Pesticide Laws and Regulations

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Terminology

Pesticide – substance or mixture of substances intended to prevent, destroy, repel, or mitigate any pest or intended for use as a plant regulator, defoliant or desiccant.

What is a pest?

Google what is a pest

pest

/pest/

See definitions in:

All | Zoology | Farming | Pathology

noun

1. a destructive insect or other animal that attacks crops, food, livestock, etc.
   "the tomato plant attracts a pest called whitefly"




2. **INFORMAL**
   an annoying person or thing; a nuisance.
   "he was a real pest"

Similar: nuisance | bother | annoyance | irritation | irritant

Where do we find pesticides?

License Requirements - CEUs

Private – license renewal every five years – must obtain 15 CEUs with at least 2 in L&R and 2 in IPM

Comm./Noncommercial – license must be renewed annually – must obtain 5 CEUs with one hour each from 2 of 3 categories – L&R, IPM, or drift minimization

SPCS Certified Applicator- CEUs

Applicators must earn two CEUs in general training and one in each category in which the applicator is certified.

Of the two general category units, at least one must be in federal and state laws, pesticide safety, environmental protection or integrated pest management.

“NON SCHOLAE SED VITAE DISCIMUS”

WE LEARN NOT FOR SCHOOL BUT FOR LIFE

Seneca

Recordkeeping

Private applicators must keep records on all RUP/SLU/RH applications

Commercial and Noncommercial must keep records on all applications

Records must be kept for 2 years

History of Pesticides

"To be ignorant of what occurred before you were born is to remain always a child."

Marcus Tullius Cicero

106-43 BC

History of Pesticides

1200 B.C. – Egyptians use hemlock and aconite for pests

1000 B.C. – Homer describes Odysseus' use of burning sulfur to fumigate

Cato and Varro, who suggested the application of amurca, the watery and often salty residue obtained when the oil is drained from crushed olives, as a herbicide

~60 B.C.

“But to me it seems the mark of a very poor farmer to allow grass to grow among his crops, for it detracts greatly from the yield if weeding is neglected.”
Columella, *De Re Rustica,* II, XI, 6. Written around 60 A.D.

History of Pesticides

800 A.D. – Chinese mix arsenic with water for insect control

1649 – Rotenone, extracted from several plants, used

1669 – Arsenic added to honey to create ant bait (stomach)

1690 – Tobacco used to control pear insects (contact)

1773 – Tobacco (nicotine) heated to control insects (first fumigant)

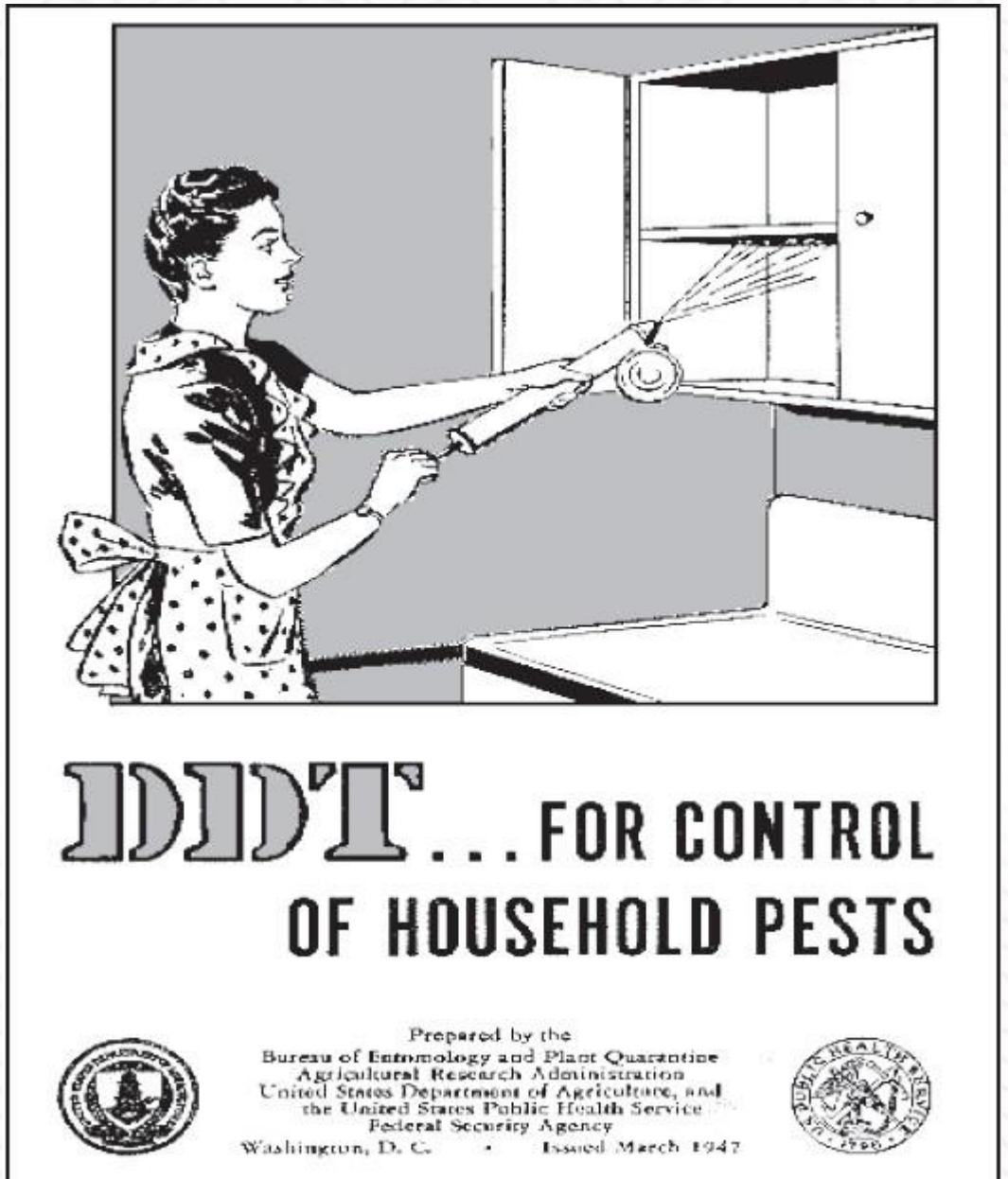
History of Pesticides

1800- First recorded use of “Persian louse powder” – pyrethrum

1882 – Lime and copper sulfate used on grapes

1890 – Mercury dust used as seed treatment

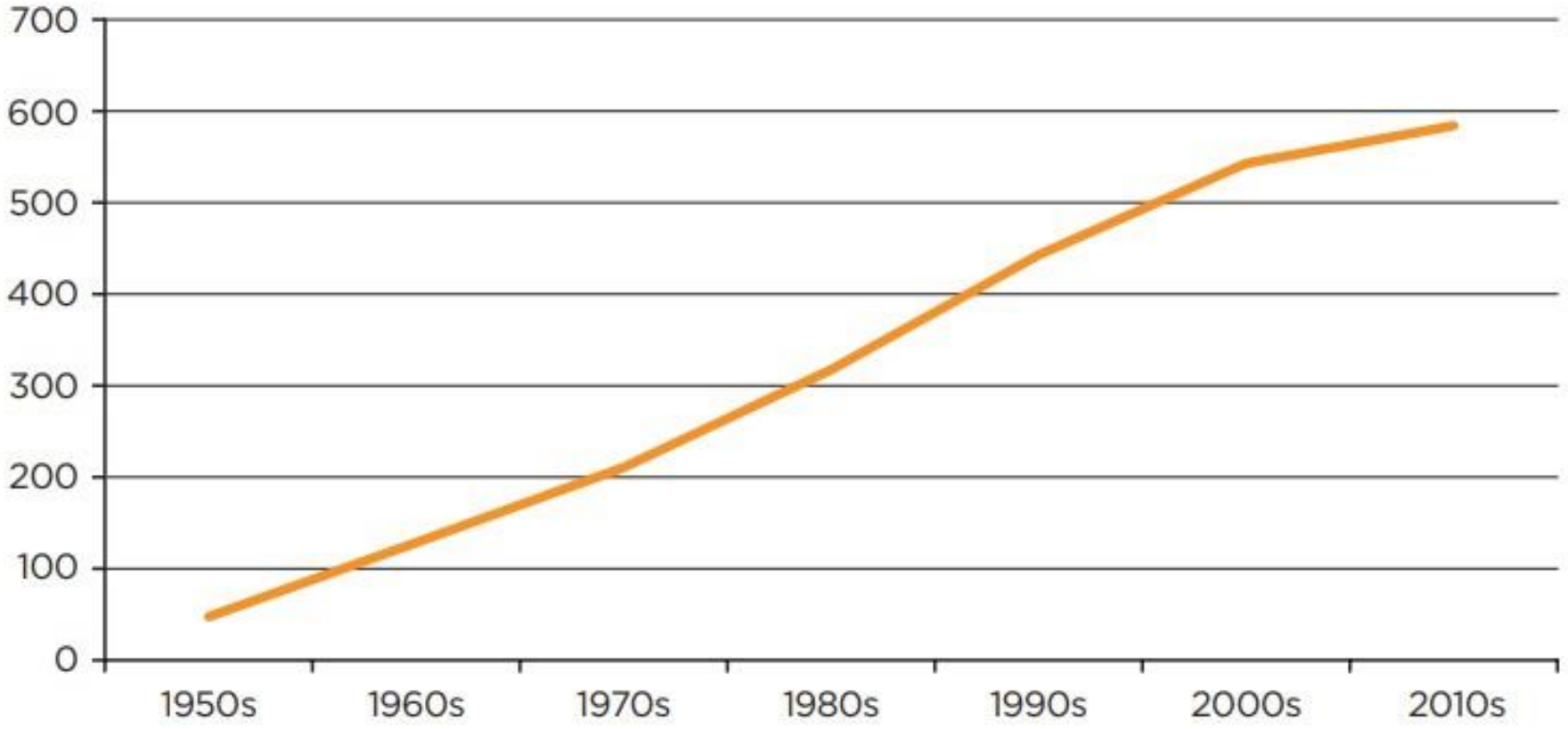
1939 – DDT discovered – used in 2nd half of WWII to control malaria and typhus among civilians and troops



1970

- Congress creates the U.S. Environmental Protection Agency (U.S. EPA) to bring cohesion to expanding federal environmental programs. Both the USDA pesticide registration functions and U.S. Food and Drug Administration's tolerance-setting authority were transferred to U.S. EPA.

Figure 1: Total number of active ingredients available globally



Source: Philips McDougall, 2018

Figure 2: Number of new active ingredients introduced per decade: 1950s to present day

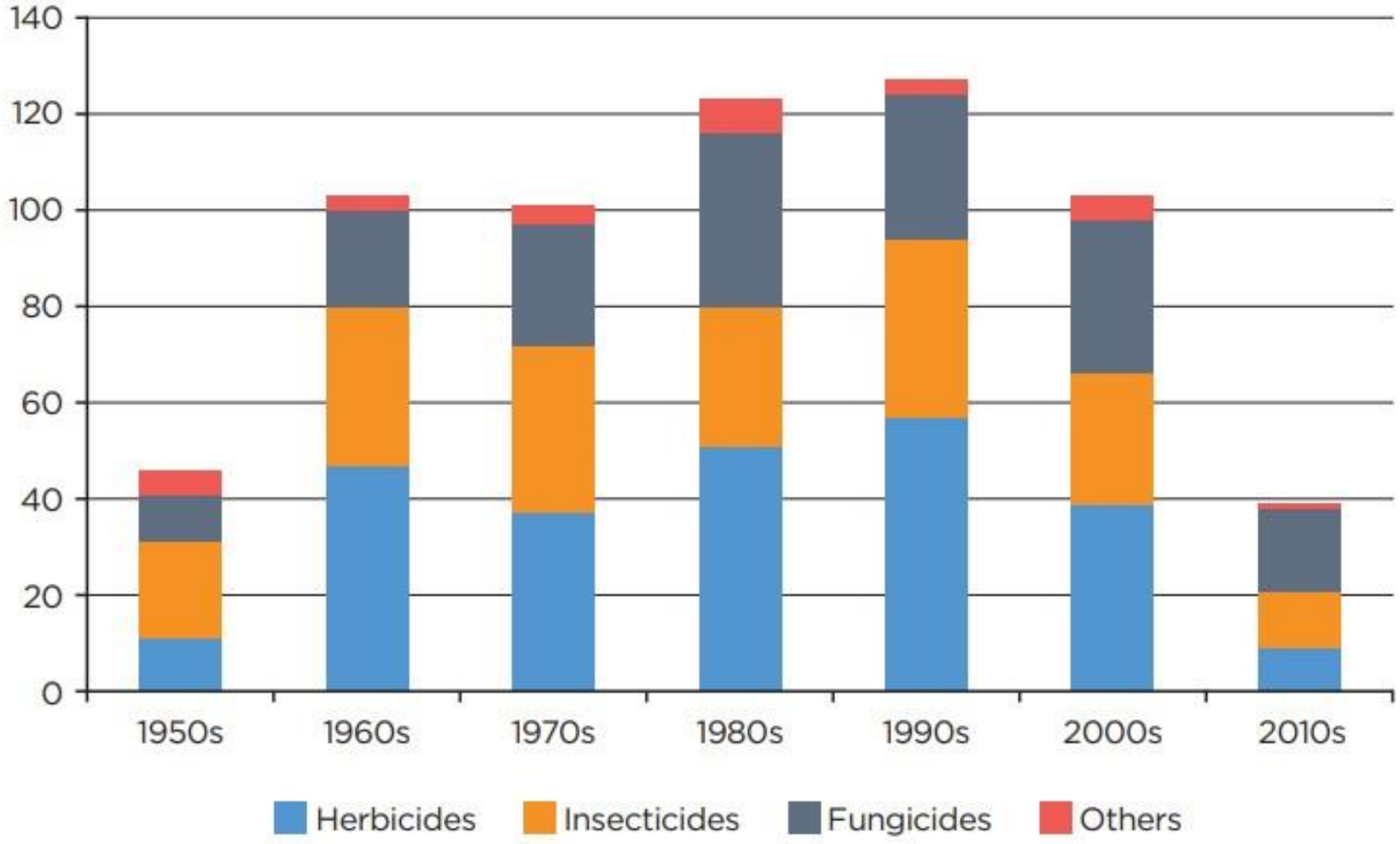


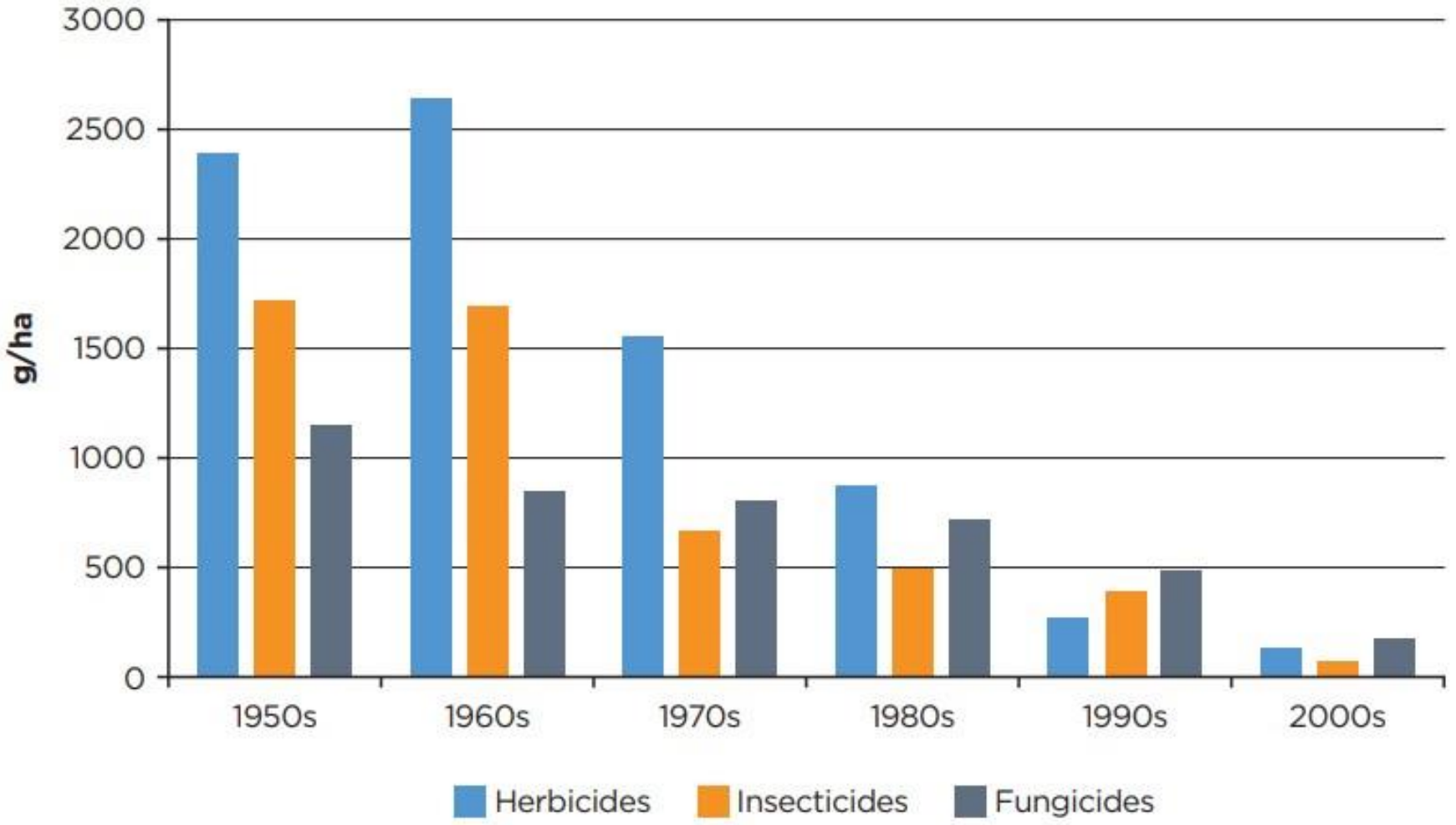
Table 1: Top 10 products used in major US crops by volume in 1968 and 2016

Top 10 products in 1968	Top 10 products in 2016
Atrazine	Glyphosate
Toxaphene – ***banned***	Metolachlor
DDT – ***banned****	Pyraclostrobin
2,4-D	Mesotrione
Methyl parathion – ***banned***	Thiamethoxam
Aldrin – ***banned***	Acetochlor
Trifluralin	Azoxystrobin
Propachlor	Atrazine
Dinoseb – ***banned***	Abamectin
Chloramben – ***banned***	Clothianidin

Source: Fernandez-Cornejo et al; Phillips McDougall

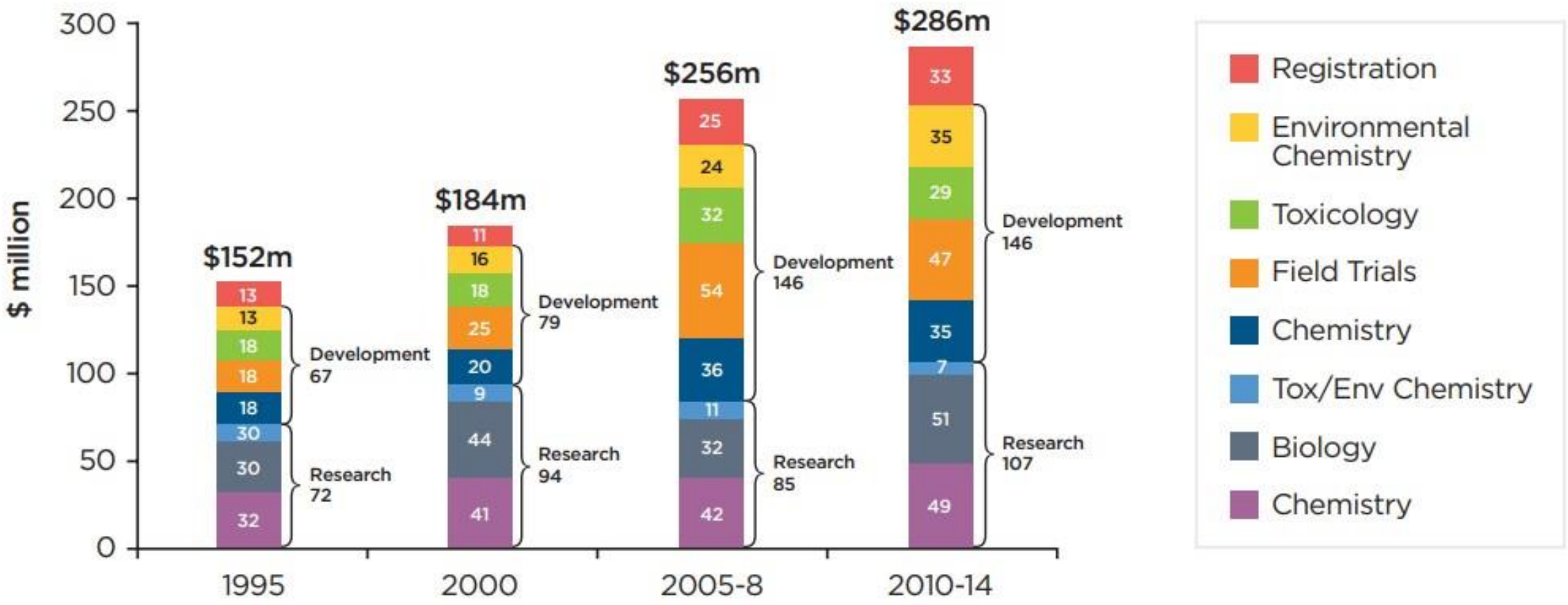
*DDT is banned as an agricultural and household pesticide, but it is still allowed for vector control in some countries when locally safe, effective and affordable alternatives are not available.

Figure 5: Average active ingredient application rates over time



Source: Phillips McDougall, 2017

Figure 6: Discovery and development costs of a new crop protection product



Source: Phillips McDougall, 2016

Over the same period the time to develop and launch a new product has increased from 8.3 years to 11.3 years (Table 6).

Figure 7: Number of active ingredients falling into different safety classifications as a function of the decade in which they were introduced

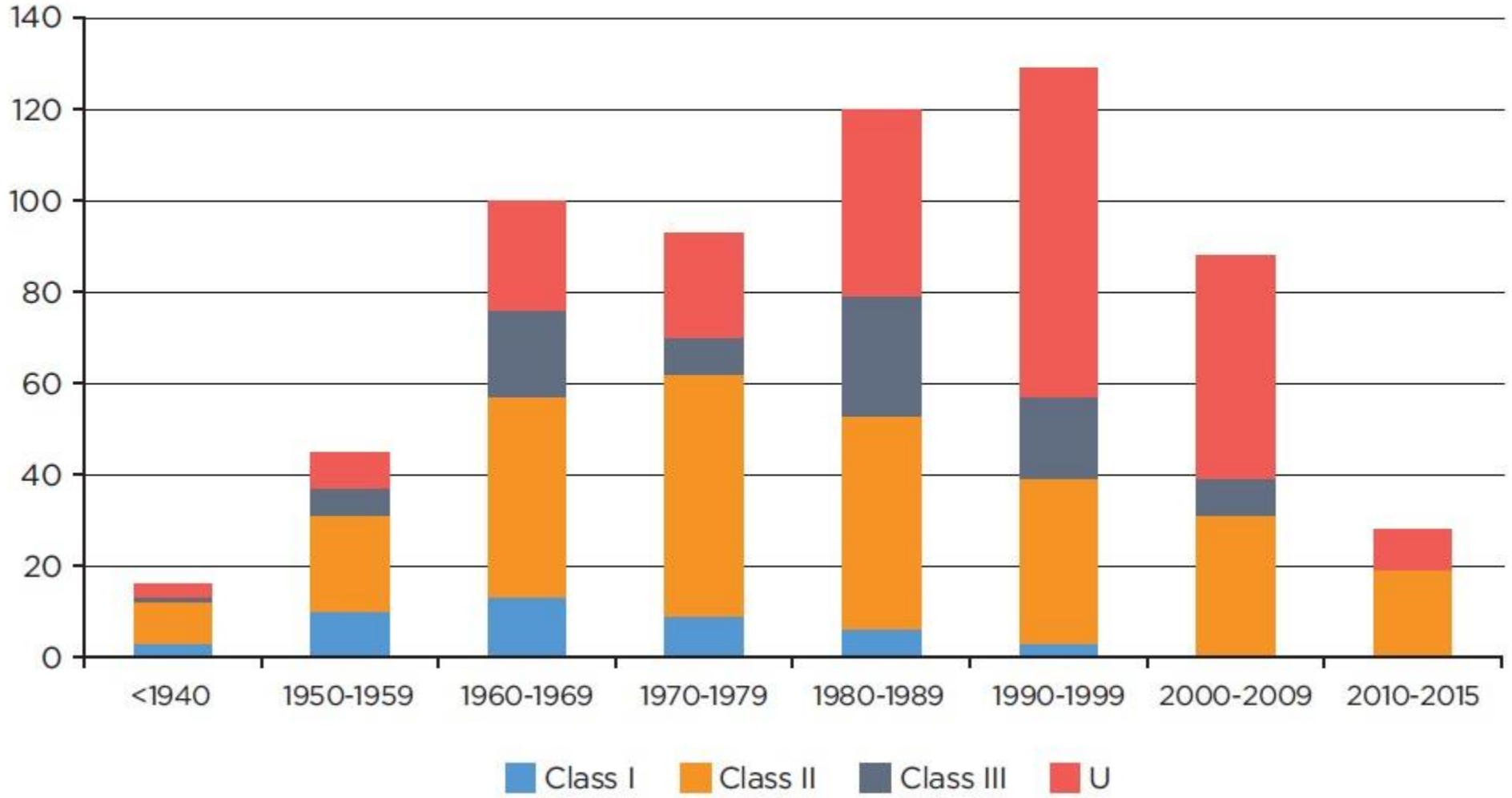
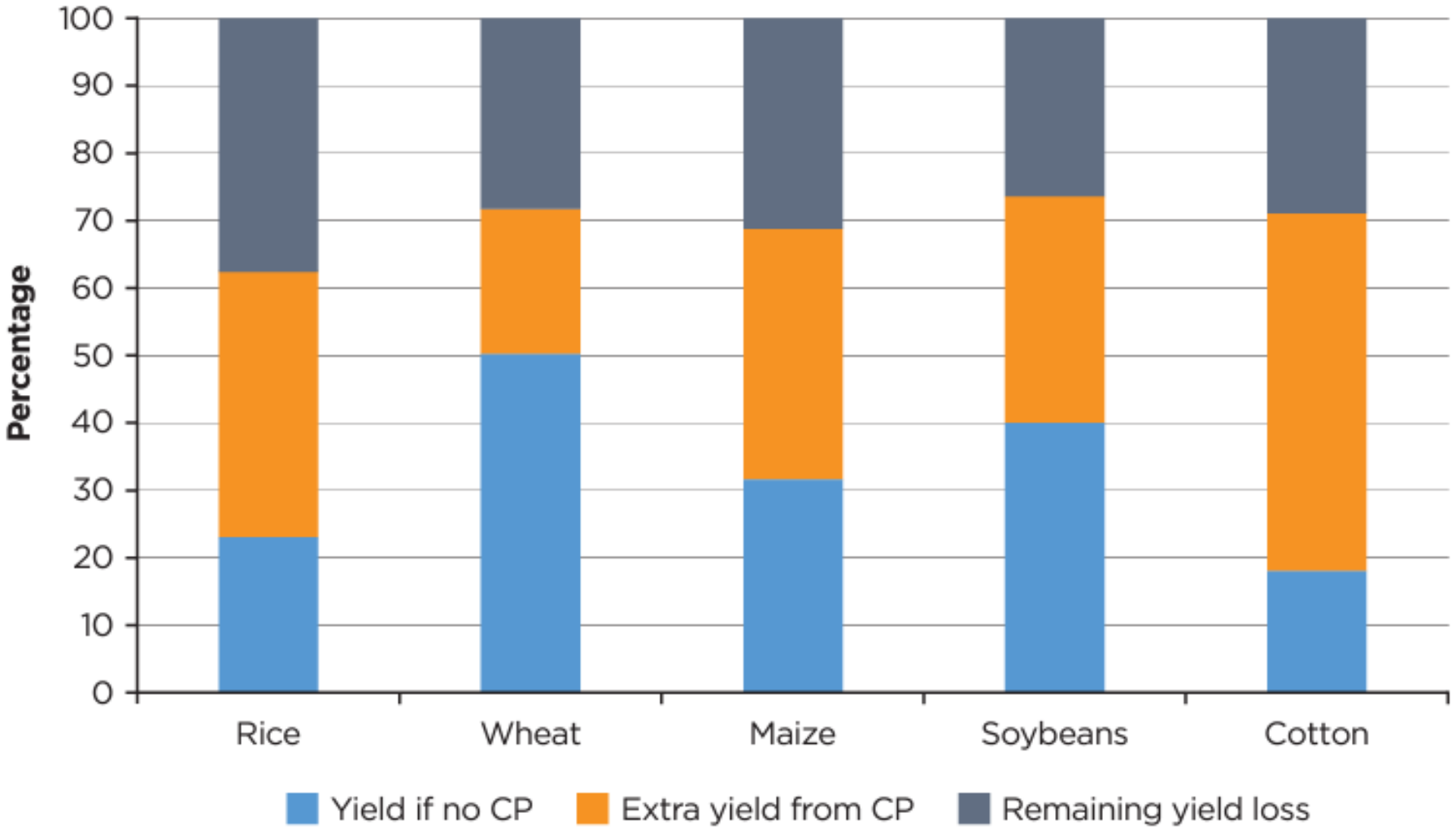
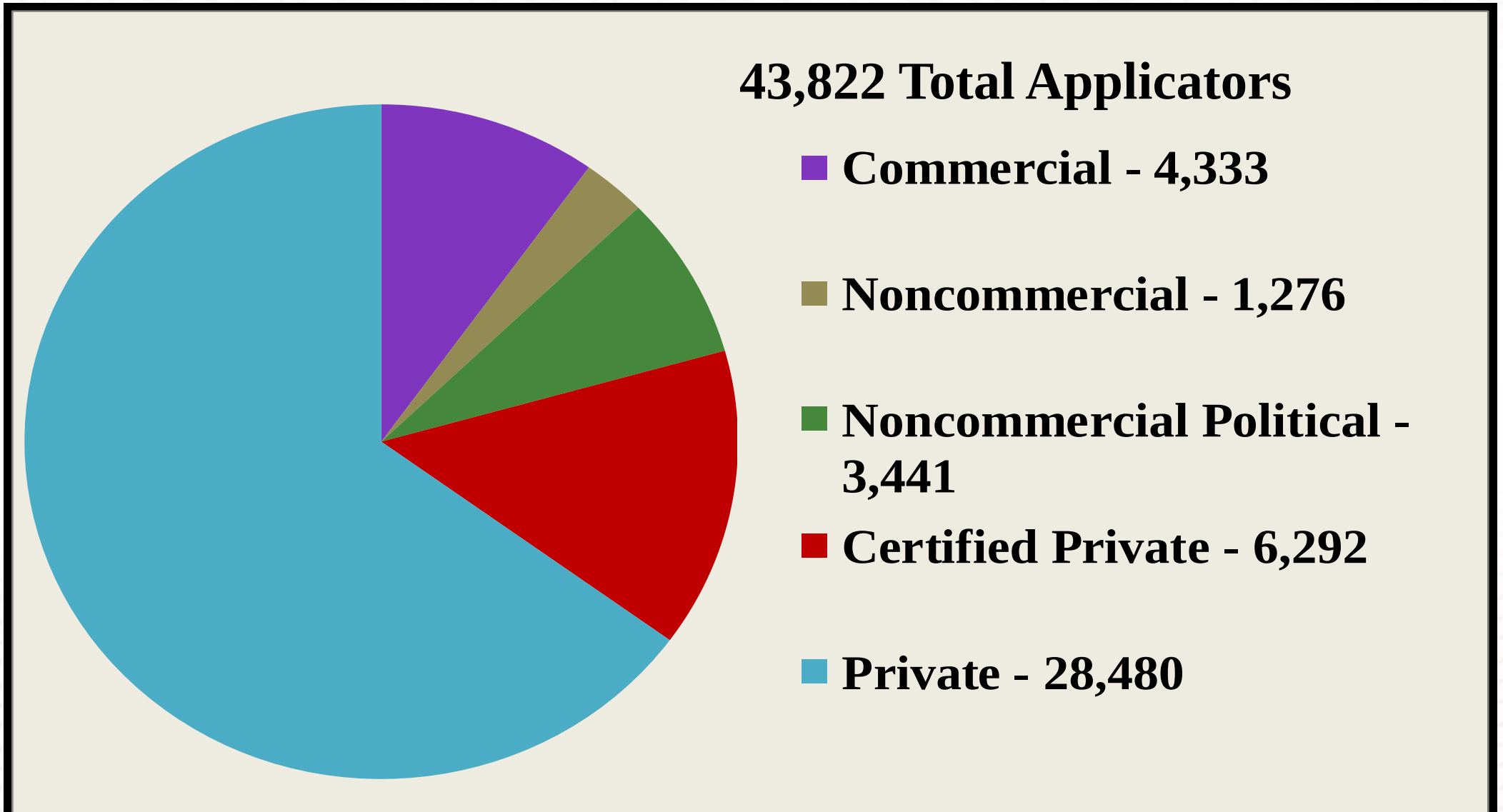


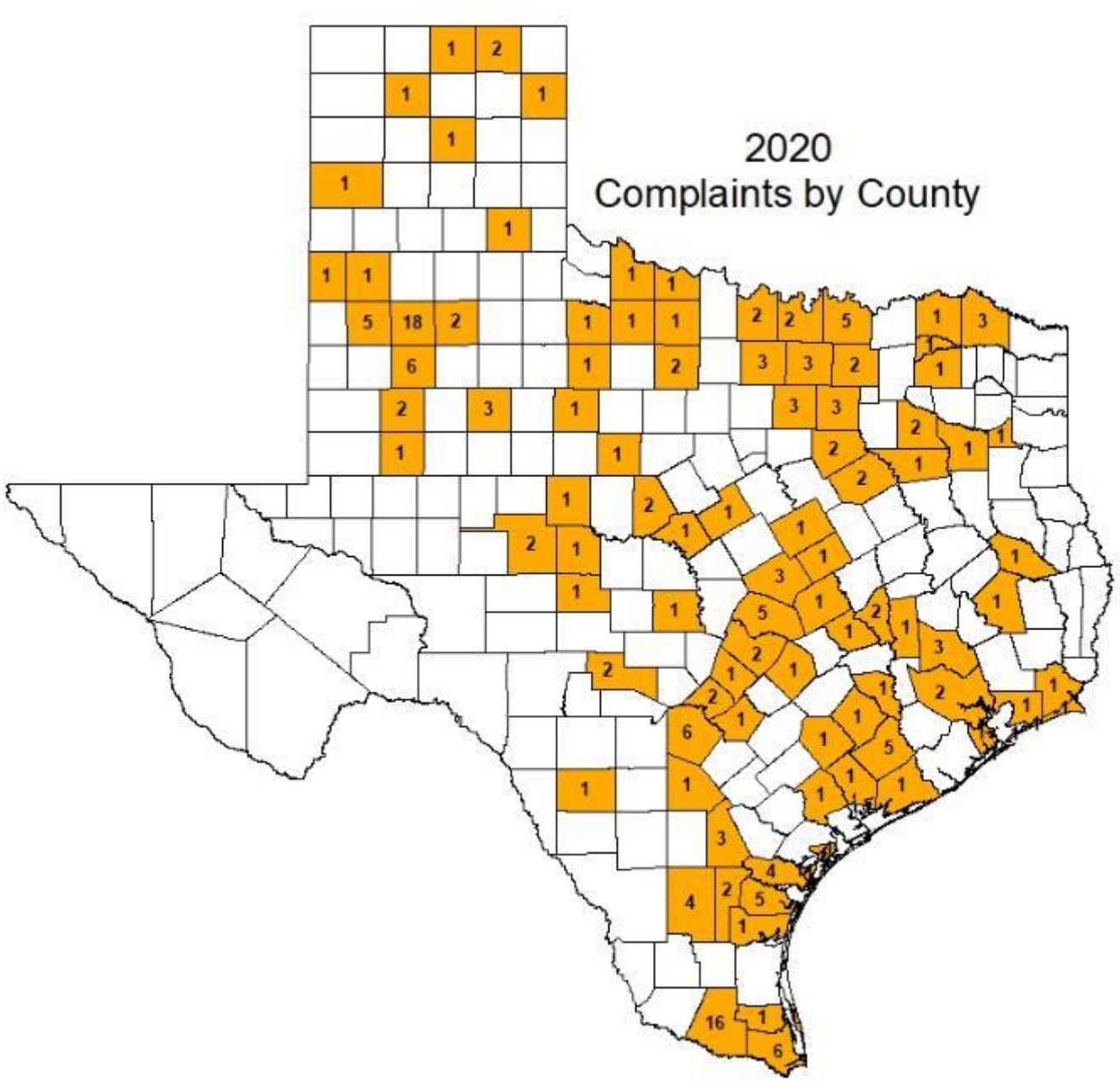
Figure 10: Yield losses with and without crop protection products



Ag Pesticide Applicators Currently Licensed



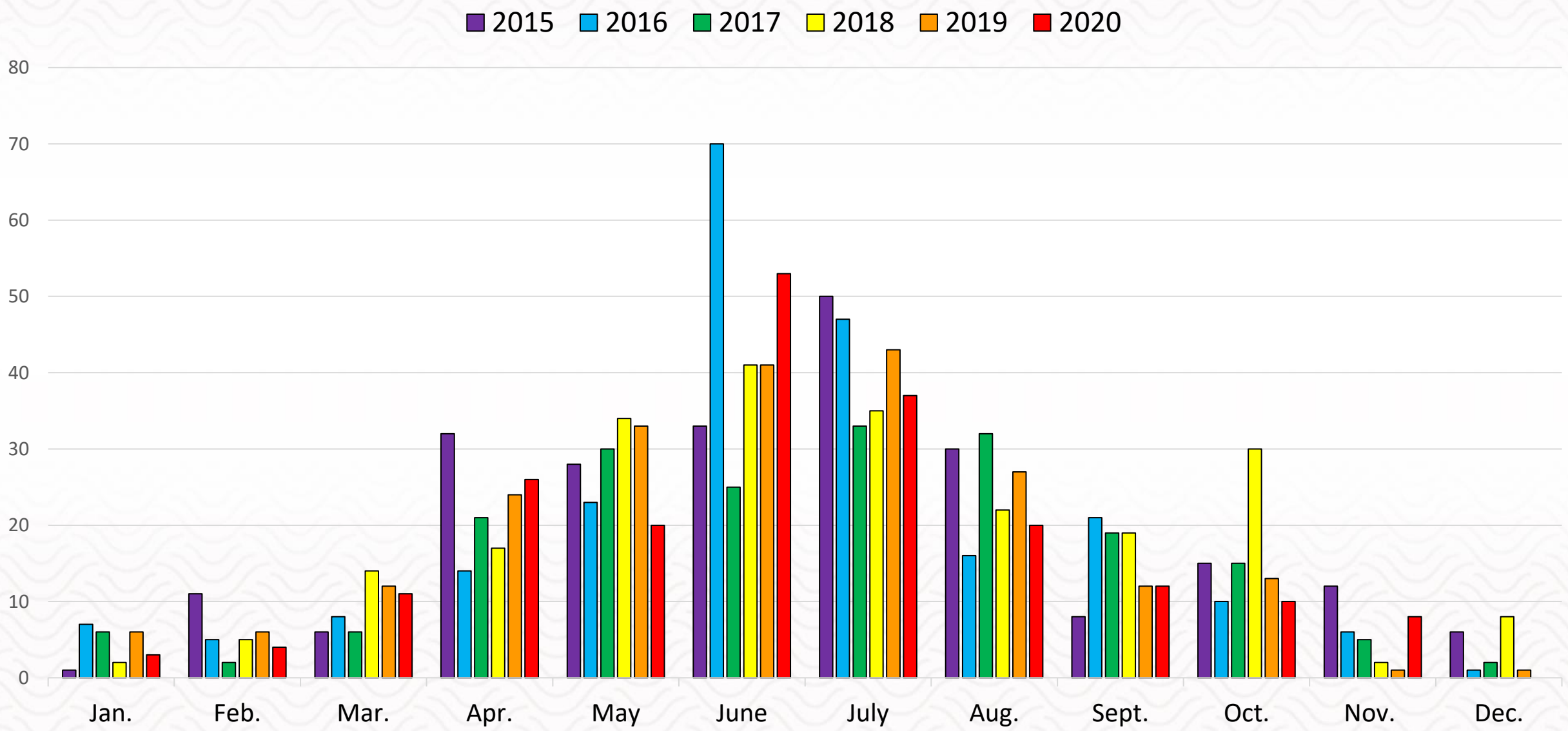
Pesticide Applicator Complaints: Types and Reasons



2020 Fiscal Year

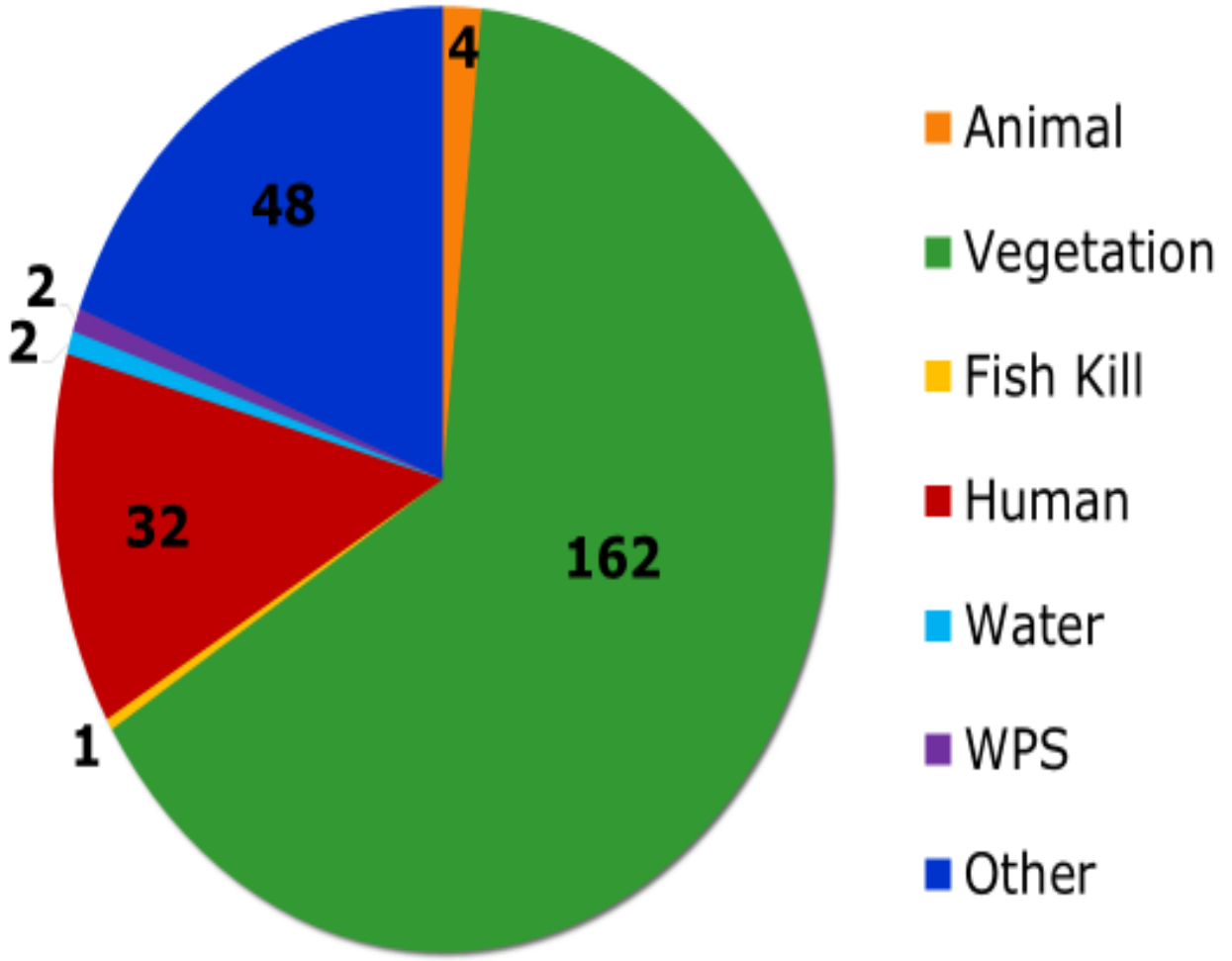
- 201 Ag Complaints
- TDA has:
  - ➢27 Agricultural Inspectors
  - ➢15 Structural Inspectors
  - ➢254 Counties in Texas
- They also conduct thousands of routine inspections on applicators, dealers, and businesses every year

Complaints by Month



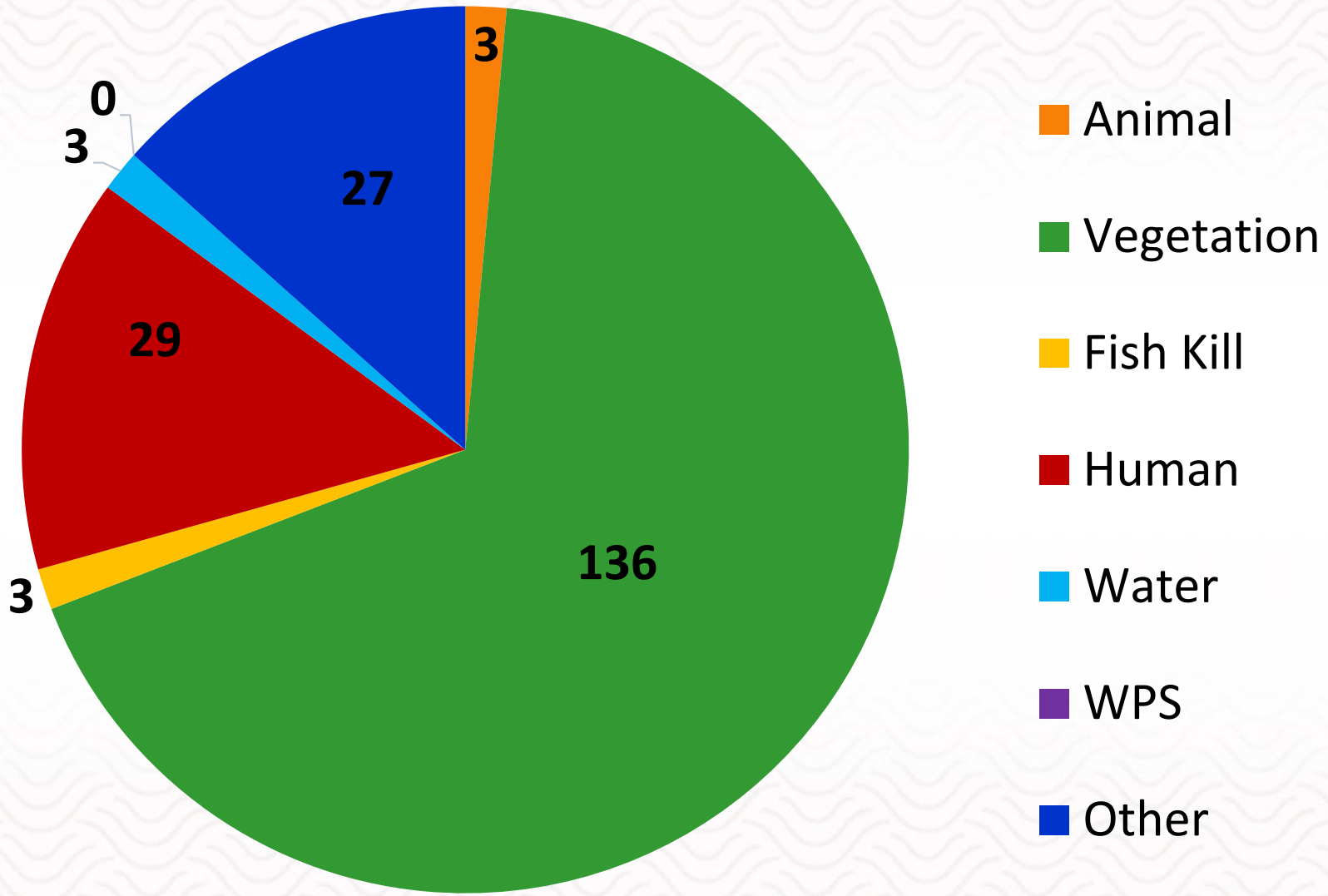
2019 Fiscal Year Complaints

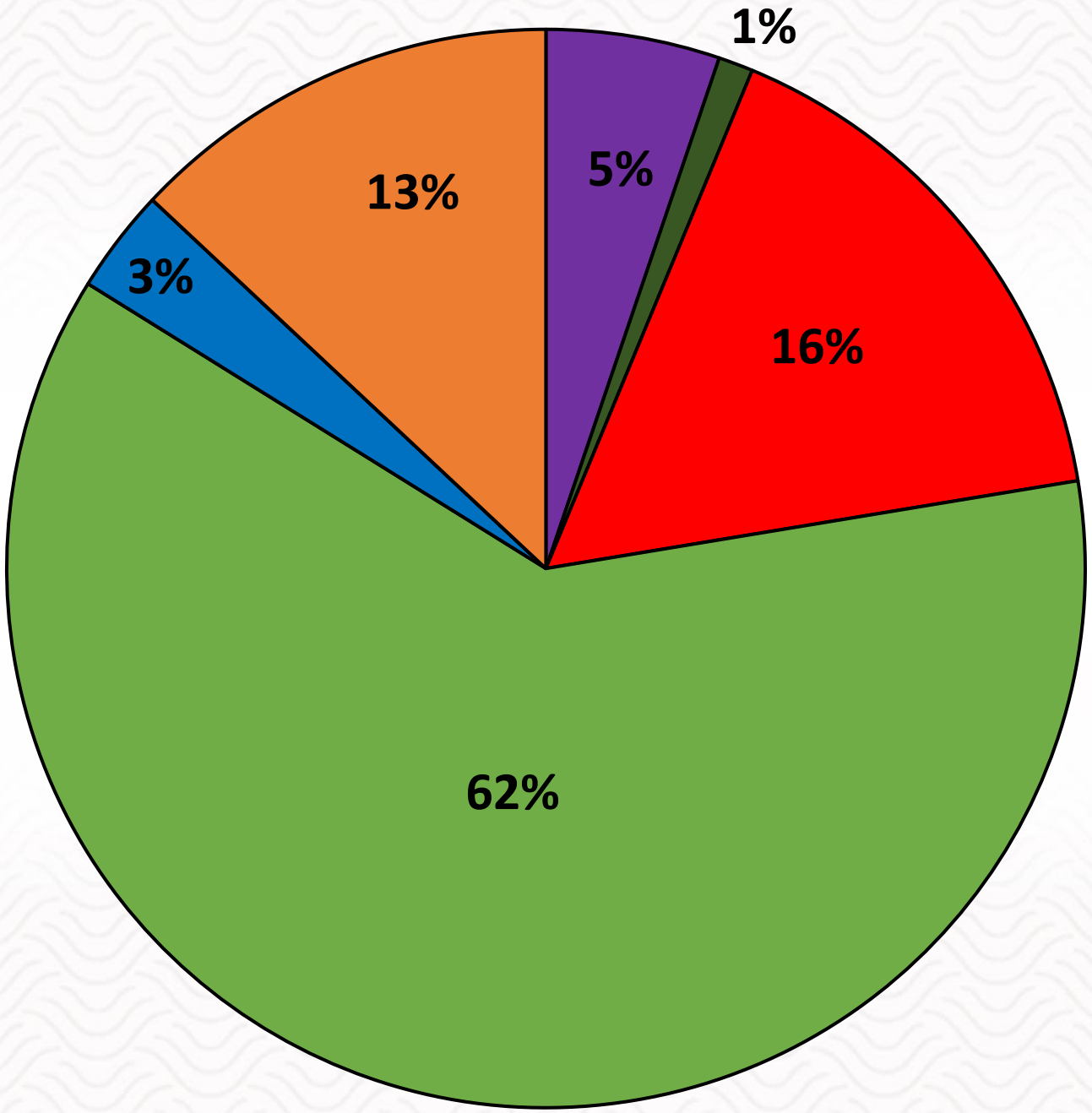
65% of complaints are vegetation related



2020 Complaints

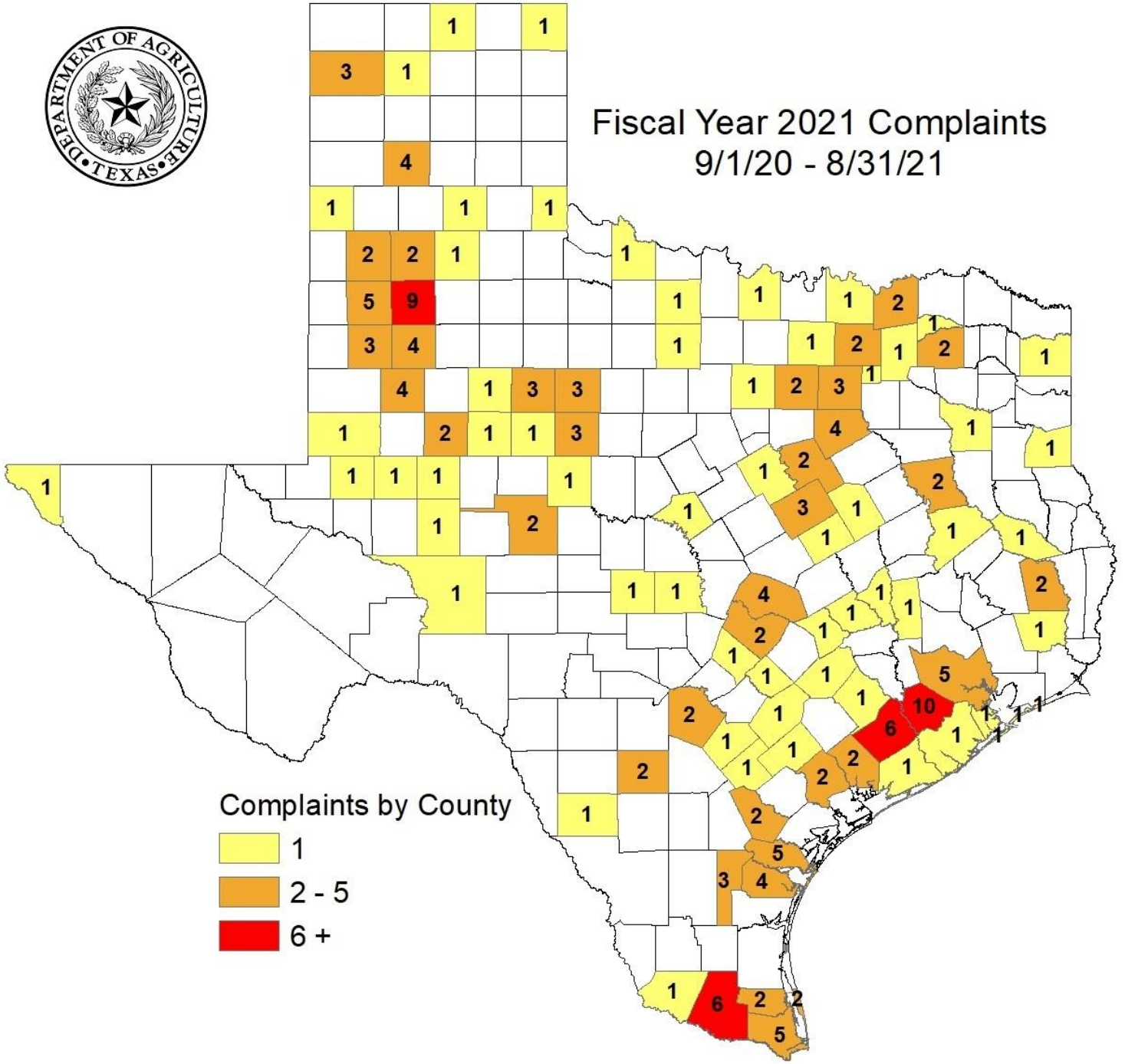
68% of complaints are vegetation related

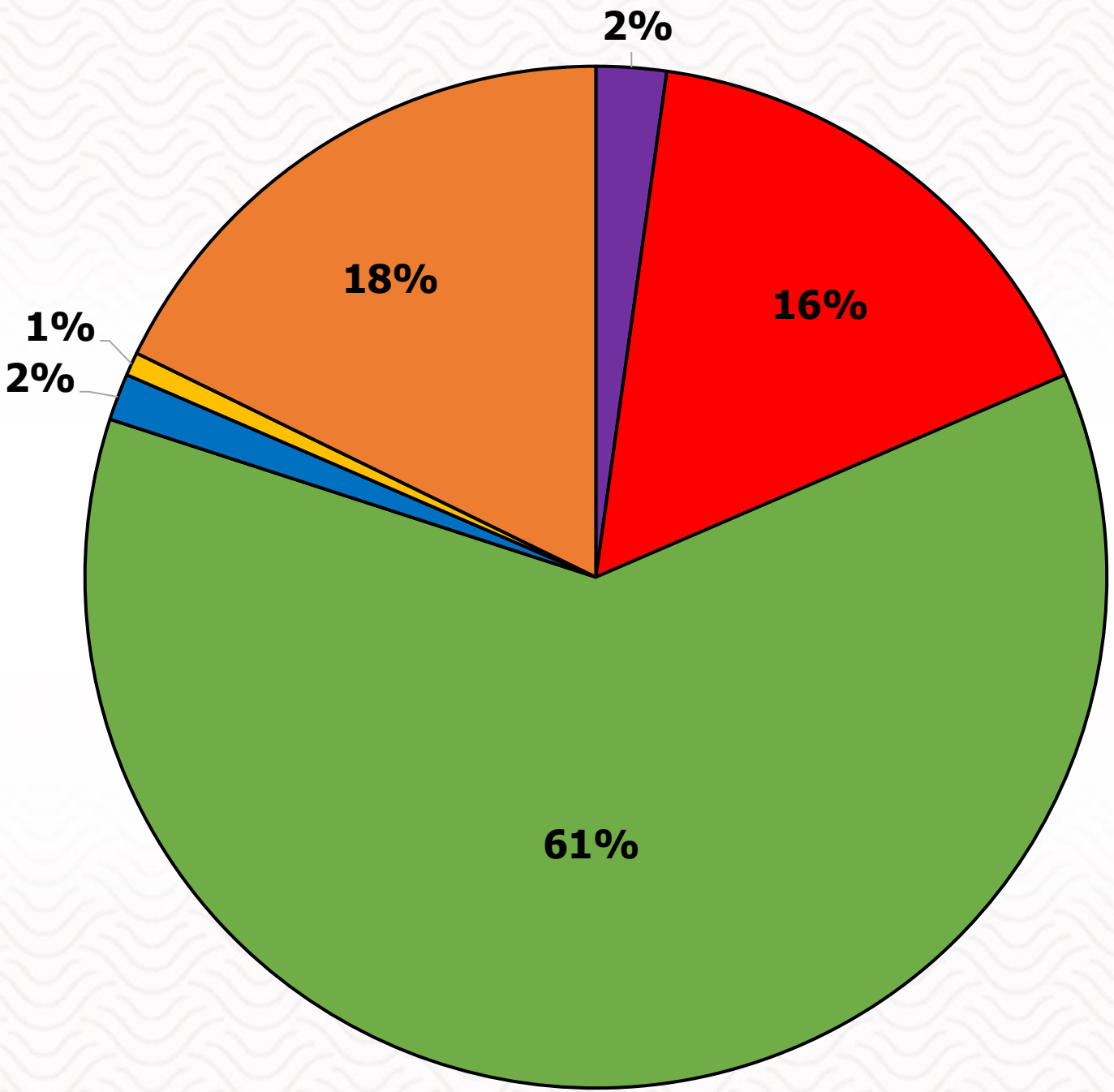




Fiscal Year 2021 Complaints by Type

- Animal - 10
- Fish Kill - 2
- Human Exposure - 31
- Vegetation - 118
- Water - 6
- WPS - 0
- Other -25

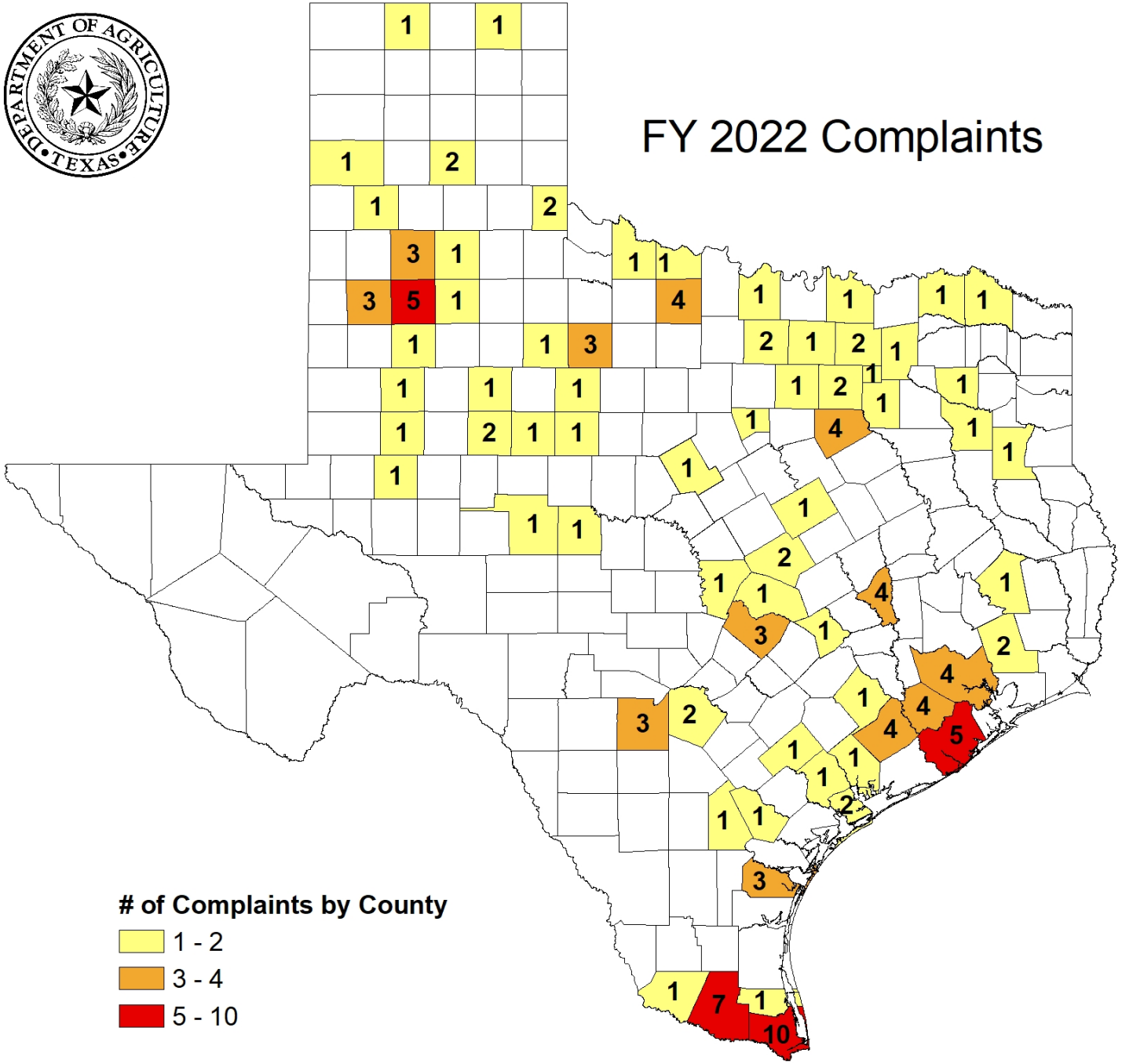

Fiscal Year 2021 Complaints
9/1/20 - 8/31/21
Complaints by County
1
2 - 5
6 +



Fiscal Year 2022 Complaints by Category

- Animal - 3
- Human Exposure - 22
- Vegetation - 83
- Water - 2
- WPS - 1
- Other - 24

FY 2022 Complaints



EPA Takes Action to Address Risk from Chlorpyrifos and Protect Children's Health

EPA measures will stop the use of the pesticide chlorpyrifos on food

August 18, 2021

Contact Information
EPA Press Office (press@epa.gov)

WASHINGTON - The U.S. Environmental Protection Agency (EPA) announced it will stop the use of the pesticide chlorpyrifos on all food to better protect human health, particularly that of children and farmworkers.

A recent article from the University of Minnesota (found here) lists the major remaining chlorpyrifos insecticide products that will be affected by EPA's Aug. 18 decision:

- Standalone products: Chlorpyrifos, Govern, Hatchet, Vulcan, Warhawk, Whirlwind and Yuma;
- Premixes that contain chlorpyrifos: Bolton, Cobalt Advanced, Match-Up, and Stallion.

This new EPA rule does NOT affect non-food-crop uses of chlorpyrifos, such as mosquito and roach control products. EPA has said it will review those uses in the coming year.

Jurors give $289 million to a man they say got cancer from Monsanto's Roundup weedkiller

By Holly Yan, CNN
Updated 9:28 PM ET, Sat August 11, 2018

Judge reads final verdict in Monsanto case 01:32

More from CNN


Reality star Lyric McHenry dies at 26


Camping for the first time in Airstream's tiny new luxury trailer

EPA Finalizes Glyphosate Mitigation

For Release: January 30, 2020

EPA has concluded its regulatory review of glyphosate—the most widely used herbicide in the United States. After a thorough review of the best available science, as required under the Federal Insecticide, Fungicide, and Rodenticide Act, EPA has concluded that there are no risks of concern to human health when glyphosate is used according to the label and that it is not a carcinogen. These findings on human health risk are consistent with the conclusions of science reviews by many other countries and other federal agencies, including the U.S. Department of Agriculture, the Canadian Pest Management Regulatory Agency, the Australian Pesticide and Veterinary Medicines Authority, the European Food Safety Authority, and the German Federal Institute for Occupational Safety and Health. The agency is requiring additional mitigation measures to help farmers target pesticide sprays to the intended pest and reduce the problem of increasing glyphosate resistance in weeds.

Glyphosate has been studied for decades and the agency reviewed thousands of studies since its registration. Glyphosate is used on more than 100 food crops, including glyphosate-resistant corn, soybean, cotton, canola, and sugar beet. It is the leading herbicide for the management of invasive and noxious weeds and is used to manage pastures, rangeland, rights of ways, forests, public land, and residential areas. In addition, glyphosate has low residual soil toxicity and helps retain no-till and low-till farming operations.

Glyphosate, Atrazine Evaluations Released

EPA Says Glyphosate, Atrazine Likely to Adversely Affect Endangered Species

11/15/2021 | 8:40 AM CST

By Todd Neeley , DTN Staff Reporter

Connect with Todd:

@toddneeleyDTN

LINCOLN, Neb. (DTN) -- EPA finalized its biological evaluations on glyphosate, atrazine and simazine, finding all three herbicides are "likely to adversely affect" certain species listed under the Endangered Species Act and their "designated critical habitats."

The agency released the biological evaluations after its regular business hours on Friday, stating in a news release, "These evaluations encompass all registered uses and approved product labels for pesticide products containing these three herbicides."

EPA said the "likely to adversely affect" determination means the agency "reasonably expects" that "at least one individual animal or plant, among a variety of listed

In its evaluation, which was released on November 12, 2021, and conducted as part of the Endangered Species Act, EPA looked at the effects of glyphosate, atrazine and simazine on endangered species when used at the highest legal limits rather than at levels typically used by farmers. EPA's determination is also based on the assumption that the chemistries are used more frequently than estimates would suggest.

> For instance, the final BE for glyphosate continues to assume soybean growers use 3.75 lbs./acre of glyphosate per application, whereas market research data and USDA survey data show the number is 1.00 lb./acre – nearly four times less than the BE assumes.
>
> The final BE for glyphosate also assumes growers reapply chemistry a mere seven days after an initial application. "This extraordinarily unrealistic assumption for any producer increases model exposure risks for species," ASA and AFBF note in a joint statement.

EPA Seeks Public Comment on Measures to Address Human Health and Ecological Risks Posed by Diuron

Released on April 28, 2022

The U.S. Environmental Protection Agency (EPA) is releasing the proposed interim decision (PID) for the pesticide diuron. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires EPA to review pesticides every 15 years to ensure that risk assessments reflect the best available science, and to ensure that registered products in the marketplace do not present unreasonable adverse effects to human health and the environment. The PID is part of a multi-step process to identify risks of concern as well as actions that can mitigate these risks.

- Based on the revised draft risk assessments and feedback submitted during the public comment period, EPA is proposing the following new measures to mitigate the ecological, dietary, and aggregate cancer risks of concern:

- Terminate all herbicide uses on food and feed crops to address dietary and aggregate risks of concern to the general public and ecological risks of concern;

- Terminate all herbicide uses on non-food agricultural sites (e.g., ornamentals) and on all non-agricultural sites (e.g., rights-of-way, utilities, roadways) to address dietary and aggregate risks of concern to the general public and ecological risks of concern; Terminate the use as an algaecide for commercial fish production to address dietary risks of concern; and

- Revoke all food and feed tolerances to address dietary risks of concern to the general public (except for a single tolerance to support the remaining cotton harvest aid use).

Registration Review of Pyridine and Pyrimidine Herbicides

Registration Review of Pyridine and Pyrimidine Herbicides

On this page:

Basic Information on Uses

The pyridine and pyrimidine classes are herbicides with selective toxicity to broadleaf weeds. These herbicides are used to control weeds in both agricultural and non-agricultural settings. Use sites vary from herbicide to herbicide. Example use sites are listed below.

Compost Restrictions

EPA is working to address compost contamination concerns for certain persistent herbicides during registration review.

Clopyralid, aminopyralid, and picloram are more persistent compared to the other herbicides in this group. Through the interim decisions for aminopyralid, clopyralid, and picloram, the following mitigation measures are required to address potential residues in compost:

- Prohibition of off-site use of treated plant materials and manure from grazing animals for compost and animal bedding/feed until 18 months after application to allow for residues to decline.
- Requirement that livestock be grazed on forage that haven't been treated for three days before moving to a site where manure is collected, or sensitive crops are grown.
- Removal of use on residential turf from all labels (clopyralid only).
- Notification by applicators to landowners/operators of compost restrictions for pasture (all three chemicals) and turf sites (clopyralid only). Applicators must keep records of the notification for two years.
- Updating compost pictogram on pesticide labels showing growers/operators how to manage treated materials.
- Requirement for registrants to participate in a stewardship program and provide educational outreach for applicators, growers, land managers/operators, and others affected by herbicide residues in compost.

For triclopyr and fluroxypyr (the less persistent herbicides), the following measures are required:

- Prohibition of the use of treated plant materials or manure from animals that have grazed or consumed forage from treated areas for composting until 30 days after application.
- Requirement that livestock be grazed on forage that haven't been treated with the pesticides for three days before moving to a site where manure is collected, or sensitive crops are grown.

EPA is preparing additional educational resources for land managers and others affected by herbicide residues in compost.

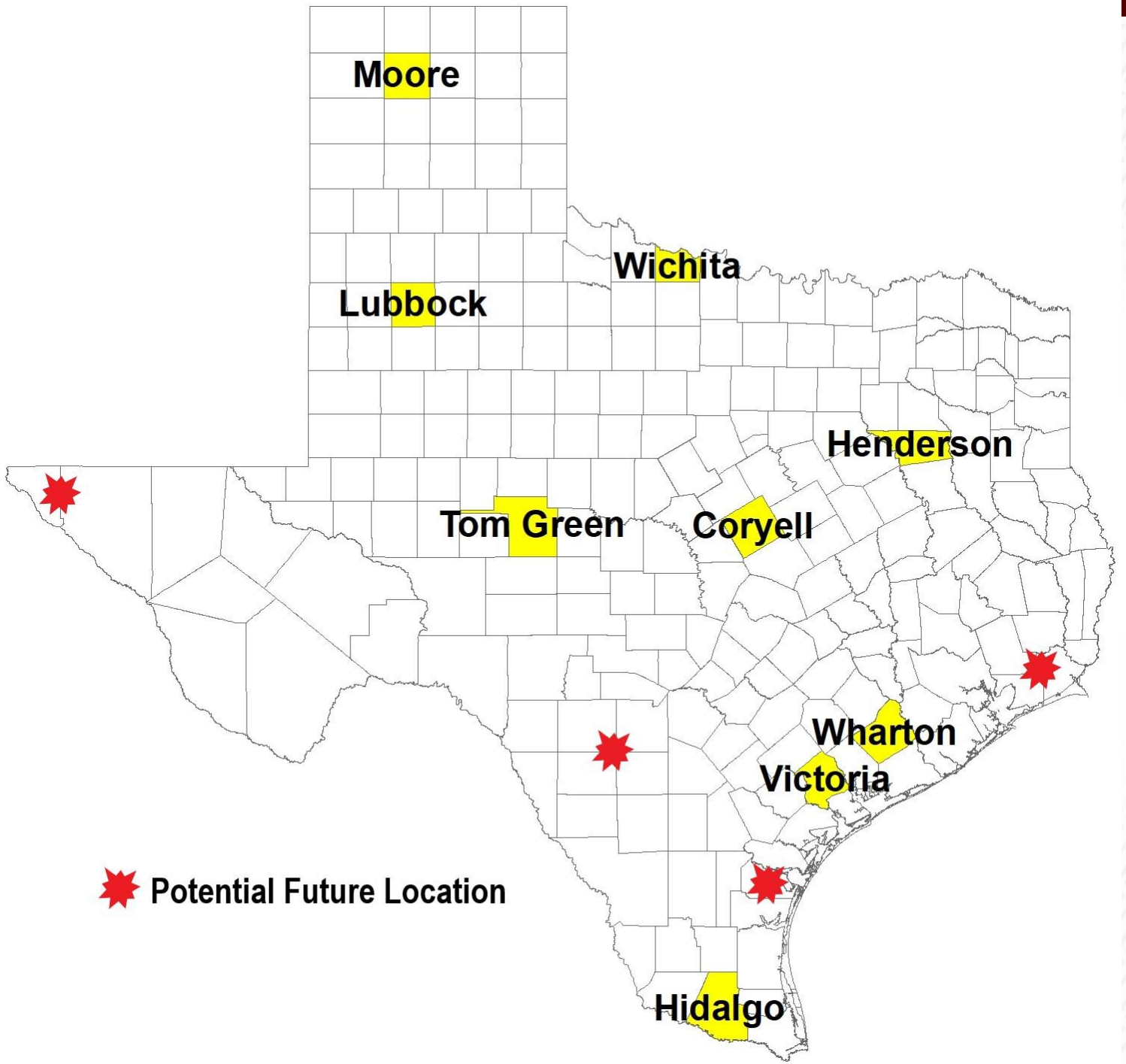
EPA Label Mandated Training

- Paraquat – crops – every 3 years
- Dicamba – cotton & soybean – every year
- Invora – rangeland – every 2 years

Pesticide Waste Disposal

- Free & anonymous
- Events have been held in:
  - Wharton
  - Coryell
  - Hidalgo
  - Lubbock
  - Henderson
  - Tom Green
  - Victoria
  - Wichita

Date	County	Total Amount Collected (Ibs)	# of participants	Event Cost
11/28/2018	Wharton	121,836	114	184,551.14
6/13/2019	Coryell	57,965	31	90,229.54
11/6/2019	Hidalgo	77,418	57	123,424.41
10/21/2020	Lubbock	274,521	129	468,073.12
10/28/2021	Henderson	25,001	65	50,526.23
4/20/2022	Tom Green	41,215	53	78,903.45
6/29/2022	Victoria	62,429	105	120,843.20
7/13/2022	Wichita	61,544	24	


Moore
Wichita
Lubbock
Henderson
Tom Green
Coryell
Wharton
Victoria
Hidalgo
Potential Future Location

The best way to dispose of a pesticide is to apply it according to label directions.

Questions?

Contact:

mmatocha@ag.tamu.edu