

From: Ivan Hanscom [mailto:indianhill@maineline.net]

Sent: Monday, September 26, 2011 7:53 PM

To: Fish, Gary

Subject: Re: We need your help! This is your chance to affect public policy.

Hi Gary, Long time answering. I would like to see a hearing here in Machias in the center of Blueberry Country. I would also like to see the entire program available on line. Can you put this to the Directors? I will try to make Waterville but it is a long haul so early in the morning. Best, Ivan Hanscom

----- Original Message -----

From: Fish, Gary

To: gary.fish@maine.gov

Cc: Paul.B.Schlein@maine.gov ; Jennings, Henry

Sent: Friday, September 09, 2011 11:48 AM

Subject: We need your help! This is your chance to affect public policy.

Sent: Tuesday, September 27, 2011 9:22 PM

To: Fish, Gary

Subject: Re: We need your help! This is your chance to affect public policy.

Hi Again Gary, Yes I would like to see both the exam and continuing education on line. Ivan

----- Original Message -----

From: Fish, Gary

To: Ivan Hanscom

Sent: Tuesday, September 27, 2011 8:03 AM

Subject: RE: We need your help! This is your chance to affect public policy.

Hi Ivan,

I have forwarded your comments to Henry Jennings, our Director. We hope you can make it to Waterville. I regret that we probably will not have hearings all over the state as we are being asked to cut expenses everywhere we can.

What do you mean by the entire program on-line? The exam process? Continuing education? Both?

From: svg1@roadrunner.com [mailto:svg1@roadrunner.com]
Sent: Monday, October 10, 2011 7:41 AM
To: Jennings, Henry
Subject:

-I agree with the proposed changes to this bill. I feel the farmers are well aware of how to use the BT products and they are all very diligent in doing the 20% refuge.- Spencer Greatorex North East Ag Sales Inc
207-487-6273 207-341-1375

From: Justin Choiniere [mailto:Justin@neag.net]
Sent: Monday, October 10, 2011 9:19 AM
To: Jennings, Henry
Cc: Lauchlin Titus
Subject: Re: BPC proposed rule change

Mr Jennings,

I agree with the proposed change to the language in Chapter 41 regarding the removal of the training requirement for farmers. Please consider repealing the requirement for training. I feel in the industry we can do our part to help police this to make sure that good stewardship is rewarded.

Thank you,

Justin Choiniere
Plant Manager
Northeast Agricultural Sales, Inc.
Detroit, Maine 04929
1-800-462-7672

From: Lauchlin Titus [mailto:ltitus1@myfairpoint.net]
Sent: Monday, October 10, 2011 1:11 PM
To: Jennings, Henry
Subject: Chapter 41

Hi Henry,

Possibly we missed one language change in the Chapter 41 rulemaking. I just printed off and reviewed all of Section 5 in Chapter 41 to use in a training meeting with a seed dealer. Look at the beginning of Chapter 41, Item B., paragraph II. It refers to what we are proposing to strike or change in Section 5(E), so maybe it is OK, but thought I should bring it up....

Lauchlin

From: Bob St.Peter [mailto:bobstpeter@gmail.com]
Sent: Friday, October 21, 2011 12:13 PM
To: Jennings, Henry
Subject: Comments Re: Proposed Changes to Chapter 41

Good day Henry,

Attached you will find Food for Maine's Future's comments regarding the proposed changes to Chapter 41. Also attached are three articles I'm including with our comments.

Regards,
Bob St.Peter
Director
Food for Maine's Future

From: Bob St.Peter [mailto:bobstpeter@gmail.com]
Sent: Friday, October 21, 2011 12:21 PM
To: Jennings, Henry
Subject: one additional article

Henry,

I forgot to include one additional article, "Widely Used Herbicide Commonly Found in Rain and Streams in the Mississippi River Basin". I've attached it here. Thank you.

Bob

October 21, 2011

Henry Jennings, Director
Board of Pesticides Control
28 State House Station
Augusta, ME 04330-0028

Re: Proposed Amendment to **Chapter 41—Special Restrictions on Pesticide Use**

Dear Mr. Jennings and the Maine Board of Pesticide Control,

I am writing on behalf of Food for Maine's Future to oppose the proposed amendment to Chapter 41 that would remove the training requirement for use of Bt corn.

The use of Bt corn in Maine is a new development. In other parts of the country where the technology has been in use longer insect resistance is beginning to appear. (See attached article "Resistance by Corn Rootworm to Bt Corn Reported in Parts of Iowa".) In addition to insect resistance, heavy use of glyphosate in herbicide tolerant (HT) crops has created a nightmare scenario of herbicide resistant weeds, commonly referred to as "super weeds". Superweeds now total in the "hundreds" according to September 8, 2011 report by Business Week. ("Attack of the Superweed: New strains resist Roundup, the world's top-selling herbicide".)

A report by the Organic Center in 2009 ("Impacts of Genetically Engineered Crops on Pesticide Use in the United States: The First Thirteen Years") found that overall pesticide use in the U.S. had increased by nearly 320 million pounds since the commercialization of genetically-engineered crops in 1996. The principle reason for this increase is the development of weeds resistant to glyphosate, marketed under the brand name Round Up.

While the Organic Center study found that pesticide use on Bt corn had actually decreased over that period, two concerns still remain. The first being developing insect resistance as noted above. The second being the industry trend towards "multi-stacking" traits in genetically-engineered seeds. In 2010 Monsanto released an eight trait corn, including multiple herbicide and insect resistant traits. More recently, Monsanto has released a "triple stack" sweet corn that contains both glyphosate resistance and Bt traits. It is clear from the development of this technology that there are strong commercial interests among pesticide producers and biotechnology companies (increasingly one and the same) to ensure sales of both product groups. It is highly unlikely that Bt corn varieties available to Maine farmers will only contain Bt traits, meaning that use of Bt corn is inextricably linked to the use of glyphosate and the well documented problem of resistant weeds.

The Bt corn training program currently required provides more than technical training on the use of this technology, but creates an opportunity for new and experienced users of Bt corn technologies to discuss evolving issues with the technology. Maine farmers are the first line of defense when it comes to early identification of developing resistance, whether insects or weeds. Given the rapidly evolving nature of this technology, and its track record thus far, eliminating the training program requirement at this time would be premature.

Food for Maine's Future PO Box 51 Sedgwick, ME 04676 207-244-0908

Maine farmers, consumers, rural communities, and the environment have strong incentives for reducing the amount of pesticides behind used in this state. The use of genetically engineered crops in other parts of the country have led to environmental disasters and rising costs for farmers. It behooves the Maine Board of Pesticide Control to employ a multi-faceted approach to ensuring that Maine avoids the problems that have developed in other parts of the country.

Sincerely,

Bob St.Peter
Director
Food for Maine's Future

Attached Articles:

“Weeds Gone Wild”

“Resistance by Corn Rootworm to Bt Corn Reported in Parts of Iowa”

“Managing Glyphosate Failures”

Weeds Gone Wild

January 5, 2011

By: [Pam Smith](#), Farm Journal Seeds and Production Editor



Believe it or not, hand weeding has come back into practice as Southern growers struggle with weed resistance. These wagons are laden with Palmer amaranth, one of the most notorious yield-robbing weeds.

Larry Steckel's PowerPoint photos send an uneasy murmur through the crowd. The University of Tennessee Extension weed specialist has returned to his native state of Illinois to explain how Southern growers are managing glyphosate-resistant weeds.

Most of the farmers, crop consultants and custom applicators in the room are familiar with the topic. Still, Steckel's photos of wagons heaped high with hand-plucked Palmer amaranth are an attention grabber. They resemble those gag postcards you find in gas stations that brag of giant potatoes or monster carrots.

Weed resistance is no joke, however, and weed-choked fields have become all too common the past few years, Steckel maintains. "Palmer pigweed is so bad in some areas that growers have resorted to hand-weeding at a cost of \$50 to \$100 per acre. Some cotton fields have been completely abandoned," he says.

Perhaps more disturbing is Steckel's observation that the waterhemp outbreaks in southern Illinois this past summer remind him of Tennessee only four years ago, before resistant weeds went wild.

"The first year you have glyphosate resistance on your farm is when it costs you the most because it is usually too late to do anything by the time you figure it out. There's nothing that will control 10" to 12" Palmer or waterhemp if glyphosate fails," he says.

University of Illinois Extension weed specialist Aaron Hager explains that Palmer amaranth and common waterhemp are two different species that are closely related. Palmer is more aggressive than waterhemp, setting a taproot that can extend as long as 5'. Originally a desert plant, it is happy when conditions turn hot and dry.

To date, Palmer amaranth has mostly been a Southern problem, although it has been observed in the Midwest. "I keep waiting for the other shoe to drop on Palmer amaranth in this state," Hager says.

"We're not really sure why it hasn't moved farther north."

Studies to uncover the secrets of Palmer amaranth movement are currently being conducted by Adam Davis, a University of Illinois and Agricultural Research Service invasive weed specialist. Changing climate conditions, human transport and pollen drift all play a role in the increasing establishment of the pesky intruder.

Waterhemp is a widespread problem throughout the Midwest and is now confirmed resistant to five different classes of chemistry.

Choose a herbicide system. Steckel says the first defensive step is to recognize that glyphosate resistance is real. "The total postemergence era is over and it is never coming back," he says. "A pre-emergence product is a necessity, and in many cases we also have to put down an early post application that provides residual control and is followed by another post application, or we have a mess." Depending on the summer, Tennessee can experience three generations of Palmer amaranth in one season.

Steckel says growers in his state are rapidly embracing the only alternative nonselective postemergence program: LibertyLink and Ignite. "It's the only way we can grow dryland cotton and manage Palmer," he says. "There has been a wholesale switch to this technology in cotton and LibertyLink soybeans are in high demand.

"I'm not worried about glyphosate resistance anymore. That horse is out of the barn. My concern now is the long-term viability of Ignite and other tools like PPO inhibitors if we continue to use them at current levels," he says. "Growers have to plan to rotate chemistries and modes of action to keep the weeds confused."

Part of the challenge for many Southern growers is that they must also manage glyphosate-resistant marestail. "Once marestail gets bigger than the size of a Coke can, it's hard to do anything with it," Steckel notes.

He says a dicamba-based system is still a very consistent horseweed burndown program. Another option, the new herbicide Sharpen (part of the Kixor family), falls into the protoporphyrinogen oxidase (PPO)-inhibiting class of herbicides.

"Sharpen translocates more effectively through the leaf material than Valor and as a result can provide post control of weeds like horseweed," Steckel says. "However, at the typical use rate of 1 oz. per acre, it will provide only seven to 10 days of residual control compared to four to five weeks of residual control with Valor."

For burndown 30 to 14 days prior to planting, he recommends dicamba plus glyphosate or Gramoxone Inteon.

Another option is to tank-mix Sharpen with glyphosate or Gramoxone Inteon.

His preferred pre-emergence strategy is to tank-mix Gramoxone Inteon with the farmer's choice of Valor, Valor XLT, Envive, Authority MTZ, Boundary or Prefix. The Gramoxone Inteon will eliminate newly emerged glyphosate-resistant horseweed or Palmer amaranth, and the other herbicides provide residual control.

"Keep in mind that if you use Sharpen as a burndown within 30 days of the pre-emerge, no PPO-based products can be applied," Steckel cautions.

Scout repeatedly. "In order to manage glyphosate-resistant Palmer amaranth, you have to know, not assume, the pre-emerge worked," Steckel says.

"If the pre was activated, the field will still need to be scouted to determine when the pre is starting to break," he says. See the chart below for Steckel's postemergence strategies based on pre-emergence success or failure.

If the pre was not activated by rain, he suggests an early postemergence application of Flexstar/Prefix in conventional or Roundup Ready soybeans, or Ignite in LibertyLink systems.

"Remember, once glyphosate Palmer amaranth grows larger than 4" tall, there are no herbicides that will control it in a conventional or Roundup Ready soybean system. A very high rate of Ignite [36 oz. per acre] can control Palmer up to about 7" tall, but it will provide very inconsistent control of anything beyond that," Steckel says.

It's a battle. What growers often fail to grasp is how many things change as they head toward using more complex herbicide programs.

"We're so used to simply spraying glyphosate," Steckel notes. "However, 120' booms at 18 mph don't work as well with Sharpen, Gramoxone and Flexstar," he says. Flat fan nozzles need to replace air induction tips. Think retro when it comes to water volume too—15 gal. is a minimum requirement.

Timing may be the biggest hurdle. "We know that Palmer amaranth can grow 2.4" to 2.6" per day and waterhemp 1.5" to 2.1" per day. You have hours—not days—to get Palmer amaranth and waterhemp under control if glyphosate hasn't done the job," he says.

Steckel says operating loans and cash rents are beginning to reflect the increased cost of weed management and added herbicides. "Conventional soybeans are picking up a bit," he says. "We experienced shortages in some herbicides last year. For the first time, I'm seeing growers back off on acres because they aren't sure they can be timely with herbicide applications."

Tuesday, August 30, 2011

Resistance by Corn Rootworm to Bt Corn Reported in Parts of Iowa

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By Ric Bessin and Doug Johnson, University of Kentucky

Last month Dr. Aaron Gassmann, Entomologist at Iowa State University, and coworkers reported in the *Journal Plos One*, that he found evidence of field-evolved resistance in western corn rootworm to one of the Bt toxins in corn. In their study, rootworms were collected from fields in northeastern Iowa where growers had identified severe feeding on Bt rootworm corn (containing the Cry3Bb1 trait for rootworm control). Each of the problem fields had a history of raising continuous corn that contained the Cry3Bb1 gene for at least three consecutive years. The authors found a significant, positive correlation between the number of years a field had used Cry3Bb1 corn and the survival of western corn rootworm larvae collected from those fields developing on Cry3Bb1 corn. Rootworms collected from those problem fields did not appear to have resistance to the other commercially registered Bt rootworm trait, Cry34/35Ab1, so there did not appear to be cross resistance for these Bt toxins. Registration of Bt rootworm corn containing the Cry3Bb1 gene occurred in 2003 and use of corn containing this trait has been widespread due to the threat posed by western corn rootworms in the Midwest.

The level of resistance observed in this study was incomplete, in that rootworms from the problem fields had lower survival on Cry3Bb1 corn than on non-Bt corn. But the problem remains; the study noted the survival of rootworms on Cry3Bb1 from problem fields was 3 times higher than with those from the control fields. What this means is that even in the problem fields, there is likely a mixture of resistant and susceptible western corn rootworms. The result for the growers is that they are experiencing severe damage to some types of Bt rootworm corn.

Dr Gassmann et al. notes several factors that may have contributed to the rapid development of field evolved resistance in northeastern Iowa. One factor is that the inheritance of the resistance does not appear to be recessive. This would mean that rootworm larvae produced from a mating of resistant and susceptible parents would have greater survival on the Cry3Bb1 corn. This greatly reduces the value of refuges deployed to delay resistance.

Another factor is the relatively low level of compliance with the use of structured refuges on farms using Bt corn. Across the Midwest, compliance estimates have ranged from 50 to 70%. Our surveys at some growers meetings in Kentucky have estimated compliance below 60% among growers using Bt corn. The strategy used to delay/prevent resistance to Bt crops in the US has been the high dose-refuge strategy. Refuges are designed to allow enough pests that are susceptible to the Bt traits to survive so that they can 'dilute' the smaller populations of resistant pests that may potentially develop from the Bt corn fields. While registered Bt corn events that target corn borers are considered high-dose events, whether Bt rootworm events represent a high dose strategy remains to be determined.

So what can Kentucky corn growers do to prevent/delay resistance to western corn rootworm and other

corn insect pests? Problems with corn rootworm in KY are isolated, while planting of corn with Bt rootworm traits is widespread. The Iowa study found the correlation with years of use of the traits and levels of resistance. Using Bt rootworm traits only in situations where it is needed would help to preserve a more susceptible population of western corn rootworms. In Kentucky where we do not have the soybean variant of the western corn rootworm, rotation remains the most effective and economical tool to manage the western corn rootworm. In Kentucky as in other parts of the Midwest, compliance with refuge requirements has been relatively low, so durability of Bt corn technologies can be increased by raising levels of refuge compliance. If and when Refuge in the Bag (RIB) is approved, growers using RIB will not need to plant structured refuges. Otherwise growers using Bt corn need to plant a structured minimum of 5 or 20% refuge as required by the type of Bt corn.

In our opinion, one of the most important benefits of IPM is the prevention and/or management of pest resistance. By using multiple approaches to manage insect populations we reduce the likelihood that a pest will develop resistance to any one tactic. Another way of looking at this is that by using only a single tactic to control a pest population over a long period of time, we increase the risk of developing resistant pest populations.

Managing Glyphosate Failures

By Bob Hartzler and Mike Owen, Department of Agronomy, ISU

In the past week we have received numerous calls from farmers, agchem dealers and industry representatives regarding waterhemp and horseweed/marestail surviving glyphosate applications made in late June and early July. Although there are numerous reasons why a herbicide application might fail at controlling weeds, we are certain that a significant percentage of these failures are due to the presence of glyphosate-resistant biotypes in the field.

The common question is what can be done to rescue the situation in the field. Unfortunately, at this time of the year there are few options. If glyphosate failed earlier to control the weeds, it is unlikely that a repeat application will do any good in controlling the surviving weeds. The PPO inhibitors (Reflex, Cobra, Phoenix, UltraBlazer, etc.) are the other postemergence option available for waterhemp in soybean. However, the label restrictions regarding weed size are long past and thus these herbicides are unlikely to provide affective control. There also is a potential for serious crop injury with the high temperature forecast for the coming week. Furthermore, the harvest interval restrictions for each of these products should be reviewed.

Although not popular with the majority of growers, mechanical control is really the only available option to manage escaped and/or herbicide-resistant waterhemp and horseweed/marestail at this time. If only scattered plants are present in the field, hand-weeding the field would be worth the effort since this will slow the establishment and spread of resistance within the field. If the presence of surviving waterhemp and horseweed/marestail is more widespread, a trip back in time using a cultivator is really the only option to reduce the problems with these escapes.

Bob Hartzler and Micheal Owen are ISU professors of agronomy and weed science extension specialists with responsibilities in weed management and herbicide use.

Technical Announcement:

Widely Used Herbicide Commonly Found in Rain and Streams in the Mississippi River Basin

Released: 8/29/2011

Contact Information:

U.S. Department of the Interior, U.S. Geological
Survey

Office of Communications and Publishing
12201 Sunrise Valley Dr, MS 119
Reston, VA 20192

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Glyphosate, also known by its tradename Roundup, is commonly found in rain and rivers in agricultural areas in the Mississippi River watershed, according to two new USGS studies released this month.

Glyphosate is used in almost all agricultural and urban areas of the United States. The greatest glyphosate use is in the Mississippi River basin, where most applications are for weed control on genetically-modified corn, soybeans and cotton. Overall, agricultural use of glyphosate has increased from less than 11,000 tons in 1992 to more than 88,000 tons in 2007.

"Though glyphosate is the mostly widely used herbicide in the world, we know very little about its long term effects to the environment," says Paul Capel, USGS chemist and an author on this study. "This study is one of the first to document the consistent occurrence of this chemical in streams, rain and air throughout the growing season. This is crucial information for understanding where management efforts for this chemical would best be focused."

In these studies, Glyphosate was frequently detected in surface waters, rain and air in areas where it is heavily used in the basin. The consistent occurrence of glyphosate in streams and air indicates its transport from its point of use into the broader environment.

Additionally, glyphosate persists in streams throughout the growing season in Iowa and Mississippi, but is generally not observed during other times of the year. The degradation product of glyphosate, aminomethylphosphonic acid (AMPA), which has a longer environmental lifetime, was also frequently detected in streams and rain.

Detailed results of this glyphosate research are available in "Occurrence and fate of the herbicide glyphosate and its degradate aminomethylphosphonic acid in the atmosphere," published in volume 30 of *Environmental Toxicology and Chemistry* and in "Fate and transport of glyphosate and aminomethylphosphonic acid in surface waters of agricultural basins," published online in *Pest Management Science*. Copies of the reports are available from the journals or from Paul Capel (capel@usgs.gov).

Research on the transport of glyphosate was conducted as part of the USGS National Water-Quality Assessment (NAWQA) program. The NAWQA program provides an understanding of water-quality conditions, whether conditions are getting better or worse over time, and how natural features and human activities affect those conditions. Additional information on the NAWQA program can be found [online](#).

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October 7, 2011

Henry Jennings, Director
Maine Board of Pesticides Control
State House Station 28
Augusta, ME 04333

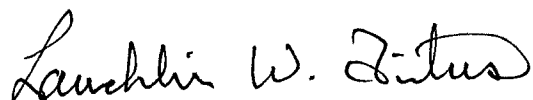
Mr. Jennings:

I am writing to testify in favor of my earlier request that the Board of Pesticides Control amend Chapter 41 to eliminate the Bt Plant Pesticide Protectant (PIP) training requirement and the associated recertification language.

The training requirement has been in place long enough so that the vast majority of farmers interested in using PIP trait technologies have been through two of the training and certification cycles (two year cycle). Numerous farmers have used the technologies since they have been allowed in Maine and are certainly more knowledgeable about the various requirements such as Insect Resistance Management (IRM), refuge areas, and destruction of the crop residue in the case of sweet corn. This knowledge transfers through the agricultural community in many ways--grower meetings, personal discussion between growers, from seed dealers, and consultants. In addition, I understand that BPC staff have inspected most, if not all, of the farms that have used these traits and found compliance with the technology use guides and stewardship agreements required by the manufacturers to be very good. I do not dispute that the required training has been beneficial in this regard. The manufacturers, distribution chain, seed dealers, cooperative extension personnel, and private agronomists continue to provide a high level of ongoing training to interested growers. I believe that the BPC may now rely upon these folks to provide this ongoing training along with updates of new traits and technologies that may be approved for use in Maine in the future and repeal the training requirement found in Chapter 41.

This training requirement has been another example of how Maine is a state that is more difficult to do business in than others. It adds another step to the sale and delivery of corn seed that takes time and energy on the part of seed dealers to verify that Maine farmers have a current BPC Bt certificate. It certainly takes time and energy on the part of the farmers to obtain repetitive training on a topic that they are familiar with. And of course it takes time and energy on the part of the BPC staff that could possibly be utilized in other areas that may have a more positive impact on the public good.

Sincerely yours,



Lauchlin W. Titus