



# Chemically Speaking

## Fall 2017 - Table of Contents:

EPA and States' Collective Efforts Lead to Regulatory Action on Dicamba.....	2
EPA Registers the Wolbachia ZAP Strain in Live Male Asian Tiger Mosquitoes.....	3
Operation Cleansweep is Back!.....	3
Iowa Soybean Association Disputes Pending ‘Carcinogenic’ Glyphosate Label.....	4
Correctly Used Neonics Do Not Adversely Affect Honeybee Colonies, New University of Guelph Research Finds.....	5
Dicamba and the Treadmill of Herbicide Resistance.....	6
Pesticide Registrations and Actions.....	8

Visit *Chemically Speaking* on the Web at: <https://pested.ifas.ufl.edu/newsletters/>

Chemically Speaking, Fall 2017 is produced by F. Fishel, Pesticide Information Office.  
Pesticide Information Office / P. O. Box 110710 / Building 164 / Gainesville, Florida 32611-0710 / Tel. (352) 392-4721

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. For more information on obtaining other UF/IFAS Extension publications, contact your county's UF/IFAS Extension office.

U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida, IFAS, Florida A & M University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Nick T. Place, Dean for UF/IFAS Extension.

## EPA and States' Collective Efforts Lead to Regulatory Action on Dicamba

EPA has reached an agreement with Monsanto, BASF and DuPont on measures to further minimize the potential for drift to damage neighboring crops from the use of dicamba formulations used to control weeds in genetically modified cotton and soybeans. New requirements for the use of dicamba "over the top" (application to growing plants) will allow farmers to make informed choices for seed purchases for the 2018 growing season.

"Today's actions are the result of intensive, collaborative efforts, working side by side with the states and university scientists from across the nation who have first-hand knowledge of the problem and workable solutions," said **EPA Administrator Scott Pruitt**. "Our collective efforts with our state partners ensure we are relying on the best, on-the-ground, information."

In a series of discussions, EPA worked cooperatively with states, land-grant universities, and the pesticide manufacturers to examine the underlying causes of recent crop damage in the farm belt and southeast. EPA carefully reviewed the available information and developed tangible changes to be implemented during the 2018 growing season. This is an example of cooperative federalism that leads to workable national-level solutions.

Manufacturers have voluntarily agreed to label changes that impose additional requirements for "over the top" use of these products next year including:

- Classifying products as "restricted use," permitting only certified applicators with special training, and those under their supervision, to apply them; dicamba-specific training for all certified applicators to reinforce proper use;
- Requiring farmers to maintain specific records regarding the use of these products to improve compliance with label restrictions;
- Limiting applications to when maximum wind speeds are below 10 mph (from 15 mph) to reduce potential spray drift;
- Reducing the times during the day when applications can occur;
- Including tank clean-out language to prevent cross contamination; and
- Enhancing susceptible crop language and record keeping with sensitive crop registries to increase awareness of risk to especially sensitive crops nearby.

Manufacturers have agreed to a process to get the revised labels into the hands of farmers in time for the 2018 use season. EPA will monitor the success of these changes to help inform our decision whether to allow the continued "over the top" use of dicamba beyond the 2018 growing season. When EPA registered these products, it set the registrations to expire in 2 years to allow EPA to change the registration, if necessary.

For more information: <https://www.epa.gov/ingredients-used-pesticide-products/registration-dicamba-use-genetically-engineered-crops> (EPA Update, 10/13/17)

## **EPA Registers the Wolbachia ZAP Strain in Live Male Asian Tiger Mosquitoes**

On November 3, 2017, EPA registered a new mosquito biopesticide – ZAP Males® - that can reduce local populations of the type of mosquito (*Aedes albopictus*, or Asian Tiger Mosquitoes) that can spread numerous diseases of significant human health concern, including the Zika virus.

ZAP Males® are live male mosquitoes that are infected with the ZAP strain, a particular strain of the *Wolbachia* bacterium. Infected males mate with females, which then produce offspring that do not survive. (Male mosquitoes do not bite people.) With continued releases of the ZAP Males®, local *Aedes albopictus* populations decrease. *Wolbachia* are naturally occurring bacteria commonly found in most insect species.

This time-limited registration allows MosquitoMate, Inc. to sell the *Wolbachia*-infected male mosquitoes for five years in the District of Columbia and the following states: California, Connecticut, Delaware, Illinois, Indiana, Kentucky, Massachusetts, Maine, Maryland, Missouri, New Hampshire, New Jersey, Nevada, New York, Ohio, Pennsylvania, Rhode Island, Tennessee, Vermont, and West Virginia. Before the ZAP Males® can be used in each of those jurisdictions, it must be registered in the state or district.

When the five-year time limit ends, the registration will expire unless the registrant requests further action from EPA.

EPA's risk assessments, along with the pesticide labeling, EPA's response to public comments on the Notice of Receipt, and the proposed registration decision, can be found on [www.regulations.gov](http://www.regulations.gov) under docket number [EPA-HQ-OPP-2016-0205](https://www.epa.gov/pesticides/registration-decision-2016-0205). (EPA Update, 11/7/17)

## **Operation Cleansweep is Back!**

The purpose of Operation Cleansweep is to offer a safe, convenient, and cost effective mechanism for agricultural operations, golf courses, and pest control companies to properly dispose of canceled, suspended, and unusable pesticides (CSUP).

The Legislature has appropriated \$100,000 to fund the program, with the funds going directly to the Florida Department of Agriculture and Consumer Services (FDACS) to hire a contractor and implement the program in accordance with these Program Guidelines. In-kind services from the staff of the Florida Department of Environmental Protection and FDACS will also be directed to this program.

This is an opportunity for agricultural operations, golf courses, and pest control companies that reside in Florida to properly dispose of CSUP. This program is not intended for universities, pesticide manufacturers and distributors, institutions, or state and local government.

The intent of this guideline is to ensure that the public money that funds Cleansweep goes mostly to commercial users rather than governmental agencies or commercial wholesalers. For all private commercial entities requesting service, they will be serviced at the following rate:

The first 750 pounds of CSUP will be managed utilizing Cleansweep funds. If more CSUP, over the initial 750 pounds, exists, the entity requesting service will be responsible for paying for the management of this “excess” material at the contracted rate directly to the contractor. Operation Cleansweep contract prices are generally 1/3 or 1/4 the costs of disposal it would normally cost to hire a private contractor to handle the same pesticide wastes. Additional requests will be handled on a case by case basis, based on the degree of eminent danger to public health and safety and the potential for environmental harm.

A list of participants, quantities and products will be compiled in advance of scheduling a pickup or collection. When a list in a geographic area (county), reaches a quantity specified in the vendor contract e.g., 2,000 lbs., a “milk run” collection would be authorized by the FDACS Program Manager. The contractor, not the FDACS Program Manager, would schedule the specific route and collection schedule for all participants served by a milk run.

This program is primarily focused on the collections of pesticide or fertilizer/pesticide containers known to contain CSUP ingredients. This means the product label should be legible. In instances where the label is not legible a decision will have to be made at the collection site by FDACS personnel as to whether it is acceptable. Leaking product containers shall be over-packed at the collection site and accepted for proper disposal. The selected contractor will be responsible for all CSUP handling, packaging, loading, transportation, disposal, and emergency response. Gas cylinders are not acceptable. Formulations in aerosol dispensers are acceptable.

For information, contact:

Shannon Turner

Florida Department of Agriculture and Consumer Services

3125 Conner Blvd., Ste N

Tallahassee, FL 32399

Toll-Free 1-877-851-5285

[Shannon.Turner@freshfromflorida.com](mailto:Shannon.Turner@freshfromflorida.com)

[Cleansweep@freshfromflorida.com](mailto:Cleansweep@freshfromflorida.com)

(FDACS Update, 9/15/17)

## **Iowa Soybean Association Disputes Pending ‘Carcinogenic’ Glyphosate Label**

The Iowa Soybean Association board of directors unanimously approved joining as a co-plaintiff in the legal challenge to California’s Proposition 65 and the listing of glyphosate as a carcinogen. The International Agency for Research on Cancer’s (IARC) arbitrary determination that glyphosate negatively impacts consumers and food producers sets a dangerous precedent and threatens the continued availability of other valuable food production tools.

The unreasonable listing by the California Office of Environmental Health Hazard Assessment of glyphosate as a carcinogen as compelled by Prop 65 violates the First Amendment of the U.S. Constitution because it compels the plaintiffs in the case to make false, misleading and highly

controversial statements about their products. Should labeling proceed, the ripple effect could mean environmental concerns, increased production costs — to be passed along to the consumer — and a threat to the viability of the state and country’s soybean crop given intensified weed pressures. This could be a devastating blow to Iowa soybean farmers and an industry valued at more than \$5 billion.

Glyphosate is one of the safest herbicides ever developed and has been rigorously tested by the U.S. government for decades, continually passing as non-carcinogenic. The determination by IARC, a France-based, non-scientific organization, that glyphosate is ‘probably carcinogenic’ counters the conclusion of every global regulator that has examined the issue over the past 40 years. Not only does the scientific community disagree with IARC’s findings, the organization’s internal process for reviewing glyphosate — along with other ‘possible’ or ‘probable carcinogens’ like French fries and coffee — has also been roundly criticized.

“The Iowa Soybean Association is proud to join other plaintiffs, including the Agribusiness Association of Iowa, in defending farmers, science and a safe and abundant food supply.” (Iowa Soybean Association, 11/15/17)

## **Correctly Used Neonics Do Not Adversely Affect Honeybee Colonies, New University of Guelph Research Finds**

The three most widely used neonicotinoid pesticides for flowering crops pose no risk to honeybee colonies when used correctly as seed treatments, according to new studies by University of Guelph researchers.

Amid mounting controversy over use of neonicotinoids (neonics) and declining bee population, a new analysis by U of G scientists of previously unpublished studies and reports commissioned by agri-chemical companies Bayer and Syngenta – as well as published papers from the scientific literature – shows no significant ill effects on honeybee colonies from three common insecticides made by the companies.

The findings are described in five papers published this month by Keith Solomon, a toxicologist and emeritus professor with the School of Environmental Sciences and adjunct professor Gladys Stephenson in the *Journal of Toxicology and Environmental Health-B*.

The duo analyzed 170 unpublished studies that Syngenta and Bayer had submitted to regulatory agencies. They also included 64 papers from the open, peer-reviewed literature on the topic.

Acknowledging that these three pesticides can kill individual honeybees and may also pose a threat to other pollinators, Solomon said: “At least for honeybees, these products are not a major concern. Use of these neonics under good agricultural practices does not present a risk to honeybees at the level of the colony.”

The U of G scientists were asked by Bayer and Syngenta to assess earlier studies conducted by or for the companies on impacts of pesticide-treated seeds on honeybees.

They conducted weight of evidence assessments, an approach developed specifically for these studies that is intended to gauge the quality of reported data and to compare relevance of results from different studies.

The companies wished to respond to controversy and inconclusive evidence about the potential harm posed to pollinators by neonic pesticides, said Solomon.

All pesticides in Canada must be registered with the Pest Management Regulatory Agency.

The study involved three pesticides – clothianidin and imidacloprid made by Bayer, and thiamethoxam made by Syngenta – that are used in seed treatments for various field crops.

Solomon said the original papers varied in quality and scientific rigour, but their results generally showed no adverse effects of pesticides on honeybee hives.

“Many studies look at effects of insecticides on individual bees. What regulations try to protect is the colony — the reproductive unit.”

He said other researchers might use their results to improve studies of pesticide exposure in hives.

The U of G researchers stressed the importance of “good agricultural practices,” including ensuring that seeds are coated and planted properly to avoid airborne contamination of bees during field seeding.

Solomon said their results don’t necessarily apply to other insects that also serve as crop pollinators and that have shown population declines. For those pollinators, he said, “There are too few studies at the colony or field level to allow a weight of evidence analysis.”

The U of G researchers said bees and other pollinators are affected by potentially harmful factors, including long-distance movement of colonies for crop pollination as well as mites and viruses, weather, insufficient food and varying beekeeping practices. (University of Guelph, 11/21/17)

## **Dicamba and the Treadmill of Herbicide Resistance**

Many reports have circulated the US concerning widespread dicamba injury to off-target crops, particularly in the Mid-South and Midwest. According to a national survey led by Kevin Bradley, weed scientist at the University of Missouri, 3.1 million acres of crops were reported injured by dicamba in 2017, which was legally applied to dicamba-resistant soybeans for the first time this year.

According to weed specialists at the University of Minnesota, this issue is concerning for several reasons beyond injury to crops. These include neighbor disputes about drift, pressure to purchase dicamba-resistant beans as a defensive tactic, and the complicated dicamba label and associated regulations. We have also seen misleading manufacturer claims that dicamba-related technology

is the stand-alone solution for herbicide resistant weeds. There is no silver bullet for herbicide resistant weeds.

If growers come to over-rely on dicamba products, history suggests that the cycle of resistance will continue, and we will face increased weed resistance to dicamba as we have with glyphosate, triazine, and ALS-inhibitor herbicides. It is important to remember that there is still no silver bullet for resistant weeds, and dicamba is no exception.

Over the winter months, farmers, extension educators, crop consultants, industry and government officials will discuss how to approach this issue for next year. Dicamba application to dicamba-tolerant soybeans will remain an option in most states; the EPA recently announced added regulations to be applied in 2018 for continued use of this product. It is predicted that many farmers will continue to plant dicamba-resistant soybeans and apply dicamba. Some may be applying it as a direct tactic to target herbicide-resistant pigweed in their fields. In order to ensure sensible use of dicamba and slow the development of weed resistance to it, it is important that we recognize how we got to this point: the development of highly competitive weeds that are resistant to multiple groups of herbicides.

Over about the past two decades, farmers have had to deal with increasing numbers of resistant weeds, particularly weeds that are resistant to multiple popular herbicide groups. Some of the most challenging examples include multiple-resistant tall waterhemp, Palmer amaranth, giant and common ragweed, and kochia. Unfortunately, heavy use of triazines and ALS-inhibitor herbicides led to the selection of triazine- and ALS-resistant weeds. When glyphosate-resistant crops became available two decades ago, glyphosate use increased as it became a popular and effective tool for stubborn and resistant weeds. But weeds soon responded by developing resistance to it as well. Currently, farmers in states like Arkansas and Missouri are turning to dicamba as a solution to widespread Palmer amaranth that is resistant to multiple herbicide groups, including glyphosate and ALS-inhibitors. While dicamba products are often effective on Palmer amaranth, it is not a silver bullet for herbicide resistant weeds. If it is overused, weed populations will likely adopt resistance against it rapidly, including Palmer amaranth, continuing the treadmill of resistance that we have seen with popular herbicides over the past 25+ years.

Unfortunately, if the treadmill continues with dicamba, we will run short on remaining effective chemistries against weeds like Palmer amaranth sooner rather than later. We do not know of any new herbicide modes of action on the horizon, so conserving current effective technologies is very important.

In order to conserve effective chemistries, farmers should diversify the herbicide modes of action that they are applying within each season and between seasons.

Avoid overreliance on one or two modes of action.

By diversifying the number of effective herbicide MOA in a tank and from one application to the next, the producer is limiting the opportunities for weeds to develop resistance.

Modes of action can and should be diversified several ways: In tank mixes, between applications within a season, and rotated between seasons. Rotating crops helps facilitate the rotation of herbicide MOA.

Additionally, it is important to use the full rate of each herbicide according to the label, as incomplete control can also lead to the development of resistance.

Integrated other cultural and mechanical practices alongside herbicide control in order to reduce the introduction of new weeds, reduce the weed pressure that is put on herbicides, and to target stubborn weeds from multiple angles. ([www.integratedweedmanagement.org](http://www.integratedweedmanagement.org), 11/25/17)

## ***Pesticide Registrations and Actions***

- The special local need registration for the use of sethoxydim (Tigr<sup>®</sup>) was approved on October 23 for the control of invasive grasses in aquatic sites (SLN FL-170006). The EPA registration number for the SePRO product is 7969-58-67690. (FDACS letter, 10/23/17)