



Chemically Speaking

Pesticide Information Office / P. O. Box 110710 / Building 164 / Gainesville, Florida 32611-0710 / Tel. (352) 392-4721

October 2013

Table of Contents

	Page
Endosulfan Now Illegal for Most Florida Crops ..	1
Biopesticide Slowed by Bee Concerns	3
CPDA Questions Endocrine Program	3
Strawberry Progress Without Fumigation	4
Pesticide Registrations and Actions	5
Food Related Actions	5
Non-food Actions	6
Other Actions	6

Endosulfan Now Illegal for Most Florida Crops

The insecticide endosulfan, which can be labeled as Endosulfan, Thiodan, Drexel Endosulfan or Thionex®, has been undergoing a phase-out for end-users. The phase-out began on July 31, 2012 for many Florida crops such as broccoli, Brussels sprouts, cabbage, celery, cucumber, lettuce, summer melon (cantaloupe and watermelon), summer squash, non-bearing and nursery stock citrus, collard greens, eggplant, kale, kohlrabi, mustard greens, strawberry, sweet potato, Christmas trees, and leatherleaf fern. July 31, 2012 was the last date of legal application to these crops, which have for the large part been harvested by 2013.

The use of this product is now illegal for all Florida crops except apple, blueberry, pepper, potato, pumpkin, sweet corn, tomato and winter squash. Floridian end-users are able to use endosulfan on these crops (apple, blueberry, pepper, potato, pumpkin, sweet corn, tomato and winter

Visit *Chemically Speaking* on the Web at: <http://pested.ifas.ufl.edu/newsletter.html>

squash) until December 31, 2014. If these same crops are grown in other states, endosulfan may be used in those states until July 31, 2015. Livestock ear tags and some vegetable crops grown for seed have an end-user date of July 31, 2016. Currently, there are tolerance expiration dates that are the same as the end-use date, leaving no time between a possible last application and the tolerance expiration. Under such circumstances, it is possible that a lawful application of endosulfan could result in residues in a crop for which the tolerance has been revoked. In the case of a lawful application, the product would not be in violation if the grower could provide written spray records demonstrating the application occurred before the end-use date. It is clear that if endosulfan is applied on a crop after the labeled expiration date, the applicator would be in violation even if the applicator is applying product purchased before the end-use date. In Florida, endosulfan may now only be applied to the crops whose use ends 12/31/2014.

End-use& Tolerances Expired 7-31-2012	End-use& Tolerances Expired 7-31-2012	End-use& Tolerances Expired 7-31-2013	Florida End-use& Tolerances Expire 12-31-2014
Almond	Eggplant	Pear	Apple
Almond, hulls	Hazelnut		Apple, wet pomace
Apricot	Kale		Blueberry
Bean	Lettuce, head		Corn, sweet, forage
Broccoli	Lettuce, leaf		Corn, sweet, kernel plus cob with husks removed
Brussels sprouts	Muskmelon		Corn, sweet, stover
Cabbage	Mustard greens		Pepper
Cantaloupe	Mustard, seed		Potato
Carrot, roots	Nectarine		Pumpkin
Cauliflower	Nut, macadamia		Squash, winter
Celery	Peach		Tomato
Cherry, sweet	Plum		
Cherry, tart	Plum, prune		
Collards	Squash, summer		
Cotton, gin byproducts	Sweet potato, roots		
Cotton, undelinted seed	Walnut		
Cucumber	Watermelon		

Visit *Chemically Speaking* on the Web at: <http://pested.ifas.ufl.edu/newsletter.html>

Biopesticide Slowed by Bee Concerns

The release of a biological pesticide containing the bacterium *Bacillus mycoides* isolate J (BmJ) with efficacy against a host of pathogens and potato virus Y has been delayed at least a year by new Environmental Protection Agency (EPA) requirements to evaluate effects of pesticides on beehives. The manufacturer, Certis USA, had hoped to have the product released by now, said Scott Ockey, the company's western U.S. field development manager. Ockey said Certis remains optimistic about a release in late 2014 or early 2015, which will give him time for additional trials evaluating BmJ on other diseases and crops. "There has been a lot of sensitivity with pesticides and this (bee) colony collapse disorder," Ockey said. "We are on the leading edge of the new EPA guidelines that are requiring more testing of pesticides."

BmJ, a naturally occurring and nonpathogenic bacterium shown to trigger a plant's immune responses to fungi, bacteria and viruses, was discovered by Montana State University researchers on sugar beet leaves. "Molecularly, when you spray it on, a cascade of chemicals are produced by the plant," Ockey said. BmJ has been tested throughout the country on crops including potatoes, spinach, lettuce, beans, sugar beets, grapes, apples and pears.

The product is in its third year of trials at the UI Aberdeen Research & Extension Center, with federal specialty crop block grant funding awarded through the Idaho State Department of Agriculture and grant writing and project oversight by the Northwest Center for Alternatives to Pesticides. Jennifer Miller, a sustainable agriculture associate with the center, explained BmJ will be affordably priced and offers a novel mode of action to stave off resistance to existing pesticides when it's

incorporated into programs. "We're interested in alternative practices that can reduce the use of synthetic fungicides. Growers are interested in reducing costs, so BmJ can be an important way to reduce costs and be an important part of fungicide resistance management," Miller said.

UI plant pathologist Oliver Neher, who has also studied BmJ in Montana, said it takes two to three days for the product to improve a plant's resistance and the effects last for two to three weeks, with peak effectiveness after five to seven days. Neher said the product should be used in tandem with other chemicals rather than on a stand-alone basis and can be tank-mixed effectively. Tests in Aberdeen confirm programs incorporating BmJ are comparable or better to other programs for white mold and early blight in potatoes. Trials involving *Rhizoctonia* are in their first year.

UI Extension seed pathologist Phil Nolte's research shows BmJ used in high doses can cut potato virus Y (PVY) rates in half. While traditional insecticides don't work quickly enough to prevent aphids from spreading PVY, a virus especially concerning to seed potato growers, BmJ helps the plant withstand an attack. "A product that can provide some protection against PVY would be very desirable," Nolte said. (*Capital Press*, 9/5/13).

CPDA Questions Endocrine Program

The EPA-mandated endocrine disruption screening process is continuing with its second phase, but the crop protection industry has yet to see

Visit *Chemically Speaking* on the Web at: <http://pested.ifas.ufl.edu/newsletter.html>

any value in the information generated by the process - which is expensive at an average of \$1 million per chemical. At issue is the fact that no thresholds or limits have been defined for what an endocrine disruptor is in the U.S. Thus, it is unclear how the data, which is generated by testing on animals, will help to guide regulatory decisions.

“EPA wants this program expanded and expanded and you just see a never-ending issuing of test orders for millions of dollars of testing, and EPA still hasn’t defined what an adverse endocrine effect is,” says Sue Ferenc, Council of Producers and Distributors of Agrotechnology (CPDA) president. “It hasn’t estimated the cost right and it hasn’t really made it clear how that information, that million dollars per chemical, was going to give EPA what it needed to make the regulatory decision that a chemical may or may not have the potential to interact with the endocrine system.”

The CPDA, along with other organizations, petitioned the Executive Branch’s Office of Management and Budget (OMB) to quit funding for EPA’s Endocrine Disruptor Screening Program (EDSP). Previously, EPA conducted tests on a first list of chemicals, yielding few results, and EPA’s second phase is slated to test 109 chemicals. These tests cost the public millions of dollars and hundreds of animals have been killed in the process. Now, CPDA is counting on OMB oversight to bring the EDSP to a halt.

“There’s no statutory push for EPA to do it [the tests] in some certain time frame, so we’re not really sure why it’s trying to race this program forward the way it is, but you just don’t have any recourse with EPA itself,” said Ferenc. “It truly is procedural. That’s all we’ve got to go by because there’s nothing else you can do to really ask EPA.” The procedural chess match stems from the ongoing

concern that EPA tests lack practicality and are based on potential or theoretical usefulness. “We hope OMB will take the opportunity to ask EPA to carefully consider its own peer review process and the experts before expanding the program, and revise the program as needed before expanding it,” said Ferenc. (CPDA, 9/11/13).

Strawberry Progress Without Fumigation

For decades, California strawberry growers like Rod Koda used methyl bromide to kill nematodes, insects, weeds, and plant diseases before planting strawberries. But with methyl bromide phased out by international treaty and the replacement methyl iodide pulled off the market, chemical use becomes harder with the remaining fumigants due to buffer zones. The restrictions are pushing California’s \$2.3 billion strawberry industry toward developing nonchemical alternatives to pesticides. The industry and state have poured millions of dollars into research, but they say alternatives such as sterilizing soil with steam or growing berries in peat are not ready for full adoption. California supplies nearly 90 percent of the nation’s strawberries. “We’re so limited in what we can do and the restrictions that are out there, it’s getting tighter and tighter,” said Koda, who grows strawberries on 28 acres in Watsonville. “Some of the alternatives don’t show uniform results - a win one year and next year dead plants all over your field.”

Since the 1960s, California strawberry growers have fumigated their fields before each crop is planted to control devastating soil-borne pests, increase yields and produce uniform and disease-free fruit. But expansion of urban development bordering berry fields on the Central Coast and in

Visit *Chemically Speaking* on the Web at: <http://pested.ifas.ufl.edu/newsletter.html>

Southern California has increased unease over the dangers of fumigants to residents and farmworkers. Growers and state regulators have said the chemicals are safe with precautions such as not using fumigants in buffer zones near schools and residential areas and posting signs that prohibit entry to fields.

Critics say those protections aren't sufficient. Fumigants are among the most dangerous pesticides, since their gaseous state enables them to drift from under the plastic tarps where they are applied, said Sara Knight of Pesticide Action Network, which is asking regulators to end fumigation by 2020. Methyl iodide was pulled from the U.S. market by its Japanese manufacturer last year after criticism from activists. Currently, a small portion of growers are still allowed to use methyl bromide before it's completely disallowed.

Most growers now have access to two fumigants: 1,3-DCP and chloropicrin. After California state regulators in 2011 designated chloropicrin as an air pollutant that might pose a hazard to human health, they proposed increasing buffer zones and limiting the number of acres that the chemical can be applied to at one location. A state-convened working group formed to discuss alternatives to fumigation called in April for more testing of non-chemical alternatives in the fields - and for grants or crop insurance to help growers mitigate the risk of adopting the new methods.

On part of his land, Koda mixed a carbon source (rice bran) into the soil, placing a tarp over the field and saturating the beds with water to trigger growth of bacteria. The bacteria rid the soil of *Verticillium*, one of the most persistent berry diseases, at similar levels that fumigation does, said University of California, Santa Cruz researcher Carol Shennan. But the method - called anaerobic soil disinfestation

- is more time consuming, does not yet control other strawberry diseases, and there isn't enough rice bran for all the growers. "I'm optimistic this is going to be a tool that farmers can use," Shennan said. "Is it going to be a complete answer? Probably not."

Another option is growing strawberries in non-soil substances, filling the beds with coconut husk fiber or pine bark. However, these soil-less media are low in nutrients and require use of extra fertilizer. Soil pathogens can also be killed off with heat generated by a steam machine, for which a prototype has been built. However, this method might, in turn, require more use of herbicides to control unwanted weeds not killed off by the steam. "People said for years that growing strawberries without fumigation couldn't be done," said Steven Fennimore, a researcher with the University of California, Davis. "But to a limited extent it can be done, the technology is there." (AP, 9/22/13).

Pesticide Registrations and Actions

Food Related Actions

- On September 13, the Florida Department of Agriculture and Consumer Services (FDACS) registered the biological fungicide *Ulocladium oudemansii* U3 strain (Zen-O-Spore®) to control diseases on grapes, strawberry, and other crops. The EPA registration number for the Botry-Zen (2010) Ltd. product is 75747-2. (FDACS PREC Agenda, 10/3/13).
- Based on a request by IR-4, tolerances have been granted for residues of the herbicide prometryn in snap bean and dill. (*Federal Register*, 9/11/13).

Visit *Chemically Speaking* on the Web at: <http://pested.ifas.ufl.edu/newsletter.html>

- Based on a request by Syngenta, tolerances have been granted for residues of the fungicide sedaxane (Vibrance®) in potato and potato wet peel. (*Federal Register*, 10/2/13).
- Based on a request by IR-4, tolerances have been granted for residues of the fungicide quinoxyfen (Quintec®). Tolerances of interest to the region include grape, strawberry, maypop, and fruiting vegetables (group 8-10). (*Federal Register*, 9/18/13).
- Based on a request by IR-4, tolerances have been granted for residues of the insecticide methoxyfenozide (Intrepid®). Tolerances of interest to the region include atemoya, biriba, cherimoya, custard, apple, grape, ilama, soursop, sugar apple, and herb subgroup 19A, except chive. (*Federal Register*, 10/2/13).
- Based on a request by IR-4 and BASF, a tolerance has been granted for residues of the fungicide pyraclostrobin (Cabrio®/Headline®). Tolerances of interest to the region include persimmon, endive, and sugarcane. (*Federal Register*, 8/28/13).
- The EPA has granted an experimental use permit (EUP) to Mosquito Mate Inc., which allows for the release for a 6-month period of 100,000 *Aedes albopictus* mosquitoes containing a total of 38.4 mg *Wolbachia pipientis* ZAP strain from 7/29/2013 for a period of three years. An area of 4,118 acres may be treated in several states including Florida. (*Federal Register*, 9/12/13).

Other Actions

- Agriculture Secretary Tom Vilsack announced in September that the USDA will soon publish a notice in the *Federal Register* asking the public to comment on how agricultural coexistence in the United States can be strengthened. “The Advisory Committee on Biotechnology and 21st Century Agriculture recommended that USDA support agricultural coexistence by strengthening education and outreach on this vital issue,” said Secretary Vilsack. “In response, with this notice, we are asking all those with a vested interest in coexistence to help us learn more about what coexistence means to them, how they are already contributing to it, and what more is needed to achieve coexistence. With this input, we can continue the dialogue begun by the AC21 group and find practical solutions that will help all sectors of American agriculture be successful.” Coexistence is defined as the concurrent cultivation of crops produced through diverse agricultural systems including traditionally produced, organic,

Non-food Actions

- On October 15, the FDACS issued the special local needs registration for the insecticide/nematicide abamectin (Avid®) for management of ring and sting nematode in golf course greens. The EPA registration number and SLN number for the Syngenta product are 100-896 and SLN FL-130004, respectively. (FDACS letter, 10/15/13).

Visit *Chemically Speaking* on the Web at: <http://pested.ifas.ufl.edu/newsletter.html>

identity preserved, and genetically engineered crops. (*USAgNet.com*, 9/23/13).



- China's 8th National Expert Committee for Pesticide Registration has decided to cancel the pesticide registration of three sulfonylurea herbicides: metsulfuron-methyl, chlorsulfuron and ethametsulfuron based on risk assessments, according to the website ChemLinked. The Ministry of Agriculture urged the provincial department and its subordinates to accept the committee's decision made during meeting," the website said. According to site, the Committee set a timeline for registration cancellation of the three herbicides: use of chlorsulfuron should be banned and the registration of all chlorsulfuron products will be withdrawn by 12/31/13; single-formulated product registrations of metsulfuron-methyl and ethametsulfuron will be cancelled by 12/31/13; and the registrations of their combination products will be revoked by 7/1/15. Registration of metsulfuron-methyl for exporting only purposes is to be maintained. (*Farm Chemicals International*, 9/26/13).

Mark Mossler
Doctor of Plant Medicine
plantdoc@ufl.edu

Fred Fishel
Professor & Pesticide Coordinator
weeddr@ufl.edu

Linda Kubitz
Information & Publications Coordinator
llk@ufl.edu

POISON CENTER EMERGENCY TELEPHONE SERVICE: (800) 222-1222.
NATIONAL PESTICIDE INFORMATION CENTER (NPIC) NUMBER: (800) 858-7378

THE INFORMATION GIVEN HEREIN IS SUPPLIED WITH THE UNDERSTANDING THAT NO DISCRIMINATION IS INTENDED AND NO ENDORSEMENT BY THE FLORIDA COOPERATIVE EXTENSION SERVICE IS IMPLIED. PERMISSION IS GRANTED TO REPRODUCE FULL CONTEXT TO ANY ITEM IN CHEMICALLY SPEAKING. PASS IT ALONG WITH YOUR GOOD JUDGMENT.

Visit *Chemically Speaking* on the Web at: <http://pested.ifas.ufl.edu/newsletter.html>

UF | IFAS

UNIVERSITY of FLORIDA

Institute of Food and Agricultural Sciences

Cooperative Extension Service

Pesticide Information Office

P.O. Box 110710

Gainesville, FL 32611-0710

Visit *Chemically Speaking* on the Web at: <http://pested.ifas.ufl.edu/newsletter.html>