specialist
Purdue University
915 West State Street
W. Lafayette, IN 47907
e-mail - jikley@purdue.edu
Cell - (410) 596-9091
Office - (765) 496-2121
8-22-17
Soybean Downy Mildew, a fungal disease, was confirmed to be associated with the small, yellow spots visible on the top side of the leaves.

Gail Ruhl
Plant Disease Diagnostician

6. I did not receive a completed PII from Jeremy Sharp's application. The following are answers to questions from the CPS application record.

   A. Application dates & times: 7/12/17 8:30am-9:15am
   B. Target field: DT-soybeans
   C. Application rate of Xtendimax: 32 oz. per acre
   D. Adjuvants: Strike force and Reign
   E. Nozzles: ULD 05; 30 PSI
   F. Winds: 7/12 - 5 mph southwest (blowing toward Mr. Napier's non-DT soybeans)
   G. Applicator: Jeremy Sharp
   H. Buffer Zone: Not listed (See site diagram, no buffer)
   I. Ground speed: Not listed
   J. Boom height: Not listed
   K. Checked Registrants website before application: : Not listed
   L. Checked Field Watch before application: : Not listed
   M. Surveyed site before application: : Not listed

7. On November 11, 2017, OISC's Residue Lab reported the following. Lab results for 2017/1304 are the same as 2017/1188.

Case # 2017/1188		**Investigator: J. Kelley**			
Sample #	**Sample Description**	**Sample Matrix**	**Amount Found (ppb)**		
			Dicamba	**DCSA**	**5-OH Dicamba**
2017-50-1899	Soil 50 yards from target field – BN1	Soil	BDL	BDL	BDL
2017-50-1900	Soil 10 yards from target field – BN1	Soil	BDL	BDL	BDL
2017-50-1901	Soil from target field – BN1	Soil	BQL	BQL	BDL
2017-50-1902	Vegetation 50 yards from target field – BN1	Vegetation	BDL	BDL	BDL
2017-50-1903	Vegetation 10 yards from target field – BN1	Vegetation	BDL	BDL	BDL
2017-50-1904	Vegetation from target field – BN1	Vegetation	BDL	BDL	BDL
2017-50-1905	Soil 50 yards from target field – BN2	Soil	BDL	BDL	BDL
2017-50-1906	Soil 30 yards from target field – BN2	Soil	BDL	BDL	BDL
2017-50-1907	Soil from target field – BN2	Soil	7.65	29.6	BDL
2017-50-1908	Vegetation 50 yards from target field – BN2	Vegetation	BDL	BDL	BDL
2017-50-1909	Vegetation 30 yards from target field – BN2	Vegetation	BDL	BDL	BDL
2017-50-1910	Vegetation from target field – BN2	Vegetation	BDL	BDL	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Soil		1	1	1
LOQ (ppb)	Vegetation		2	0.4	4
Signature		**Date**	11/30/2017		

8. Wind data from Weather Underground, www.wunderground.com, indicated:

   Wind data on July 12, 2017, from the weather station located at the Columbus, Indiana airport, 72 miles away, registered wind out of the south at 6.9mph. This is consistent to Mr. Sharp's CPS application record. This station was chosen because the Bowman airport did not have weather data for this date. The wind was blowing toward Mr. Napier's non-DT soybeans.

9. Label language for Xtendimax states in part:
   A. "*DO NOT tank mix any product with XtendiMaxTM With VaporGripTM Technology unless: 1. You check the list of tested products found not to adversely affect the offsite movement potential of XtendiMaxTM With VaporGripTM Technology at www.xtendimaxapplicationrequirements.com no more than 7 days before applying XtendiMaxTM With VaporGripTM Technology…*"
   B. "*DO NOT APPLY this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops, including but not limited to, commercially grown tomatoes and other fruiting vegetables (EPA crop group 8), cucurbits (EPA crop group 9), and grapes.*"
   C. "*Before making an application, the applicator must survey the application site for neighboring non-target susceptible crops. The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site."*

10. It appears from the CPS application record, Mr. Sharp failed to check the manufacturer's website, Driftwatch website, and survey the site prior to application, or make sure wind was not blowing toward sensitive sites. Furthermore, Mr. Sharp did not return a PII for this investigation.

Paul J. Kelley III

Paul J. Kelley
Investigator

Date: January 29, 2018

Disposition: Jeremy Sharp was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the site, checking registrant's website and checking local sensitive crop registry before application.

Jeremy Sharp was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when the wind is blowing towards a sensitive crop. A civil penalty in the amount of $250.00 was assessed for this violation.

Jeremy Sharp was cited for violation of section 65(6) of the Indiana Pesticide Use and Application Law for failure to comply with an Order of the state chemist by not providing all of the requested information. A civil penalty in the amount of $250.00 was assessed for this violation.

George N. Saxton
Compliance Officer

Draft Date: March 8, 2018
Final Date: April 17, 2018

CASE SUMMARY

Case #2017/1305

Complainant: Trent Mace
4152 S. Concord Road
Lexington, Indiana 47138
812-595-5361

Respondent: Crop Production Services (CPS) — Licensed Business
Jeremy Sharp — Licensed Applicator
71 S. SR 3
Lexington, Indiana 47138
812-752-4951

1. On August 15, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On August 21, 2017, I went to a non-DT soybean field of Trent Mace south of Swan road in Nabb, Indiana. See site map. I observed pesticide exposure symptoms throughout field. However, symptoms appeared heavier on the north side adjacent to field sprayed with dicamba by CPS. See figures 1-2.

2017501893	Soil 50 yds from target field – TM2	7
2017501894	Soil 10 yds from target field – TM2	8
2017501895	Soil from target field – TM2	9
2017501896	Vegetation 50 yds from target field – TM2	10
2017501897	Vegetation 10 yds from target field – TM2	11
2017501898	Vegetation from target field – TM2	12

Site diagram

Figure 1-Crinkled leaves

Figure 2-Crinkled & cupped

3. On August 21, 2017, I collected a vegetation sample to be visually analyzed by Purdue's Plant and Pest Diagnostic Lab (PPDL). In addition, I collected soil and vegetation samples to be analyzed by OISC's Residue Lab.

4. On August 21, 2017, I met with Chris Smith at CPS in Lexington, Indiana. Mr. Smith provided me with CPS applications records for the two (2) fields sprayed adjacent to Trent Mace's soybeans. I requested to Mr. Smith to make copies of a blank Pesticide Investigation Inquiry (PII) form I provided for the other cases involving this CPS location.

5. On August 22, 2017, PPDL reported the following:

Diagnosis and Recommendations

Host/Habitat	Soybean (Glycine max)
List of Diagnosis/ID(s)	
Suspected for Herbicide injury: Exposure (Abiotic disorder)	
Confirmed for Soybean downy mildew (Peronospora manshurica)	

Final Report

8-22-17
Cupping/puckering of leaves and discolored leaf tip are indicative of injury from dicamba.

Joe Ikley
Extension Weed Specialist
Purdue University
915 West State Street
W. Lafayette, IN 47907
e-mail - jikley@purdue.edu
Cell - (410) 596-9091
Office - (765) 496-2121

8-22-17
Soybean Downy Mildew, a fungal disease, was confirmed to be associated with the small, yellow spots visible on the top side of the leaves.

Gail Ruhl
Plant Disease Diagnostician

6. Dated August 25, 2017, I received Jeremy Sharp's completed PII. The following are answers to questions from the PII.

   A. Application dates & times: 7/24/17 (11:45am-2:15pm)
   B. Target field: DT-soybeans
   C. Application rate of Xtendimax: 28 oz. per acre
   D. Adjuvants: Strike force and Reign
   E. Nozzles: ULD 05; 40 PSI
   F. Winds: 7/24 - 6mph northwest (blowing toward Mr. Mace's non-DT soybeans)
   G. Applicator: Jeremy Sharp
   H. Buffer Zone: Not answered on PII (See site diagram, no buffer)
   I. Ground speed: Not answered on PII
   J. Boom height: Not asked on this PII
   K. Checked Registrants website before application: : Not answered on PII
   L. Checked Field Watch before application: : Not answered on PII
   M. Surveyed site before application: : Not answered on PII

7. On December 4, 2017, OISC's Residue Lab reported the following. Lab results for 2017/1305 are the same as 2017/1208.

Case # 2017/1208		**Investigator: J. Kelley**			
Sample #	**Sample Description**	**Sample Matrix**	**Amount Found (ppb)**		
			Dicamba	**DCSA**	**5-OH Dicamba**
2017-50-1887	Soil 50 yards from target field – TM1	Soil	BDL	BDL	BDL
2017-50-1888	Soil 10 yards from target field – TM1	Soil	BDL	BDL	BDL
2017-50-1889	Soil from target field – TM1	Soil	1.84	32.0	BDL
2017-50-1890	Vegetation 50 yards from target field – TM1	Vegetation	BDL	BDL	BDL
2017-50-1891	Vegetation 10 yards from target field – TM1	Vegetation	BDL	BQL	BDL
2017-50-1892	Vegetation from target field – TM1	Vegetation	BDL	13.2	BDL
2017-50-1893	Soil 50 yards from target field – TM2	Soil	BDL	BDL	BDL
2017-50-1894`	Soil 10 yards from target field – TM2	Soil	BDL	BDL	BDL
2017-50-1895	Soil from target field – TM2	Soil	6.14	74.3	BDL
2017-50-1896	Vegetation 50 yards from target field – TM2	Vegetation	BDL	BDL	BDL
2017-50-1897	Vegetation 10 yards from target field – TM2	Vegetation	BDL	BQL	BDL
2017-50-1898	Vegetation from target field – TM2	Vegetation	BDL	47.2	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Soil		1	1	1
LOQ (ppb)	Vegetation		2	0.4	4
Signature		**Date**	12/4/2017		

8. Wind data from Weather Underground, www.wunderground.com, indicated:

   Wind data on July 24, 2017, from the weather station located at the Bowman airport, 45 miles away, in Louisville, Kentucky, registered wind out of the west, and west-northwest 3.8mph-8.1mph. This is consistent to Mr. Sharp's PII.

9. Label language for Xtendimax states in part:
   A. "*DO NOT tank mix any product with XtendiMaxTM With VaporGripTM Technology unless: 1. You check the list of tested products found not to adversely affect the offsite movement potential of XtendiMaxTM With VaporGripTM Technology at www.xtendimaxapplicationrequirements.com no more than 7 days before applying XtendiMaxTM With VaporGripTM Technology…*"
   B. "*DO NOT APPLY this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops, including but not limited to, commercially grown tomatoes and other fruiting vegetables (EPA crop group 8), cucurbits (EPA crop group 9), and grapes.*"
   C. "*Before making an application, the applicator must survey the application site for neighboring non-target susceptible crops. The applicator must also consult sensitive crop registries to identify any commercial specialty or certified organic crops that may be located near the application site."*

10. It appears from Mr. Sharp answers to the PII, he failed to check the manufacturer's website, Driftwatch website, and survey the site prior to application, or make sure wind was not blowing toward sensitive sites. Furthermore, Mr. Sharp did not answer all questions on the PII.

Paul J. Kelley III

Paul J. Kelley — Date: January 29, 2018
Investigator

Disposition: Jeremy Sharp was warned for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding surveying the application site, checking the registrant's website and local sensitive crop registry before application.

Jeremy Sharp was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding application when the wind is blowing towards a susceptible crop. A civil penalty in the amount of $250.00 was assessed for this violation.

Jeremy Sharp was cited for violation of section 65(6) of the Indiana Pesticide Use and Application Law for failure to comply with an Order of the state chemist by not providing all of the requested information. A civil penalty in the amount of $250.00 was assessed for this violation.

George N. Saxton — Draft Date: March 8, 2018
Compliance Officer — Final Date: April 17, 2018

CASE SUMMARY

Case #2017/1307

Complainant: Matt Taylor
8402 E. CR125 N.
Marion, IN 46952
765-661-2940

Respondent: Greg Comer — Private Applicator
5195 S. CR600 W.
Swayzee, IN 46986
765-618-2012

1. On July 27, 2017, the complainant contacted the Compliance Officer of the Office of Indiana State Chemist (OISC) to report suspected dicamba agricultural pesticide drift to his beans.

2. On July 28, 2017, I spoke with Matt Taylor who reported that he inspected his soybeans after other area growers observed cupping in their non dicamba-tolerant (DT) soybean fields. He discovered his Roundup Ready soybeans were cupped and called the OISC the next day.

3. On August 1, 2017, I met Mr. Taylor at the family farm on CR125N in Grant County. He reported seeing symptoms in two of his fields; one field was on the north side of CR125N (see Case#2017/1089) and one was on the south behind the farm. Both of his fields bordered soybean fields that were reportedly being farmed by Eddie Blinn and Mark Glessner. It was suspected those fields were sprayed with a dicamba-containing tank mix. Mr. Taylor reported both of his fields were sprayed with Roundup (glyphosate) on July 31, 2017.

4. During my on-site investigation of the south field, I did the following:

   a) Looked for, but did not find, any other potential sources of dicamba adjacent to the Taylor (south) soybean field. The Taylor field was bordered by the target field on the south side (Fig.1) with no fence line or biological barriers separating the two.
   b) Observed and photographed cupped and puckered leaves on new growth and across the top of the canopy of non-DT soybean plants in the southern portion of the Taylor field. These symptoms are commonly associated with exposure to a growth-regulator type herbicide such as dicamba. Soybeans in the target field exhibited no symptoms.
   c) Collected samples of affected soybean plants from the southern portion of the Taylor field for assessment by the Plant & Pest Diagnostic Lab (PPDL) at Purdue.
   d) Collected plant samples from soybeans exhibiting symptoms approximately 20 feet into the Taylor field, north of the target field. Collected plant samples from soybeans approximately 20 feet into the target field, south of the Taylor field. Those two samples were submitted to the OISC Residue Lab for analysis. Because on-site investigations were conducted at both of the Taylor fields and samples were submitted at the same time, lab results for both sites were reported on one report (table below).

Fig.1 Aerial photo of fields


Fig.2 Fields abutting; looking east


Fig.3 Cupped/puckered leaves across canopy


Fig.4 Cupped/puckered new growth

5. On August 2, 2017, I contacted Greg Comer, applicator for the growers farming the target field, and informed him of the complaint. He confirmed he sprayed the target field with Xtendimax in July. Mr. Comer indicated he would check the spray date and provide any application information needed. Mr. Comer later returned a completed Pesticide Investigation Inquiry which indicated the following:
   a) Application date & time: July 14, 2017, from 11am-1pm
   b) Target field: Williams farm (soybeans), bordering Taylor field
   c) Pesticides: Roundup PowerMax (glyphosate) EPA Reg. #524-549
      Xtendimax (dicamba) EPA Reg. #524-617
   d) Application rate of Xtendimax: 22 oz. per acre
   e) Adjuvants: Astonish and Capsule
   f) Nozzles: TTI1104
   g) Ground speed: 13.7mph
   h) Winds: 5mph from west-southwest (toward Taylor soybeans)
   i) Applicator: Greg Comer
   j) Buffer zone: not provided
   k) Checked registrant's web site before application: yes
   l) Checked Driftwatch/Fieldwatch before application: yes
   m) Surveyed application site before application: yes

6. I checked recorded wind data at www.wunderground.com for the closest official weather station to the application site for July 14, 2017. The Marion Municipal Airport, which is ten (10) miles southwest of the application site, recorded the following:
   - 1116am 8.1mph from west-northwest (away from the Taylor soybeans)
   - 1135am 9.2mph from west-northwest
   - 1155am 10.4mph from west-northwest
   - 1215pm 6.9mph from west

- 1235pm 9.2mph from west
- 1255pm 10.4mph from west

7. The PPDL report stated, *"Cupping/puckering of leaves, parallel venation on leaves, and discolored leaf tip are indicative of dicamba injury."*

8. The OISC Residue Lab analyzed the plant samples for dicamba and its breakdown products, DCSA and 5-OH dicamba, and reported the following (samples described as "North" were collected for Case#2017/1089 and do not pertain to this case):

Case # 2017/1307 (2017/1089)			**Investigator: A. Roth**		
Sample #	Sample Description	Sample Matrix	**Amount Found (ppb)**		
			Dicamba	DCSA	5-OH Dicamba
2017-474097	South non target beans - Taylor	Vegetation	3.77	BQL	BDL
2017-474098	South target beans	Vegetation	BDL	41.1	BDL
2017-474099	North non target beans - Taylor	Vegetation	3.68	BQL	BDL
2017-474100	North target beans	Vegetation	2.47	68.3	BDL
PPM= Parts Per Million; PPB=Parts Per Billion; CONF=Confirmed; LOQ=Limit of Quantitation; BDL=Below detection Limits: this analyte was not detected using the standard analytical methods employed by OISC; BQL=Below quantification limits: this analyte was detected however the amount was lower than the quantification limit established using the standard analytical methods employed by OISC					
LOQ (ppb)	Vegetation		2	0.4	4
Signature		**Date**	12/04/17		

9. Dicamba was detected in the non-DT soybeans collected from the Taylor (south) field. One of the breakdown products of dicamba, DCSA, was detected in soybeans collected from the south target field. The evidence at the site and the lab reports suggest dicamba from the application to the target field moved off-target to the Taylor soybean field. While it is difficult to determine whether dicamba moved off-target due to direct particle drift, application into an inversion or volatility at some point after the application, the directional wind information provided by Mr. Comer supports that Xtendimax was applied when winds were blowing toward the sensitive non-DT soybeans.

10. The Xtendimax label reads, **"DO NOT APPLY this product when the wind is blowing toward adjacent commercially grown dicamba sensitive crops, including but not limited to, commercially grown tomatoes and other fruiting vegetables (EPA crop group 8), cucurbits (EPA crop group 9), and grapes."**

Andrew R. Roth Date: February 15, 2018
Investigator

Disposition: Greg Comer was cited for violation of section 65(2) of the Indiana Pesticide Use and Application Law for failure to follow label directions regarding drift. A civil penalty in the amount of $100.00 was assessed for this violation.

George N. Saxton Draft Date: March 22, 2018
Compliance Officer Final Date: May 3, 2018

CASE SUMMARY

Case #2018/0140

Complainant: Office of Indiana State Chemist
175 S. University Street
West Lafayette, Indiana 47907
765-494-1585

Respondent: William Powell — Applicator
Xtreme Aviation
66 E. Piney Grove Road
Falkville, Alabama 35622
256-303-1555

1. On August 21, 2017, I was investigating an aerial drift/fish kill complaint (OISC Case # 2017-1219) near Wabash, Indiana. During the investigation, I learned Vertical Vegetation out of Darlington, Indiana made the aerial application.

2. I made contact with Ms. Amanda Burris, Office Manager at Vertical Vegetation. She confirmed Vertical Vegetation had made the aerial pesticide application to the target field in question. She stated they had sub-contracted Mr. William Powell of Xtreme Aviation out of Falkville, Alabama to make the pesticide application.

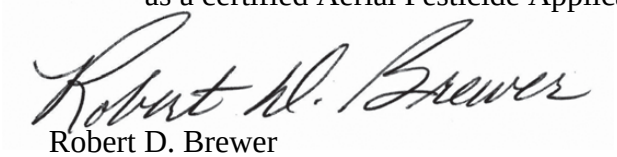
3. I then checked the OISC database and learned Mr. Powell was not a certified Category 11 applicator in the State of Indiana. I contacted Ms. Burris again and advised her of such. She stated it was an oversight on their part, as she assumed Mr. Powell was certified in Indiana as he was in Alabama. I then requested Ms. Burris provide me with all of the aerial pesticide applications made by Mr. Powell in 2017 while contracted by Vertical Vegetation. She provided me with fifteen (15) application records of the applications made by Mr. Powell. A copy of these records are in this case file. All of the pesticide applications occurred on July 17 and 18, 2017. The following is a list of the aerial pesticide applications made by Mr. Powell in Indiana in 2017.

Date	Location - Field
July 17, 2017	Andy Floor Farm – Andy Home
	Andy Floor Farm – RC 5
	McKillip Seeds – Schuler
July 18, 2017	McKillip Seeds – Lennie's North
	McKillip Seeds – Lennie's West 1
	McKillip Seeds – Riverbottom back
	McKillip Seeds – Jackson's
	McKillip Seeds – Conner
	McKillip Seeds – Nate's
	McKillip Seeds – Gilmore

Hettmansperger – Bowen
Advanced Ag – Thomas
Advanced Ag – Titus
Bechtold Farms – Rohrer East
Bechtold Farms – Rohrer West

4. On August 22, 2017, I made contact with Mr. Powell, who had returned to Alabama. He stated he had completely overlooked his licensing renewal in Indiana. He stated he had already sent in the proper paperwork and fees in to OISC to get his license current. I advised him I had obtained records of 15 aerial pesticide applications made by him while sub-contracting with Vertical Vegetation. He stated the records provided to me by Ms. Burris were correct. The records indicated Mr. Powell had applied Headline Amp fungicide EPA Reg. #7969-291 and Fanfare Insecticide EPA Reg. #66222-99. I advised him I would be sending an ACTION ORDER to him ordering him to cease any and all aerial pesticide applications in the State of Indiana until obtaining proper licensing through the Office of Indiana State Chemist. Mr. Powell received the ACTION ORDER; signed it and returned it to me. This Order is in this case file.

5. I checked with Ms. Jill Davis of the OISC licensing Section and she advised that Mr. Powell did send in the proper forms and fees and as of August 29, 2017, he was licensed as a certified Aerial Pesticide Applicator in the State of Indiana.



Robert D. Brewer
Investigator

Date: December 18, 2017

Disposition: William Powell was cited for fifteen (15) counts of violation of section 65(6) of the Indiana Pesticide Use and Application Law, specifically 355 IAC 4-2-2, for making aerial pesticide applications without being a certified applicator in Indiana. A civil penalty in the amount of $3,750.00 (15 counts x $250.00 per count) was assessed. However, the civil penalty was reduced to $1,875.00. Consideration was given to the fact Mr. Powell and Xtreme Aviation cooperated during the investigation and corrective action was taken.

George N. Saxton
Compliance Officer

Draft Date: February 5, 2018
Final Date: March 22, 2018