INDIANA PESTICIDE REVIEW BOARD

Dave Scott, *Secretary*

175 S. University Street
West Lafayette, IN 47907-2063
(765) 494-1492
scottde@purdue.edu

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Developing Dicamba Measurement of Success
& Response Options for 2019 and Beyond

At the January 22, 2019 IPRB quarterly meeting, the Board initiated a process to develop a measurement to evaluate the success of the most recent label revisions to dicamba herbicides (Engenia, FeXapan, and Xtendimax) in significantly mitigating the incidents of off-target movement to sensitive non-target crops and plants in 2019. Following is a summary of the discussions and consensus positions from that meeting.

Year	**2017**	**2018**
Total ag ground application off-target (drift) complaints	234	254
Complaints resulting from dicamba symptomology/misuse reports	134 (57%)	147 (58%)
Dicamba complaints where target crop was soybeans	93%	95%
Dicamba complaints with off-target exposure to non-DT soybeans	93%	93%
Documented drift vs. undetermined routes of exposure (inversion or volatility)	22%	14%
Documented drift management violation of dicamba label (design standards)	93%	86%

Do off-target exposure symptoms to non-DT soybeans without documentation of negative yield impacts meet the federal definition of "adverse effects" and state definition of "harm" under the state drift rule? Yes, off-target exposure symptomology, with or without measured negative yield impacts, must be considered an adverse effect or harm to desirable plants such as non-DT soybeans and should not be accepted as inevitable.

Does the label restriction prohibiting physical drift of the herbicide onto desirable vegetation include off-target movement resulting from application into an inversion? Yes, off-target movement from application into an inversion causes very small spray droplets to be suspended in the air over the treatment site, often moving off-target with wind currents sometime after the actual application has ended. Volatility refers to gasification of the herbicide after it hits the target site. Therefore, movement of spray particles resulting from application into an inversion meets the definition of physical spray drift, even if it occurs after the application has been terminated.

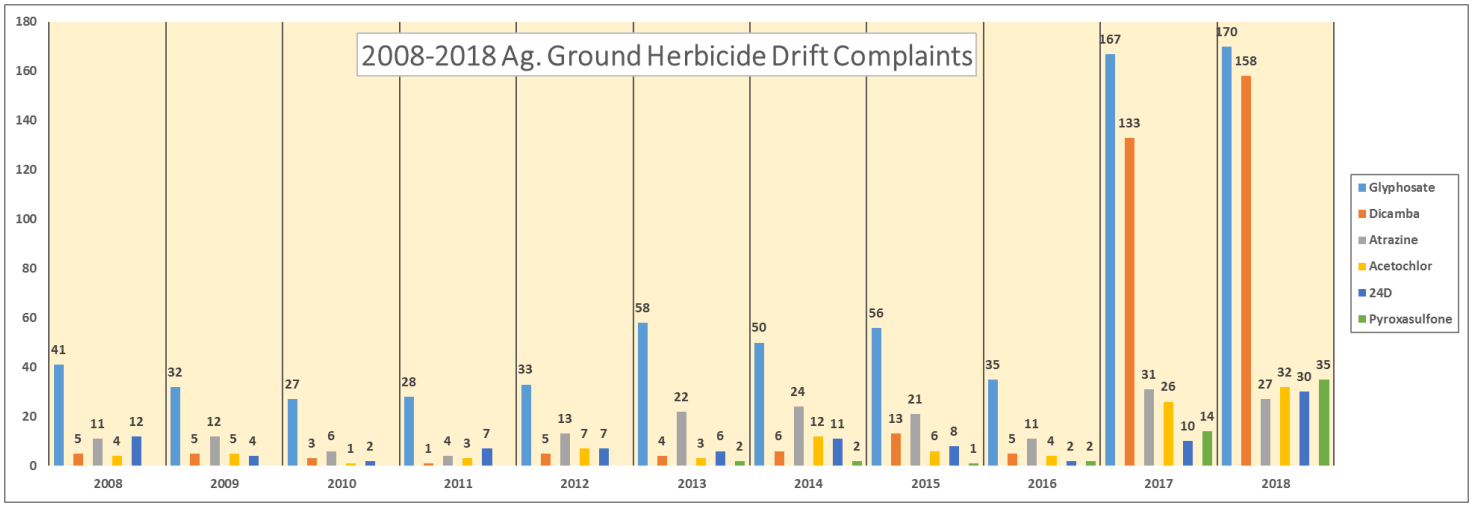
Should off-target incident data other than OISC compliance investigation data be considered when evaluating the measure of success for 2019? Yes, data for evaluation purposes should not be limited solely to OISC compliance investigations, as long as OISC has a process for verifying the data as dicamba exposure and it is not just hearsay. In addition, incident data from other states, including states that may have implemented use restrictions beyond the federal labels, may be considered.

Should only violation rate be considered in the measurement data set? No, all verified incident data is valuable for incident and adverse effect evaluation purposes, regardless if OISC is successful in collecting sufficient evidence to document a violation or no violation.

Is there a target number or percentage of historical dicamba incidents that should define success or the need to initiate a regulatory response above and beyond current label restrictions in 2019? Prior to this meeting an IPRB dicamba work group recommended an application cut-off date of June 20th, based on 2017 and 2018 dicamba application incident data, intended to reduce the 2019 incidents by approximately 50%. The work group also

recommended a ½ mile and ¼ mile downwind buffer requirements. These regulatory recommendations were rejected by agricultural industry representatives petitioning OISC to allow the newest label restrictions to mitigate the risk. Some Board members suggested that restrictions reducing off-target incidents by only 50% in 2019 would not be a success. It was recommended that the target number of documented dicamba off-target movement incidents for measurement in 2019 should not exceed 10% above the number for the active ingredient, other than dicamba, that tops the list of agricultural ground applied herbicides associated with drift complaints.

Drift incident data for agricultural ground applications from 2008 through 2018 is provided in the chart below. The chart identifies the six herbicide active ingredients most often associated with drift complaints to OISC over that ten year period. Glyphosate complaints sky rocketed in 2017 and 2018 by virtue of the fact that glyphosate was almost universally tank mixed with dicamba for these applications. Other active ingredients that were also frequent dicamba tank mix partners showed significant number increases in 2017 and 2018, as well. Minus the influence of tank mixing with dicamba, the herbicides most often associated with drift complaints were glyphosate (34) in 2017 and 2,4-D (30) in 2018.



Next Steps:

OISC shared the content of this summary with a variety of stakeholders prior to the April 8, 2019 IPRB meeting. At the IPRB meeting, it is projected that the Board will determine the appropriate measurement for evaluating the success of the EPA-accepted label in mitigating off-target movement incidents and will determine commensurate regulatory response options for Indiana, if needed. Response options may include:

1. Develop a FIFRA Sec. 24(c) state label, if still permitted by EPA. See https://www.epa.gov/pesticide-registration/guidance-fifra-24c-registrations , and https://www.oisc.purdue.edu/pesticide/iprb/iprb_157_aapco_24c_letter_to_epa.pdf .
2. Work with dicamba product registrants to modify their federal labels voluntarily.
3. Promulgate a state rule for agricultural dicamba application under IC 15-16-5-44(a) "The board may adopt rules under IC 4-22-2 prescribing policies and procedures relating to the use and application of pesticides."
4. Deny 2020 state registration for these products based on 2017, 2018, and 2019 evidence of misbranding, i.e. the labeling accompanying the product does not contain instructions for use that are necessary and, if complied with, adequate for the protection of the public.