

2020

Annual Seed Regulatory Report



Office of
Indiana State Chemist & Seed Commissioner
175 S. University Street
Purdue University
West Lafayette, Indiana 47907

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State Chemist & Seed Commissioner

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2020
Indiana Seed Regulatory Program
Annual Report



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Indiana Seed Control 2020 Annual Report

Presented here within is the 2020 annual report of the Office of Indiana State Seed Commissioner. It represents a summary of official inspectional activities related to seed control in Indiana, as well as laboratory analyses performed on official samples collected under the authority of Indiana Seed Law for agricultural and vegetable seeds distributed in Indiana.



The activities of our seed regulatory program revolve around our mission statement: ***“Provide education and service to consumers of seed and the seed industry and assure a quality product is available in the marketplace and truthfully represented.”***

The Indiana Seed Law is a “truth-in-labeling” law requiring basic quality factors to be expressed to represent a level of quality to potential purchasers and consumers. The purpose of the law is to provide the consumers with adequate information, through fair and consistent labeling, to make intelligent purchases of agricultural and vegetable seed products.

The inspection staff of the Indiana State Chemist and Seed Commissioner provides marketplace surveillance throughout the state through inspectional visits to all retail sales outlets offering seed products for sale. These products routinely consist of various agricultural crop seeds, forage seeds, lawn and turf seeds, and vegetable seed kinds. Samples are obtained through official sampling methods and are analyzed in the Indiana State Seed Laboratory to determine compliance with labeled guarantees.

Our office is a charter member of the Association of American Seed Control Officials (AASCO) and the Association of Official Seed Analysts (AOSA) and we abide by the rules and protocols established by those associations. This report accurately reflects the dedication to our statutory responsibilities to enforce the Indiana Seed Law and provide consumer protection to Indiana farmers, consumers and seedsmen.

Prepared and Submitted By:

A handwritten signature in blue ink, appearing to read 'Donald B. Robison'.

Donald B Robison, MBA
Seed Administrator



ENFORCEMENT ACTIONS ...

Providing education, service and protection to Indiana consumers and industry to assure quality seed products of the highest integrity are truthfully represented and available in the marketplace

- OUR PURPOSE**

The Indiana Seed Law (IC 15-15-1) is administered by the Office of Indiana State Chemist & Seed Commissioner. The purpose of the law is twofold: First, to give the purchaser sufficient information to enable them to buy good seed, and second, to protect the honest and reliable seedsman and the farmer from unscrupulous dealers. Our field, laboratory and office staffs strive to carry out our mission in administration and enforcement of the Act.

- ENFORCEMENT ACTION TAKEN IN 2020**

Enforcement action initiated in 2020 was dictated by the seriousness of the violations found as a result of either laboratory analysis or inspectional observations discovered during facility inspections. Sample numbers were down due to the global pandemic.

Official Samples Tested in 2020:	905	
Official Samples Correctly Labeled:	830	(91.38%)
Samples Incorrectly Labeled:	75	(8.32%)
Samples Voided and/or Cancelled:	1	(duplicate)
Total Tests Completed on Samples:	3,197	

Breakdown of 2020 Violations: *multiple violations per sample in some cases

Minor Violations Based on Product Analysis: (Relabeling Orders):	102	(68%)
Serious Violations Based on Product Analysis: (Stop Sale Orders):	40	(26.7%)
Technical Violations Based on Label Analysis:	8	(5.3%)

Inspector-Issued Stop Sale Orders (Number of Seed Lot's Involved): 97

Laboratory analysis done to verify label claims of "mechanical purity" (included Pure Seed %, other crop seed %, inert matter %, weed seed %, noxious weed seed), seed count, and "viability" (germination, hard seed and dormancy). Additional claims evaluated included genetic trait verification for glyphosate tolerance (by lateral flow immunoassay) and BT traits including Cry1Ab, Cry3Bb, and Cry34, MCry3A, and Cry1F (utilizing lateral flow immunoassay test kits).

* Relabeling orders issued against seed lots classified as "minor" violations as a result of laboratory analysis

** Stop sale action taken against seed lots classified as "serious" violations as a result of laboratory analysis

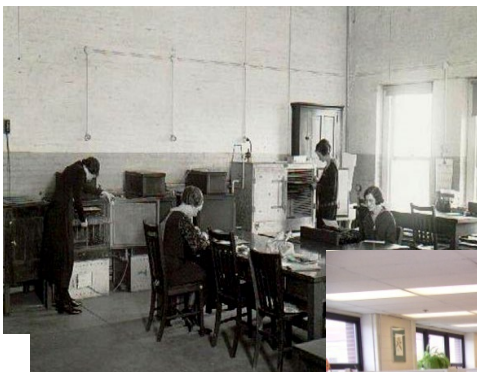
- USDA FEDERAL SEED ACT ENFORCEMENT**

Samples were collected and shipped to USDA, Gastonia NC for Trueness To Variety Testing (TTV). 5 lots of Kentucky 31 Tall Fescue seed were involved in this TTV testing and 1 varieties were found to not be correctly packaged and labeled.

29 samples were sent to the Federal Lab for apparent violations of the Federal Seed Act. 96.5 percent were found to be Federal Violations with a warning letter sent.

OUR PRESENCE IN INDIANA ...

The Indiana Seed Commissioner was established in 1921 with the passage of House Bill No. 99 which was signed into law on February 24, 1921 to create the Indiana Seed Law, a “truth-in-labeling” law.



Seed testing facilities were established at Purdue University following passage of that first law to provide support to enforcement activities conducted under the authority of the law. Testing services were also provided for residents and consumers of the state to assess seed quality on seed purchased and grown by farmers.



State Seed Laboratory, Today

The Office of Indiana State Chemist and Seed Commissioner (OISC) is located on the campus of Purdue University and housed in the Biochemistry Building in the College of Agriculture. This proximity to faculty, researchers and extension staff in the various agricultural sciences is beneficial in providing information on new technologies constantly emerging in the regulated industries OISC comes in contact with.



*Biochemistry Building
175 S. University Street, Purdue University
West Lafayette, IN 47907*

THE INDIANA SEED INDUSTRY

Indiana Seed Permit* holders number 449

(Both in-state and out-of-state distributors)

(* distributors marketing seed under their private label, large increase over 2018 due to hemp seed)

SEED DISTRIBUTION IN INDIANA

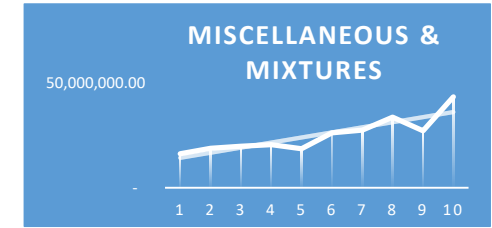
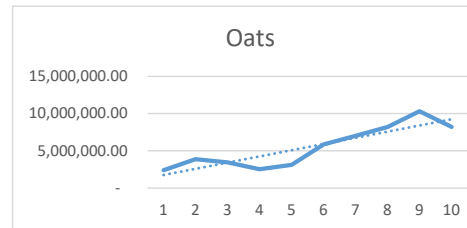
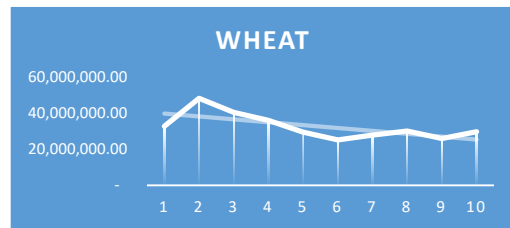
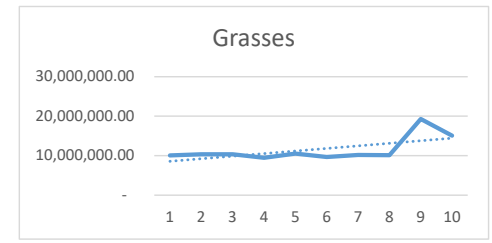
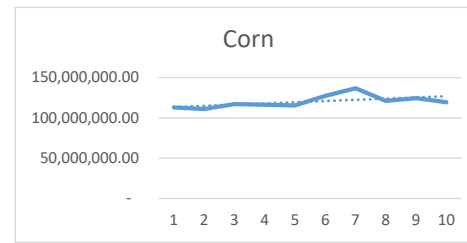
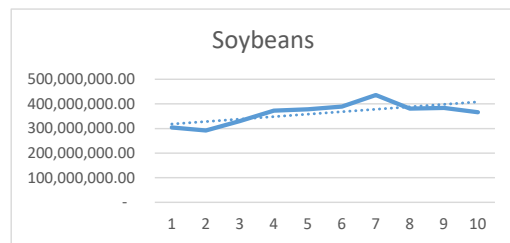
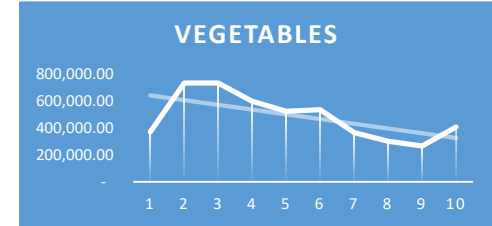
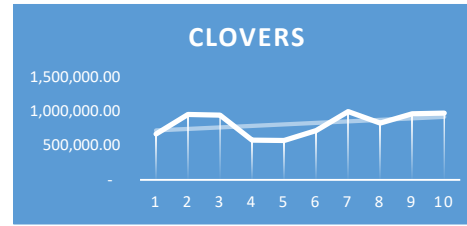
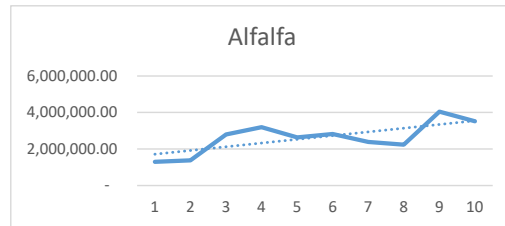
The table on the next page illustrates a breakdown of reported pounds of agricultural and vegetable seeds distributed in Indiana during the calendar years of 2010 to 2019. These figures and categories reported represent those specified on the semi-annual reports submitted from all permit holders licensed to do business in Indiana, as required by the Indiana Seed Law.

The law requires all distributors who cause seed to be distributed in the state to report total sales made. Inspection fees are assessed based on the kind and amount of seed sold. Current fees assessed on total distribution are 30 cents/100 pounds sold for alfalfas, clovers, grasses and vegetables, and 15 cents/100 pounds sold for all other seeds.

Seed Distribution Report
Ten Year

Seed	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Alfalfa	1,299,500.00	1,385,900.00	2,796,000.00	3,197,650.00	2,632,000.00	2,818,360.00	2,393,880.00	2,241,891.00	4,047,138.00	3,515,391.00
Clovers	671,100.00	954,400.00	946,100.00	582,000.00	575,400.00	718,504.00	997,884.00	828,717.00	966,898.00	976,117.00
Vegetables	373,100.00	737,500.00	737,500.00	601,000.00	526,400.00	538,153.00	367,637.00	302,704.00	267,436.00	409,847.00
Grasses	10,095,000.00	10,353,400.00	10,353,400.00	9,468,000.00	10,503,000.00	9,664,594.00	10,164,299.00	10,127,232.00	19,292,354.00	15,057,196.00
Corn	112,816,900.00	111,039,000.00	117,270,700.00	116,224,000.00	115,441,800.00	127,427,645.00	136,766,089.00	121,013,741.00	124,524,106.00	119,422,562.00
Soybeans	304,384,800.00	291,915,700.00	329,752,700.00	372,345,700.00	377,653,900.00	389,585,289.00	435,986,679.00	380,653,045.00	383,253,413.00	365,735,697.00
Wheat	32,746,100.00	48,204,100.00	40,468,300.00	36,009,100.00	29,464,400.00	25,164,329.00	27,771,000.00	30,065,481.00	25,979,043.00	29,692,998.00
Oats	2,400,700.00	3,893,300.00	3,459,800.00	2,529,800.00	3,112,300.00	5,858,697.00	7,010,392.00	8,201,253.00	10,321,454.00	8,216,535.00
Miscellaneous & Mixtures	16,206,000.00	18,781,100.00	19,820,900.00	20,583,500.00	18,594,500.00	26,173,506.00	27,522,255.00	33,620,832.00	27,154,404.00	43,342,445.00

*White Charts represent decreases in seed pounds sold in Indiana from the previous year. Blue Charts represent increases in seed pounds sold in Indiana from the previous year.



PROFESSIONAL AFFILIATIONS ...

The Office of the Indiana Seed Commissioner maintains membership in national seed organizations and associations and agreements with federal agencies.

AASCO (Association of American Seed Control Officials) The Seed Commissioner's office participates as an active member of AASCO. The Association of American Seed Control Officials is an organization of seed regulatory officials from the United States and Canada. The Association was organized in 1949, from an outgrowth of regional meetings held in various parts of the United States. The members meet annually to discuss mutual concerns of seed law enforcement, to be updated on new developments in the seed industry, and to update the Recommended Uniform State Seed Law (RUSSEL) which the organization developed and maintains as a "model" law for states and federal programs.

AOSA (Association of Official Seed Analysts, Inc.) The State Seed Laboratory is a member of the Association of Official Seed Analysts, Inc., (AOSA) a national body responsible for development of uniform testing rules utilized in the U.S. and Canada and recognized internationally. AOSA was formed in 1908 in response to initial attempts by individual states to develop seed laws. This was the beginning of regulated seed commerce in the United States. Initial priorities included, as was defined in the constitution, an attempt to seek uniformity and accuracy in methods, results, and reports. It set as its objective an effort to perfect and make publicly known, through publication, uniform rules for seed testing. Primary functions include:

- Establish the AOSA Rules for Testing Seeds which are generally adopted by most states as the rules for testing seeds in their respective states
- Contribute to the refinement and modification of the rules and procedures for seed testing
- Ensure that testing procedures are standardized between analysts and between laboratories
- Influence and assist in enforcement of appropriate seed legislation at state and federal levels

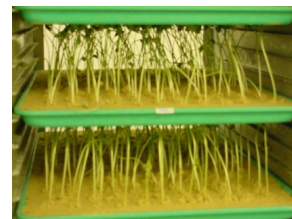
USDA Seed Regulatory & Testing Branch - The Indiana Seed Commissioner's Office maintains Cooperative Agreement #12-25-A-3330 with the USDA Seed Regulatory and Testing Branch for mutual assistance and cooperation in regulatory matters pertaining to seed shipped into the state from out-of-state vendors. The federal agency authorizes the State Seed Commissioner to sample seed and inspect records pertaining to seed shipments made into Indiana subject to the Federal Seed Act. The Federal Seed Act, by virtue of its basic similarity to the Indiana Seed Law, supplements the State Law.

ANALYSIS & TESTING METHODS

The Indiana State Seed Laboratory is an active member of the Association of Official Seed Analysts (AOSA) and the methods used for sample preparation and analysis are those approved by the Association. Under such “Rules for Testing Seeds” a standard analysis has been developed in conjunction with the enforcement of labeling laws that furnishes information as to the composition

of the seed sample and the ability of the seed to produce

plants. The rules, which are routinely followed, summarize and make available the accumulated experience of seed analysts.



The laboratory also offers a service testing program available to the general public. Individuals and/or companies requesting analysis information may submit samples to the laboratory for testing and specify the type of test or tests desired (purity, germination, noxious weed seed exam). Testing fees are \$6 per sample for individual purity, germination and/or identification tests, and \$10 per sample for complete tests (purity, germination, noxious weed exam). Detailed reports of analysis are furnished to the sender at the completion of the testing.

The laboratory also offers immunoassay strip testing for traits in soybeans, corn and alfalfa. This testing is first level testing and can show the presence or absence of these traits. It is accurate to within roughly five percent. If a more detailed test is required we partner with a lab that conducts PCR DNA testing and can quote those tests.

OUR PEOPLE...

Teresa Thompson - Laboratory Technician VII

Teresa began her Purdue career in 2004 working in the Department of Horticulture as a lab technician. She was hired by the Seed Lab in January 2011 as a secretary to the Seed Laboratory and Seed Administrator. In her role she is responsible for data entry of sample information and service seed reports. Teresa has a BS in Agriculture from Purdue University. She assists with visitors, those who send in samples or phone in with questions.

Jessica McVay - Laboratory Coordinator/Feed Microscopist/Certified Seed Analyst – Germination and Purity

Jessica was hired in August 2012 in the laboratory as a Seed Analyst/Feed Microscopist. She holds a BS in Interdisciplinary Biology with a minor in Forensic Science and Sociology from Purdue University. Her Role in the laboratory is to help direct the lab staff in both purity and germination and provide microscopic analysis on animal feed and bird feed products. Her new role of Laboratory Coordinator in June 2016 has her providing leadership to the lab staff and helping direct the workflow.

Emily Morrison - Certified Seed Analyst – Germination and Purity

Emily was hired January 2016 as a Seed Analyst. Her primary role in the lab is to perform physical purity and germination. In 2016, Emily obtained certification in germination testing through AOSA and is continuing her education to pursue certification in physical purity, passing her Purity exam in 2018. Before starting in the Seed Lab she has had previous experience in seed quality testing with Dow AgroScience. She graduated from Purdue University with a BS in Natural Resources and Environmental Science.

Scottie Brittsan - Certified Seed Analyst - Germination

Scottie was hired in June of 2017 as a Seed Analyst. Her primary role in the lab is to work with official samples in both data entry, sample entry and official seed reports. In 2019, Scottie obtained certification in germination and continues training with physical purity. She holds a BS in Entomology and Minors in Plant Sciences and History from Purdue University. Before starting in the Seed Lab she worked in the Purdue Nematode Lab and for the USDA as a Biological Science Aid performing Northern Uniform Soybean Tests.

DETAILED ANNUAL REPORT ON FOLLOWING PAGES...

Table I

Classification of samples by kind and numbers of tests involved.

Number of Samples	Kinds	Purity	Noxious Weed Examinations	Germinations*
179	Vegetable	2	2	192
1,459	Agricultural	704	661	1,498
0	Flower	0	0	0
0	Tree	0	0	0
12	Feed	0	0	12
0	Health Food	0	0	0
1	Pasture Mix	1	1	1
0	Flower Mix	0	0	0
0	Vegetable Mix	0	0	0
0	Conservation Mix	0	0	0
0	Vegetable Kit	0	0	0
3	Lawn Mix	2	1	3
0	Unidentified	0	0	0
1,654	Totals	709	665	1,706

Other Tests	
Interstate Noxious Weed Test	3
Treated Germination Test	0
Cold Test	0
Sand Test	0
Roundup® Ready Test	0
Tetrazolium Test	0
Endophyte Test	0
Ryegrass Fluorescence Test	0
Oats Fluorescence Test	0
Identification Test	4
Miscellaneous Test	0
400 Seed Count Test	0
Seed Count Test	60
Canada Noxious Weed Test	0
Mechanical Seed Count Test	50
Total Tests	3,197

* Includes preliminary and final seedling counts.

SEED ACT ENFORCEMENT

In the enforcement of the Seed Act, Plant Industry Inspectors visit wholesale and retail firms to inspect seed labeling and obtain samples for testing. The inspectors collected 905 seed samples. A total of 78 or 8.62 % of these samples were found to be in violation of the Act. The inspectors also placed 24 lots of seed (1,778 containers) under 'Stop Sale' at 23 locations. These 'Stop Sales' are released when the owner or custodian of the seed follows the recommended procedure to have it relabeled in compliance with the law or otherwise disposed.

The tables on the following pages summarize the Seed Act Activities.

Table II is a comparison of the percentage of all violations for the past three years for all classes of seeds.

Table III summarizes the kinds of agriculture, vegetable and flower seeds tested with the number and percentage violation of each.

Table IV summarizes the inspection record of individual wholesale distributors giving total samples and number correctly labeled or in violation.

Table V represents a summary of crops, varieties and acres inspected by the seed certification program.

Table II

A comparison of violations of seed samples taken by seed inspectors.

Kinds	Number of Samples*	% Violations		
		1/1/2020 - 12/31/2020	1/1/2019 - 12/31/2019	1/1/2018 - 12/31/2018
Vegetable	162	9.26 %	13.33 %	7.91 %
Agricultural	741	8.37 %	17.18 %	13.43 %
Flower	0	0.00 %	0.00 %	0.00 %
Tree	0	0.00 %	0.00 %	0.00 %
Feed	0	0.00 %	0.00 %	0.00 %
Health Food	0	0.00 %	0.00 %	0.00 %
Pasture Mix	1	0.00 %	0.00 %	22.73 %
Vegetable Mix	0	0.00 %	0.00 %	0.00 %
Conservation Mix	0	0.00 %	0.00 %	0.00 %
Vegetable Kit	0	0.00 %	0.00 %	0.00 %
Lawn Mix	1	100.00 %	0.00 %	0.00 %
Totals	905	8.62 %	16.61 %	12.82 %

* Samples collected by seed inspectors 1/1/2020 - 12/31/2020

Explanation of abbreviations used in tables.

- CL – Correctly labeled.
 SV – Serious violation, discrepancy exceeds double the tolerance.
 MV – Minor violation, discrepancy exceeds regular tolerance.
 TV – Technical violation, label does not bear all required information.
 #VIOL – Number of violations.
 %VIOL – Percentage of violations.

Table III

Total of each kind tested, number and percentage of violations.

Seed Kind Tested	Vegetable Seeds						
	Total	CL	SV	TV	MV	#VIOL	%VIOL
Arugula, Rocketsald, Roquette	2	2	0	0	0	0	0.00 %
Bean, Garden	14	12	0	0	2	2	14.29 %
Bean, Red Kidney	1	1	0	0	0	0	0.00 %
Beets	6	5	0	0	1	1	16.67 %
Broccoli	4	4	0	0	0	0	0.00 %
Brussels-Sprouts	4	4	0	0	0	0	0.00 %
Cabbage	8	7	0	0	1	1	12.50 %
Cantaloupe, Muskmelon	1	1	0	0	0	0	0.00 %
Carrot	6	6	0	0	0	0	0.00 %
Cauliflower	1	1	0	0	0	0	0.00 %
Celery and Celeriac	1	1	0	0	0	0	0.00 %
Collards	2	1	1	0	0	1	50.00 %
Corn, Sweet	25	24	0	1	0	1	4.00 %
Cucumber	7	7	0	0	0	0	0.00 %
Endive	1	1	0	0	0	0	0.00 %
Kale	4	4	0	0	0	0	0.00 %
Leek	1	0	0	0	1	1	100.00 %
Lettuce	16	15	1	0	0	1	6.25 %
Mustard	1	1	0	0	0	0	0.00 %
Onion	13	12	0	0	1	1	7.69 %
Pak choi, pok choi or bok choy	2	2	0	0	0	0	0.00 %
Parsley	1	0	0	0	1	1	100.00 %
Parsnip	1	0	0	0	1	1	100.00 %
Pea, Garden	4	4	0	0	0	0	0.00 %
Pepper	4	4	0	0	0	0	0.00 %
Radish	5	4	0	0	1	1	20.00 %
Ryegrass (mixes)	1	1	0	0	0	0	0.00 %
Spinach	5	5	0	0	0	0	0.00 %
Squash	4	3	0	1	0	1	25.00 %
Swiss Chard	1	0	0	0	1	1	100.00 %
Tomato	7	6	1	0	0	1	14.29 %

Seed Kind Tested	Vegetable Seeds						
	Total	CL	SV	TV	MV	#VIOL	%VIOL
Turnip	4	4	0	0	0	0	0.00 %
Watermelon	2	2	0	0	0	0	0.00 %
Total	159	144	3	2	10	15	9.43 %

Seed Kind Tested	Agricultural Seeds						
	Total	CL	SV	TV	MV	#VIOL	%VIOL
Alfalfa	16	12	1	2	1	4	25.00 %
Alkaligrass, Weeping	1	0	0	0	1	1	100.00 %
Annual Rape and Winter Rape	1	1	0	0	0	0	0.00 %
Barley	1	1	0	0	0	0	0.00 %
Bean, Garden	1	1	0	0	0	0	0.00 %
Beet, Sugar	1	0	1	0	0	1	100.00 %
Beets	1	1	0	0	0	0	0.00 %
Bluegrass, Kentucky	63	48	3	0	12	15	23.81 %
Brassica VNS	4	1	2	0	1	3	75.00 %
Brome, Alaska	1	0	1	0	0	1	100.00 %
Brome, Prairie	1	1	0	0	0	0	0.00 %
Buckwheat	1	1	0	0	0	0	0.00 %
Cabbage	1	1	0	0	0	0	0.00 %
Carrot	2	1	0	0	1	1	50.00 %
Chicory	6	3	1	0	2	3	50.00 %
Clover, Alsike	1	0	1	0	0	1	100.00 %
Clover, Arrowleaf	4	4	0	0	0	0	0.00 %
Clover, Berseem	5	3	1	0	1	2	40.00 %
Clover, Crimson	13	8	2	0	3	5	38.46 %
Clover, Ladino and White	11	6	2	0	3	5	45.45 %
Clover, Red	16	12	1	0	3	4	25.00 %
Collards	2	2	0	0	0	0	0.00 %
Corn, Hybrid Field	134	133	0	1	0	1	0.75 %
Corn, Sweet	1	1	0	0	0	0	0.00 %
Fescue, Chewings	7	7	0	0	0	0	0.00 %
Fescue, Creeping Red	31	20	1	0	10	11	35.48 %
Fescue, Meadow	1	0	0	0	1	1	100.00 %
Fescue, Tall	117	97	4	2	14	20	17.09 %
Festulolium	1	1	0	0	0	0	0.00 %
Fine Fescue	13	9	1	0	3	4	30.77 %
Kale	1	1	0	0	0	0	0.00 %
Kohlrabi	1	1	0	0	0	0	0.00 %
Lespedeza, Korean	1	1	0	0	0	0	0.00 %

Seed Kind Tested	Agricultural Seeds						
	Total	CL	SV	TV	MV	#VIOL	%VIOL
Lettuce	2	1	0	0	1	1	50.00 %
Millet, Pearl	1	1	0	0	0	0	0.00 %
Oat and red oat	17	11	2	0	4	6	35.29 %
Orchardgrass	5	3	0	0	2	2	40.00 %
Parsnip	1	1	0	0	0	0	0.00 %
Pea, Field	5	3	0	0	2	2	40.00 %
Popcorn	7	7	0	0	0	0	0.00 %
Radish	11	8	1	0	2	3	27.27 %
Rape, Turnip; Rape, Bird	6	4	1	0	1	2	33.33 %
Rye	31	27	1	0	3	4	12.90 %
Ryegrass (mixes)	38	26	1	0	11	12	31.58 %
Ryegrass, Annual; Ryegrass, Italian	18	12	3	0	3	6	33.33 %
Ryegrass, Intermediate	1	1	0	0	0	0	0.00 %
Ryegrass, Perennial	44	39	3	0	2	5	11.36 %
Sorghum-Sudangrass Hybrid	2	2	0	0	0	0	0.00 %
Soybean	209	208	0	0	1	1	0.48 %
Spinach	1	1	0	0	0	0	0.00 %
Timothy	2	2	0	0	0	0	0.00 %
Tomato	1	1	0	0	0	0	0.00 %
Triticale	4	2	0	0	2	2	50.00 %
Turnip	4	2	1	0	1	2	50.00 %
Vetch, Hairy	2	1	1	0	0	1	50.00 %
Wheat	50	48	1	1	0	2	4.00 %
Total	923	789	37	6	91	134	14.52 %

Seed Kind Tested	Pasture Mix						
	Total	CL	SV	TV	MV	#VIOL	%VIOL
Pasture Mix	1	1	0	0	0	0	0.00 %

Seed Kind Tested	Lawn Mix						
	Total	CL	SV	TV	MV	#VIOL	%VIOL
Lawn Mix	1	0	0	0	1	1	100.00 %

Table IV

Vegetable Seeds Wholesale Distributors			Vegetable Seeds			
			CL	SV	TV	MV
AGRIGOLD	SAINT FRANCISVILLE	IL	1	0	0	1
AMERICAN SEED CORP	NORTON	MA	6	0	0	0
BENTLEY SEED CO	CAMBRIDGE	NY	3	0	0	0
BOTANICAL INTERESTS, INC	BROOMFIELD	CO	8	0	0	0
BURPEE GARDEN PRODUCTS	WARMINSTER	PA	33	0	0	0
CAUDILL SEED & WAREHOUSE CO, INC	LOUISVILLE	KY	7	0	0	0
CROP TECH SEED COMPANY	VINCENNES	IN	5	0	0	0
DIRECT ENTERPRISES INC	WESTFIELD	IN	8	0	0	0
DLF	HALSEY	OR	1	0	0	0
E & R SEED	MONROE	IN	3	1	1	0
LAKE VALLEY SEED	BOULDER	CO	2	0	0	0
LIVINGSTON SEED COMPANY	NORTON	MA	22	0	0	3
OLDS GARDEN SEED	HALL	NY	13	0	0	1
PLANTATION PRODUCTS LLC	NORTON	MA	14	1	0	1
RENEE'S GARDEN	FELTON	CA	0	0	0	1
RUPP SEEDS INC	WAUSEON	OH	1	0	0	0
SEEDS OF CHANGE	COMPTON	CA	8	0	0	1
SEEDWAY LLC	HALL	NY	5	0	0	0
SEMINIS VEGETABLE SEEDS INC	OXNARD	CA	1	0	0	0
SYNGENTA SEEDS LLC	NAMPA	ID	0	0	1	0
THE PAGE SEED COMPANY	GREENE	NY	2	1	0	1
WETSEL SEED COMPANY	HARRISONBURG	VA	0	0	0	1
WHITETAIL INSTITUTE OF NORTH AMERICA	PINTLALA	AL	1	0	0	0
		Total	144	3	2	10

Agricultural Seeds Wholesale Distributors			Agricultural Seeds			
			CL	SV	TV	MV
1ST CHOICE SEEDS	RUSHVILLE	IN	4	0	0	0
ADVANCED TURF SOLUTIONS	FISHERS	IN	4	0	0	0
AG PLUS, INC	SOUTH WHITLEY	IN	3	0	0	0
AGRICULTURAL ALUMNI SEED IMPROVEMENT ASSOC, INC	ROMNEY	IN	3	0	0	0
AGRIGOLD	SAINT FRANCISVILLE	IL	7	0	0	0
AGRIMAXX WHEAT COMPANY, LLC	MASCOUTAH	IL	3	0	0	0
AGVENTURE, INC	JOHNSTON	IA	15	0	0	0
ANDERSON SEED OF DASSEL LLC	DASSEL	MN	1	0	0	0
ASGROW SEED CO	CREVE COEUR	MO	35	0	0	0
BARENBRUG USA INC	TANGENT	OR	20	5	0	7
BASF AGRICULTURAL SOLUTIONS SEED US LLC	DURHAM	NC	6	0	0	0

Agricultural Seeds Wholesale Distributors			Agricultural Seeds			
			CL	SV	TV	MV
BECK'S SUPERIOR HYBRIDS, INC	ATLANTA	IN	19	0	0	0
BENTLEY SEED CO	CAMBRIDGE	NY	6	0	0	1
BIG SKY WHOLESALE SEEDS	SHELBY	MT	1	0	0	0
BIO-TOWN SEEDS INC	REYNOLDS	IN	5	0	0	0
BIOLOGIC LLC	WEST POINT	MS	2	0	0	0
BURPEE GARDEN PRODUCTS	WARMINSTER	PA	4	0	0	0
BYRON SEEDS, LLC	ROCKVILLE	IN	29	0	0	3
CAMERON T MILLS	WALTON	IN	1	0	0	0
CAUDILL SEED & WAREHOUSE CO, INC	LOUISVILLE	KY	5	2	0	1
CAUDILL SEED COMPANY	MOREHEAD	KY	0	0	0	1
CENTRAL FARM SUPPLY OF KY, INC	LOUISVILLE	KY	1	0	0	0
CHANNEL BIO LLC	CREVE COEUR	MO	15	0	0	0
CLEMENTS AG SUPPLY, INC	SPRINGFIELD	KY	1	0	0	0
COLUMBIA SEEDS	ALBANY	OR	1	0	0	0
COVER CROP SERVICES	SHIPSHEWANA	IN	2	0	0	0
CROP TECH SEED COMPANY	VINCENNES	IN	4	0	0	0
DAIRYLAND SEED COMPANY, INC	KEWASKUM	WI	8	0	0	0
DEKALB GENETICS CORP	CREVE COEUR	MO	9	0	0	0
DENZLER SEEDS INC	MILTON	IN	5	0	0	1
DISCOUNT SEEDS, INC	WATERTOWN	SD	3	0	0	1
DLF	HALSEY	OR	38	1	2	9
DOMAIN OUTDOOR LLC	HUDSON	WI	0	1	0	0
EBBERTS FIELD SEEDS INC	COVINGTON	OH	5	0	0	0
ERWIN KEITH INC.	WYNNE	AR	0	1	0	0
FOSTERS INC	EAST PEORIA	IL	3	0	0	1
FRONTIERSMEN INC	KENTLAND	IN	4	0	0	0
GREEN THUMB COMMODITIES LLC	OLDHAM	SD	1	0	0	0
GROWMARK INC	BLOOMINGTON	IL	0	0	1	0
HIGHTOWER PRODUCTS	WALNUT CREEK	OH	0	1	0	0
HOOSIER PRIDE GENETICS, INC	VINCENNES	IN	6	0	0	0
HUBNER SEEDS CO	CREVE COEUR	MO	4	0	0	0
HURT SEED CO INC	HALLS	TN	2	0	0	0
J.R. SIMPLOT COMPANY	LIBERTY LAKE	WA	3	0	0	0
JONATHAN GREEN & SONS INC	HOWELL	NJ	5	0	0	2
KINGSBURY ELEVATOR INC	LA PORTE	IN	1	0	0	0
KRUGER SEEDS	DIKE	IA	1	0	0	0
LA CROSSE FORAGE & TURF SEED LLC	ELWOOD	IN	1	0	0	0
LA CROSSE SEED LLC	LA CROSSE	WI	11	0	0	0
LAKE VALLEY SEED	BOULDER	CO	2	0	0	0
LANDMARK TURF AND NATIVE SEED	SPOKANE	OR	1	0	0	0
LEGG SEEDS LLC	WINDFALL	IN	3	0	0	0
LESCO INC	CLEVELAND	OH	2	0	0	0

Agricultural Seeds Wholesale Distributors			Agricultural Seeds			
			CL	SV	TV	MV
LEWIS SEED CO, INC	LOUISVILLE	KY	7	0	0	1
LG SEEDS	ELMWOOD	IL	3	0	0	0
LORD SEED FARMS	WALTON	IN	0	1	0	0
LOVELAND PRODUCTS INC	LOVELAND	CO	28	0	0	0
M.S. TECHNOLOGIES LLC	WEST POINT	IA	1	0	0	0
MARTIN SEEDS INC	WILLIAMSPORT	IN	6	0	0	0
MCKILLIP SEEDS INC	WABASH	IN	3	0	0	0
MILLBORN SEEDS INC	BROOKINGS	SD	1	0	0	0
MOORE SEED FARM LLC	ELSIE	MI	2	0	0	0
MOUNTAIN VIEW SEEDS LTD	SALEM	OR	5	0	0	0
MYCOGEN SEEDS	INDIANAPOLIS	IN	9	0	0	0
NATIONAL SEED	LISLE	IL	2	0	0	0
NRG AG SERVICES & SUPPLIES	NEW ROSS	IN	1	0	0	0
NUTRIEN AG SOLUTIONS, INC.	SWITZ CITY	IN	0	0	1	0
PARTNERS BRAND SEED CO. LLC	HOWE	IN	6	0	0	0
PENNINGTON SEED CO	LEBANON	OR	1	0	0	0
PENNINGTON SEED INC	GREENFIELD	MO	8	0	0	1
PERFORMANCE FARM SOLUTIONS LLC	FRANKFORT	IN	1	0	0	0
PERFORMANCE SEED	WAITE PARK	MN	0	1	0	0
PIONEER HI-BRED INTERNATIONAL INC	JOHNSTON	IA	35	0	0	0
PLANTATION PRODUCTS LLC	NORTON	MA	8	0	0	1
POWELL ACE HOME CENTER	WEST LEBANON	IN	0	0	0	1
PRINCE CORPORATION	MARSHFIELD	WI	1	0	0	0
PRO HARVEST SEEDS INC	ASHKUM	IL	0	1	0	0
PURPLE RIBBON SEEDS INC	MARSHALL	IN	9	0	0	0
RAGAN & MASSEY INC	PONCHATOU LA	LA	2	0	0	0
RURAL KING	MATTOON	IL	8	0	0	0
RURAL KING	WAVERLY	OH	1	0	0	0
SADDLE BUTTE AG INC	TANGENT	OR	4	0	0	1
SCOTT PET PRODUCTS	ROCKVILLE	IN	2	2	0	0
SEED CONSULTANTS INC	WASHINGTON COURT HOUSE	OH	1	0	0	0
SEEDWAY LLC	HALL	NY	1	0	0	0
SHAKER PRAIRIE SEEDS, LLC	OAKTOWN	IN	0	0	0	1
SOUTH FORK SEED SERVICE	REELSVILLE	IN	1	0	0	0
SOUTHERN STATES COOPERATIVE, INC	LOUISVILLE	KY	2	0	0	0
SPECIALTY HYBRIDS	ST. LOUIS	MO	8	0	0	0
STEWART SEED CO	GREENSBURG	IN	24	0	0	0
STINE SEED COMPANY	ADEL	IA	21	0	0	0
STONE SEED CO	CREVE COEUR	MO	2	0	0	0
SUNSTAR HYBRIDS	CULVER	IN	8	0	0	0
SUPERIOR AG RESOURCES CO-OP	HUNTINGBURG	IN	3	0	0	0

Agricultural Seeds Wholesale Distributors			Agricultural Seeds			
			CL	SV	TV	MV
SUPERIOR SEED INC	RUSHVILLE	IN	3	0	0	0
SYNGENTA	MINNEAPOLIS	MN	3	0	0	0
SYNGENTA SEEDS LLC	NAMPA	ID	3	0	0	0
TENBARGE SEED CO, INC.	HAUBSTADT	IN	9	0	0	0
THE CISCO COMPANIES	INDIANAPOLIS	IN	17	0	0	1
THE SCOTTS COMPANY	MARYSVILLE	OH	6	0	0	1
TRI-STAR SEED CO., INC.	SPRING HILL	KS	5	0	0	2
TURNER SEED INC	ANTIOCH	TN	23	1	0	1
TURNER SEED INC	ANTIOCH	TN	2	0	0	0
VOID OR MISC SAMPLE OISC	WEST LAFAYETTE	IN	1	0	0	0
WALNUT CREEK SEEDS LLC	CARROLL	OH	1	0	0	0
WEAVER POPCORN	VAN BUREN	IN	1	0	0	0
WEAVER POPCORN COMPANY, INC	WHITESTOWN	IN	3	0	0	0
WESTERN EXCELSIOR	EVANSVILLE	IN	1	0	0	0
WHITETAIL INSTITUTE OF NORTH AMERICA	PINTLALA	AL	2	0	0	1
WINFIELD SOLUTIONS LLC	NAMPA	ID	32	0	2	0
WYATT SEED COMPANY	PETERSBURG	IN	3	0	0	0
WYCKOFF HYBRIDS INC	VALPARAISO	IN	9	0	0	0
YERKS SEED INC	WOODBURN	IN	3	0	0	0
		Total	667	17	6	39

Pasture Mix Wholesale Distributors			Pasture Mix			
			CL	SV	TV	MV
WYATT SEED COMPANY	PETERSBURG	IN	1	0	0	0
		Total	1	0	0	0

Lawn Mix Wholesale Distributors			Lawn Mix			
			CL	SV	TV	MV
JONATHAN GREEN & SONS INC	HOWELL	NJ	0	0	0	1
		Total	0	0	0	1