North Central Ohio
Agronomy Report
Erie Basin Extension Education & Research Area
Issue 16-10

Dear Agricultural Producer:

Row crop production was surprisingly better than many anticipated. After a relatively dry winter; early planting set the table for great crop yield potential. A period of wetter than normal conditions in May and June recharged the soil moisture. The early dry conditions allowed warm soils to support very rapid early development. A summer that proved to be more than 18% warmer than normal, along with some strategic rainfall events for some, allowed crop development to move forward and yield potential to build. A mild September allowed crops to dry down rapidly and a dry harvest allowed for the most rapid and earliest harvest on record. Many are ending up the year with better grain supplies and much better prices for grain than seemed possible even two months ago.

As such, many farmers are seeking taxable expenes. Fertilizer P&K, tile, lime, and high yeilding seed will save cents for you in 2010 and make cents for you in 2011. Finally, go to http://crawford.osu.edu for announcements of upcoming agronomy and farm management programs this winter.

This is the final newsletter for the year 2010. Best wishes for a Happy Thanksgiving and a joyous holiday season next month.

Sincerely,

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Helpful Links:
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http://fcn.agronomy.psu.edu
http://precisionag.osu.edu
http://www.ipm.uiuc.edu
http://www.oardc.ohio-state.edu/ohiofieldcropdisease
http://www.entm.purdue.edu/Entomology/ext/targets/newslett.htm

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2010 Corn Hybrid and Soybean Variety Performance Tests

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2010 Ohio Corn Performance Test: An Overview

Peter Thomison, Corn Production Specialist; Rich Minyo, State Corn Specialist;
Allen Geyer, Dept. Horticulture and Crop Sciences;
Bert Bishop, OARDC Statistician; David Lohnes, OARDC SR Systems Dev
Ohio State University Extension / OARDC

In 2010, 299 corn hybrids representing 35 commercial brands were evaluated in the Ohio Corn Performance Test. Testing was conducted in three regions of Ohio - Southwestern/West Central (SW/WC); Northwestern (NW); and North Central/Northeastern (NC/NE), with three test sites established within each region. Testing was also conducted at Coshocton, an area with high gray leaf spot incidence. Entries in the regional tests were planted in either an early or full season maturity trial. These test sites provided a range of growing conditions and production environments.

Environmental conditions varied greatly across Ohio during the 2010 growing season, especially with regard to the amount and distribution of precipitation. Yields were highest at the S. Charleston and Washington CH test sites in the SW region (averaging above 242 bu/A) and lowest at Hoytville in NW Ohio and Beloit in NE Ohio (averaging less than 148 bu/A). At most test sites, rainfall from planting through the mid to late vegetative stages of corn development was above normal. Excessively wet soils in May and June limited early season root development and resulted in shallow root systems. Saturated soil conditions contributed to reduced emergence of some hybrids. Dry weather conditions combined with above average temperatures persisted from the late vegetative stages through maturity at most sites. Water deficits were especially severe at the Hoytville test site. Test results from Greenville in the SC/WC region and Wooster in the NC/NE region test locations are not reported because of weather related damage. At Greenville, heavy rains shortly after planting, in combination with late season water stress, resulted in erratic stands that led to highly variable yields. At Wooster, strong winds associated with a tornado on Sept. 16, destroyed and flattened much of the corn test. At other test sites, water stress was limited by timely rains and adequate soil moisture. In contrast to 2009, high temperatures during grain fill accelerated crop maturation and resulted in much lower than normal grain moisture at harvest. Despite the varying degrees of stress present at most sites, stalk lodging was negligible – averaging no more than 5% at any location. Extensive foliar disease (primarily gray leaf spot and northern corn leaf blight) was evident late in the season at several locations but impact on crop performance appeared to be limited.

Grain yields in the Southwest and West Central region (the S. Charleston and Washington C.H. locations), averaged across hybrid entries in the early and late trials, were 243 bu/A. Yields in the Northwest region (Van Wert, Hoytville, and Upper Sandusky locations) averaged across hybrid entries in the early and late trials, were nearly 185 bu/A. Yields in the North Central and Northeast region (the Bucyrus and Beloit locations) averaged across hybrid entries in the early and late trials, were 180 bu/A. In addition hybrid yields at Coshocton averaged 212 bu/A.

Tables 1 and 2 provide an overview of 2010 hybrid performance in the early maturity and full season hybrid trials by region. Averages for grain yield and other measures of agronomic performance are indicated for each region. In addition, the range in test sites averages is shown in parentheses. . Complete results are available online at: http://www.ag.ohio-state.edu/~perf/ and http://www.oardc.ohio-state.edu/corntrials/.

Table 1. A regional overview of the early maturity 2010 Ohio Corn Performance Test.

Region	Entries	Grain Yield (Bu/A)	Moisture (%)	Lodging (%)	Emergence (%)	Final Stand (plants/A)	Test Wt. (lbs/bu)
SW/WC	72	239 (212-260)	16.6 (14.1-19.7)	0 (0-1)	96 (87-99)	33700 (28400-38900)	59.7 (56.6-63.3)
NW	88	181 (162-204)	16.8 (14.7-19.5)	2 (0-21)	88 (75-97)	30700 (24200-36600)	59.5 (57.1-62.5)
NE/NC	78	181 (163-203)	18.4 (15.3-21.5)	2 (0-13)	92 (79-98)	32400 (25200-38300)	58.0 (55.3-61.3)

Table 2. A regional overview of the full season 2010 Ohio Corn Performance Test.

Region	Entries	Grain Yield (Bu/A)	Moisture (%)	Lodging (%)	Emergence (%)	Final Stand (plants/A)	Test Wt. (lbs/bu)
SW/WC	96	246 (211-265)	18.0 (15.4-20.9)	0 (0-3)	97 (87-100)	34100 (27500-38700)	58.7 (55.6-62.0)
NW	92	191 (168-213)	18.3 (16.5-21.6)	5 (0-28)	89 (74-96)	30600 (23200-35200)	59.0 (55.2-62.8)
NE/NC	65	181 (159-215)	20.4 (16.6-24.9)	2 (0-18)	93 (79-99)	33100 (26900-37800)	57.5 (54.3-61.6)

As you peruse this year's corn test results, it's important to keep the following in mind. Confidence in test results increases with the number of years and the number of locations in which the hybrid was tested. Data from a single test site should be avoided, especially if the site was characterized by abnormal growing conditions. Look for consistency in a hybrid's performance across a range of environmental conditions. Grain moisture percentage at harvest can provide a basis for comparing hybrid maturity, especially when grain moisture levels average above 20% at a test site. Since drydown was so rapid this year, using grain moisture as an indicator of relative maturity may be of somewhat limited value this year compared to past years (especially 2009). Similarly, the exceptionally low level of stalk lodging this year provides a limited basis for making comparisons of stalk quality among hybrids. Yield, standability, test weight, and other comparisons should be made between hybrids of similar maturity to determine those best adapted to your farm. Results of the crop performance trials for previous years are also available online at: http://www.ag.ohio-state.edu/~perf/archive.htm

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Pesticide Applicators to See Licensing Changes

Joanne Kick-Raack, Program Director, Entomology
Ohio State University Extension

Ohio private pesticide applicators will see changes this fall in their licensing categories. A pesticide license is required for farmers who use restricted-use pesticides in their farming operation.

"The Ohio Department of Agriculture (ODA) has simplified the categories for private applicators," said Joanne Kick-Raack, Ohio State University Extension state director for the Pesticide Safety Education Program. "The change will mean fewer exams for new applicators and many current license holders will have fewer categories for recertification."

The simplification undertaken by ODA has reduced the number of licensing categories from 13 to only seven. This consolidation reflects the changing needs of Ohio farming operations. Several smaller-use categories have been combined for applicators. For example, growers who produce a variety of food crops will now only need one category for fruit and vegetable crops. The new categories for a private license include Category 1: Grain and Cereal Crops; Category 2: Forage Crops and Livestock; Category 3: Fruit and Vegetable Crops; Category 4: Nursery and Forestry Crops; Category 5: Greenhouse Crops; Category 6: Fumigation; and Category 7: Specialty Uses.

Some applicators will have fewer categories on their license, but will still be able to purchase and use the same pesticide products. The specialty categories of seed treatment, non-cropland, aquatics, tobacco and wood preservation were consolidated into the first six categories. This means an applicator would be able to purchase materials for these applications with at least one category on their license. For example, an applicator with Category 1 on their license will still be able to purchase products for grain crops but also be able to buy products to treat seed and manage their stored grain, non-crop areas and ponds on their farm. Tobacco and wood preservation were also consolidated.

Category 7 represents specialty uses. This category is only for applicators that do not have the first six categories on their license. An example would be someone who only does wood preservation on lumber and does not need any other crop categories. Their license would reflect this by only having Category 7. If an applicator has any other category on their license, they do not need Category 7.

Kick-Raack said the Core category, which covers safety and stewardship for pesticide use remains unchanged and is required for all applicators. Recertification will still require a total of three hours of training. If applicators have questions, they can contact their

local OSU Extension educator. More detailed information about the new categories is also available at the Pesticide Safety Education Program website at http://pested.osu.edu or the ODA website at http://ohioagriculture.gov.

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Restructured and Updated OSU Weed Management Website

Mark Loux, Department of Horticulture and Crop Science
Ohio State University Extension

The OSU weed management website has been restructured to resemble the new format of the OSU Crops Team and C.O.R.N. websites. We are trying some new things on the site, such as short video clips from the field and "Ask a Weed Scientist", where readers can submit questions and view the answers online. Currently on the site: pdf of the 2011 Weed Control Guide (printed copies available in December); article and video Powerpoint presentation on new herbicides; and a video clip on fall herbicide application for marestail management. Address - http://agcrops.osu.edu/specialists/weeds/.

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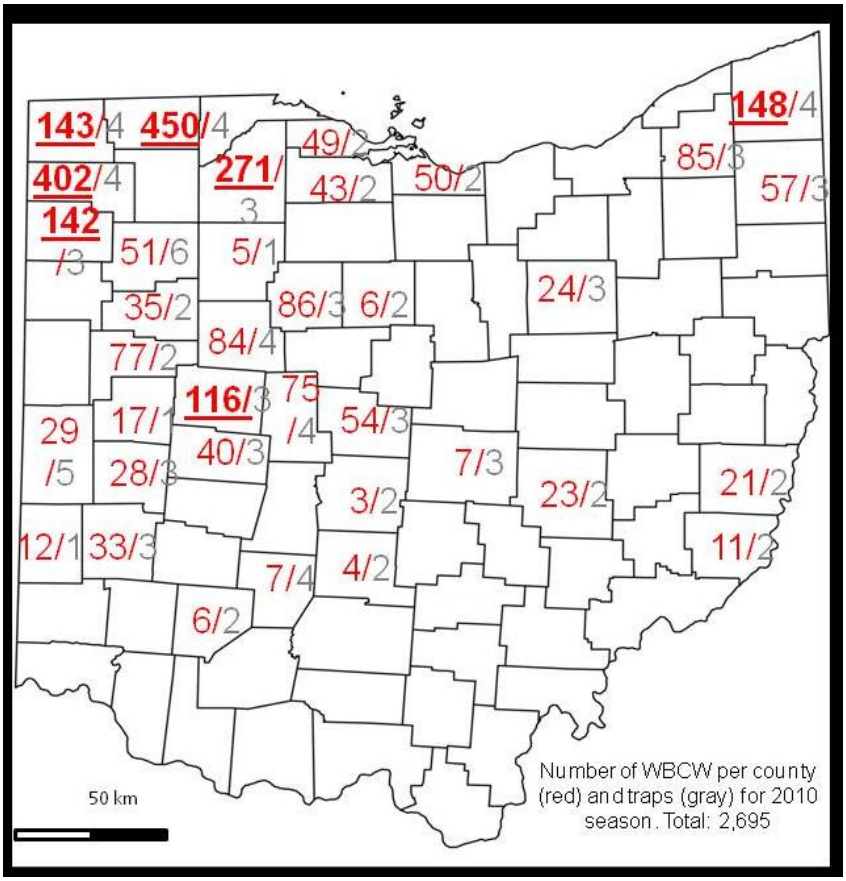
Summary and Status of Western Bean Cutworm in Ohio

Ron Hammond, Andy Michel, and Bruce Eisley, Department of Entomology
Ohio State University Extension

Similar to the last 4 years, western bean cutworm increased its presence in Ohio this past growing season. Compared to 566 moths caught in 2009, our final total of adult moths caught was 2,695. Most of the moths were caught in northwest Ohio, with more than 400 moths collected in both Defiance and Fulton counties alone. Additionally, we found western bean cutworm egg masses and larvae in field corn. Fortunately, we never found a field with economic damage. However, the large increase of adult moths caught from 2009-2010, and the presence on infested corn, suggests that corn producers will have to keep western bean cutworm near the top of their lists of important corn pests.

Our best management tactic remains monitoring for adults and scouting corn fields for eggs and larvae. While transgenic varieties with Cry1F (Herculex brand) are effective against western bean cutworm, this product does not provide 100% control like European corn borer. Furthermore, since we have not seen economic damage in Ohio, producers may not recover the input cost of the Bt trait at least until economic damage is reported. For a complete updated map of the 2010 season, as well as maps from previous years, please go to our website: http://entomology.osu.edu/ag/.



U of I Confirms Soybean Pathogen's Resistance to Fungicides

Carl Bradley, Crop Sciences
University of Illinois

Research conducted by the University of Illinois and the University of Tennessee confirms that the fungus that causes frogeye leaf spot (FLS) of soybean, Cercospora sojina, has shown resistance to strobilurin fungicides in a Tennessee soybean field.

"Strobilurin fungicides belong to the chemistry class known as the quinone outside inhibitors (QoIs), which are the most widely used group of foliar fungicides applied to field crops to manage plant diseases," said Carl Bradley, U of I Extension plant pathologist.

These fungicides can be sold as one-active ingredient products such as Headline (BASF Corporation) or Quadris (Syngenta Crop Protection) or in products that combine them with a fungicide in a different chemistry class known as the demethylation inhibitors, sometimes referred to as triazoles, he said. Products that include a strobilurin-triazole combination of active ingredients include Quilt (Syngenta Crop Protection) and Stratego (Bayer CropScience).

Strobilurin fungicides have been deemed high risk for fungal pathogens developing resistance to them. This high-risk status has been determined by the Fungicide Resistance Action Committee (FRAC), an international committee that evaluates fungicides' likelihood of developing resistance.

"Plant pathogenic fungi developing resistance to strobilurin fungicides is not new," Bradley said. "This has already occurred in potatoes and other crop and disease systems where multiple fungicide applications occur during the growing season."

In the major soybean production areas in the United States, soybean fields are generally treated once during the season with a fungicide (if treated at all), Bradley said.

"However, we were somewhat surprised to find resistance so soon," he added. "Every time you apply a fungicide, you increase the selection pressure and the opportunity to select out individuals in the pathogen population that have resistance or reduced sensitivity to the fungicide."

In 2008, Bradley's laboratory began a project funded by the Illinois Soybean Association to develop a fungicide resistance monitoring program. Since then, his lab has been obtaining samples, conducting tests and monitoring isolates collected from Illinois.

"This year, we decided to cast our net a little farther, particularly in the South," he said. "In Tennessee, FLS is a major soybean foliar disease. Dr. Melvin Newman of the University of Tennessee sent me samples from a field that had been sprayed twice with strobilurin fungicides, but still continued to have high levels of FLS, which was an indication of potential fungicide resistance."

Bradley's team confirmed that the sensitivity of the Tennessee isolates was reduced as compared to the sensitivity of baseline isolates.

In petri dish tests conducted at the U of I, spores from isolates of Cercospora sojina germinated in the presence of high concentrations of azoxystrobin, pyraclostrobin, and trifloxystrobin, which are the strobilurin active ingredients found in Quadris, Headline, and Stratego

"This proved we were dealing with isolates that have reduced sensitivity to strobilurin fungicides," he said. "Currently, Tennessee is the only state in which we have documented isolates like these, but we are continuing to perform tests on isolates collected from fields in Illinois and other states."

U of I's research will continue into the 2011 season with funding from the Illinois Soybean Association.

In the meantime, Bradley reminds growers that FLS can be controlled with other management tactics such as planting soybean varieties that have high levels of resistance to FLS or using effective triazole fungicides.

"Dr. Newman's work has shown that some triazole fungicides provide good control of FLS and can be used alone, or tank-mixed with strobilurin fungicides if the grower is concerned with more than just FLS," he said.

The most effective manner to slow the spread of resistant isolates is to only use a fungicide when needed.

"If we overuse fungicide products, we won't be able to use them for very long because we will select out resistant populations," he said. "There's a lot of marketing to use fungicides for yield increases, but little talk about where those increases come from. They come from protection of yield from diseases. In some cases they pay off because conditions have been favorable for diseases. But in years where conditions aren't favorable for disease, we generally don't see a big yield increase."

Bradley's crew is expanding their work in monitoring fungicide resistance in pathogens of corn. They are currently developing strobilurin sensitivity baselines for the gray leaf spot and northern corn leaf blight pathogens.

For more information on FLS, read The Bulletin, an online publication written by U of I Extension specialists in crop science, at http://ipm.illinois.edu/bulletin/

Digital photos available at: http://www.aces.uiuc.edu/news/News_Photos/FLS

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Frogeye Leaf Spot Pathogen with Reduced Sensitivity to Fungicides Found in Tennessee Soybean Field

Carl Bradley, Crop Sciences
University of Illinois

Since 2008, the Illinois Soybean Association has been funding a project in my lab to monitor for fungicide-resistant Cercospora sojina, the causal agent of frogeye leaf spot of soybean. The research has focused on fungicides in the quinone outside inhibitor (QoI) class of fungicides, generally referred to as "strobilurins." Strobilurin fungicide active ingredients registered for use on soybean include azoxystrobin, found in Quadris and Quilt (Syngenta Crop Protection); pyraclostrobin, found in Headline (BASF Corporation); trifloxystrobin, found in Stratego (Bayer CropScience); and fluoxastrobin, found in Evito (Arysta LifeScience).

At the start of the project, sensitivities of "baseline" isolates of Cercospora sojina to azoxystrobin, pyraclostrobin, and trifloxystrobin were determined using petri dish assays that measure inhibition of spore germination. These baseline isolates came from a historical collection of isolates that were all collected before strobilurin fungicides were registered on soybean, and had thus never been exposed to strobilurin fungicides.

The next steps included collecting and testing isolates of Cercospora sojina from commercial soybean fields and research plots where strobilurin fungicides had been applied. The project had focused primarily on Cercospora sojina isolates collected from Illinois. As better and more efficient lab methodologies were developed, we expanded the project and this year requested isolates from colleagues in other states.

Dr. Melvin Newman of the University of Tennessee sent us soybean leaves with frogeye leaf spot from his state. Some of the leaves came from a field where strobilurin fungicides had been applied twice, but the field continued to have severe frogeye leaf spot. Isolates from that field were obtained and tested using the petri dish spore germination assays. The assay results indicated that spores from these isolates germinated at high concentrations of azoxystrobin, pyraclostrobin, and trifloxystrobin. It took approximately 200 to 7,000 times higher fungicide concentrations to achieve spore germination inhibition with these isolates compared to the "baseline" isolates.

What Are the Implications of These Findings?

So far, the only Cercospora sojina isolates confirmed to have reduced sensitivity to strobilurin fungicides have come from this single field in Tennessee. However, this does not mean that similar isolates are not elsewhere. In light of our findings, consider these recommendations for managing frogeye leaf spot:

1. Plant soybean varieties resistant to frogeye leaf spot. This tactic is the best way to manage the disease. Resistant varieties are available for Illinois growers. Check with your seed dealer and the Illinois Varietal Information Program for Soybeans (VIPS).
2. If you plant a frogeye leaf spot-susceptible variety and are considering application of a fungicide, apply an effective triazole fungicide for control. Fungicides in the triazole chemistry class (also known as demethylation inhibitors) have a different

site and mode of action on pathogenic fungi than strobilurin fungicides, and strobilurin-resistant isolates should not be cross-resistant to triazole fungicides.

3. In situations where other foliar diseases may be present along with frogeye leaf spot and a strobilurin fungicide may be needed to control the other foliar diseases, do not spray a solo strobilurin product. Either apply a strobilurin-triazole tank-mix, or apply a product that contains both a strobilurin and a triazole product.
4. Only apply a foliar fungicide to control plant diseases. Every time a fungicide application is made, a "selection pressure" is applied that selects out individuals in the pathogen population that may have reduced sensitivity to fungicides. Applying a fungicide only when it is needed--based on disease risk and scouting observations--will reduce the selection pressure placed on the pathogen population and slow the development and spread of fungicide-resistant isolates.

The Illinois Soybean Association has continued funding of this project through 2011, and Cercospora sojina isolates collected from the 2010 growing season will continue to be assayed through the winter months.

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Storing Corn from the 2010 Harvest: Aerate and Monitor

Matt Roberts, Grain Quality Extension Specialist
Richard Stroshine, Professor, Agricultural and Biological Engineering Department
Purdue University Extension

The 2010 corn harvest season has been almost the exact opposite of the season producers experienced in 2009. In 2010 growers and researchers reported almost no field molds and harvest moistures were considerably lower than in years past. Based on conversations with growers around the state, some who started harvesting early had moistures around 25%, while the bulk of the corn was harvested at moistures between 14% and 18%. Although grain drying was not much of a concern for many producers this year, it is still important to minimize the chances of spoilage by applying the basic principles of grain storage, which include aeration and monitoring. There have already been reports of grain in storage going out of condition and in many cases this can be attributed to ignoring those principles.

Aeration: Aeration of grain in storage helps to equalize not only temperature differences, but also moisture differences throughout the grain mass. It is especially important to aerate grain that was taken out of the field and placed directly into storage. While the field average may have been 14% or 15% moisture, there may have been pockets of 16% or 18% moisture grain in the harvested corn. Aeration will help to cool this corn and may move some of the moisture out of those wetter pockets.

This year the temperature of a large portion of the corn was put in the bin at temperatures between 70 and 80 degrees. At such high temperatures there is greater risk that the corn will spoil. Corn at 16% moisture with a kernel temperature of 70 degrees can begin to spoil in approximately 30 days. Therefore as soon as corn is placed in the bin, it should be aerated and, if it was above 70 degrees, the first cooling cycle should begin when the average outside air temperature (average of the daily high and low temperatures) drops by about 10 degrees. Cooling should continue in a stepwise process throughout the fall months and into the winter. A new cooling front should be moved through the bin when the average outside air temperature has dropped another 10 to 15 degrees. Ideally, corn should be cooled to just above freezing using two or three aeration cycles. Grain temperature near the top surface of the grain mass can be determined by placing a thermometer (such as a metallic oven thermometer with a long stem) 1 to 1.5 to feet under the surface of the grain where it is left for about 5 minutes before the reading is taken. If the cooling front has moved through the bin, the temperature of the grain below the upper surface should be the average temperature when aeration was begun. Length of time for an aeration front to move through a grain mass can vary greatly depending on bin and fan size. For a small bin with a large fan it may take only a day for the cooling front to move through the bin. For a tall bin with a smaller fan it may take several weeks for the cooling front to reach the top surface.

Air takes the path of least resistance. Therefore it is important to “core” the bin by pulling a load of the grain out of the bin to level the top of the grain mass. Because of the lower harvest moistures and particularly if combine cylinder speeds were higher than necessary, there may have been higher percentages of broken kernels in the corn. Broken kernels tend to accumulate near the center of the bin and reduce airflow through that part of the grain mass. Coring the bin removes the corn with higher fines. In larger bins it may be necessary to take several loads from the bin to reduce the concentration of fines in the center of the bin.

After aeration is completed for the year the fans should be covered to prevent entrance of outside air and to keep out rodents and pets.

Monitoring: It is necessary to check a bin for signs of spoilage at least once every two weeks during the winter and weekly in the fall and spring when the outside air temperatures are warmer. The suggested way to do this is to climb to the eave door, look inside and smell for any signs of spoilage. Also, observe the roof for any frost or current or past signs of condensation. Turning on the fans during this time will assist in detecting musty odors associated with spoilage. If an observer is present it may also be useful to enter the bin and walk around on the top of the grain to determine if grain has started to spoil and clump together.

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New Transgenic Corn Product, Optimum Intrasect

Ron Hammond, Andy Michel, and Bruce Eisley, Department of Entomology
Ohio State University Extension

Pioneer has just announced a new transgenic corn hybrid that will serve as an intermediate and technical step between Optimum AcreMax 1 (from the first family of Optimum AcreMax products) to Optimum AcreMax and Optimum AcreMax Xtra (from the second family of products). While having Bt proteins for both corn borers and corn rootworm control, Optimum AcreMax 1 still needs a separate 20% refuge for the corn borer portion of the mix (refuge-in-the-bag is only for rootworms), whereas Pioneer's intent for Optimum AcreMax (for above-ground pests) and Optimum AcreMax Xtra(for above- and below-ground pests)is to be truly refuge-in-the-bag for both pests.

Until that time comes, hopefully within a year or so, they have obtained EPA approval and released to the market an intermediate product called Optimum Intrasect which contains two gene proteins, Cry1F and Cry1Ab, for corn borer control (rootworm control is not part of Optimum Intrasect). Pioneer has obtained EPA approval for the reduction of the refuge for Optimum Intrasect to a 5% block or strip, similar to that of SmartStax, the Monsanto product. Thus, growers planting Optimum Intrasect can plant a much smaller refuge compared with earlier products.

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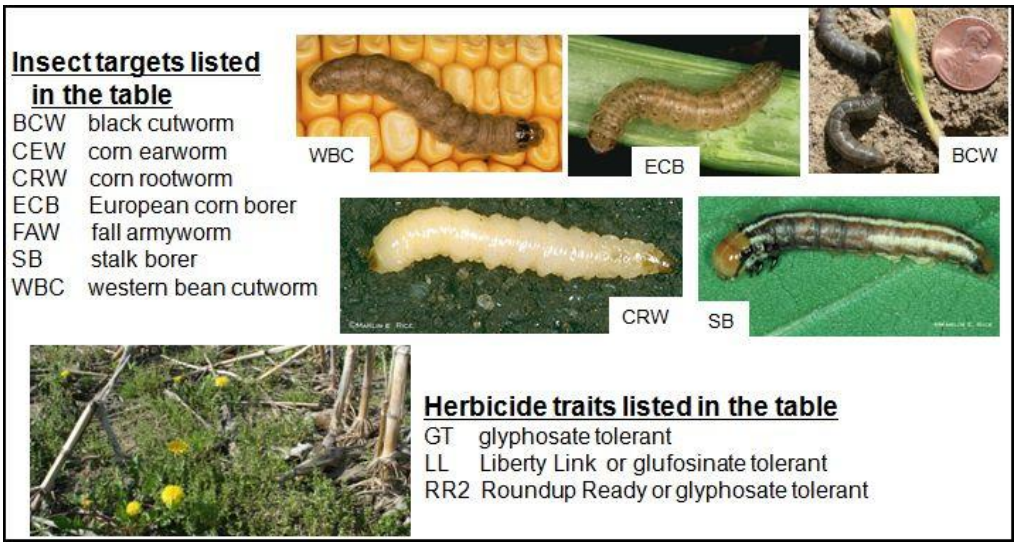
Handy Bt Trait Table

Chris DiFonzo, Professor, Dept. of Entomology, Michigan State University
Eileen Cullen, Extension Specialist, Field Crop Entomology, University of Wisconsin

With increasing complexity comes the risk of ordering unnecessary traits, forgetting what hybrids were ordered back in the fall, forgetting which seed lot was planted where, planting an incorrect refuge, and expecting too much (or something different) from a particular trait. To add another wrinkle, the price of seed has steadily risen over the last few years - $300 or more per bag is not unheard of for transgenic hybrids with seed treatments. Planting the right stack for a particular farm, with the correct refuge, becomes even more important. The table on the second page of this article summarizes the products and traits currently available, along with the spectrum of control. The table also lists refuge requirements and location. In previous seasons, the requirement for Bt corn in the Midwest was a 20% 'structured' refuge for both European corn borer and corn rootworm. As highlighted in the table, several products are now approved for a either a reduced refuge or a Refuge-In-Bag (RIB), where the seed company mixes non-Bt seed in with the transgenic corn prior to bagging.



Trait Group [Current November 2010]	Bt protein	Insects **controlled** or *suppressed*	Herbicide tolerance	Refuge % & location
Agrisure [Syngenta + Mycogen/DowAgro]				
Agrisure CB/LL	Cry1Ab	**ECB** *CEW, FAW, SB*	LL	20% - ½ mile
Agrisure GT/CB/LL	Cry1Ab	**ECB** *CEW, FAW, SB*	GT, LL	20% - ½ mile
Agrisure RW	mCry3A	**CRW**	--	20% - adjacent
Agrisure GT/RW	mCry3A	**CRW**	GT	20% - adjacent
Agrisure CB/LL/RW	Cry1Ab mCry3A	**CRW, ECB** *CEW, FAW, SB*	LL	20% - adjacent
Agrisure 3000GT	Cry1Ab mCry3A	**CRW, ECB** *CEW, FAW, SB*	GT, LL	20% - adjacent
Agrisure Viptera 3110	Cry1Ab Vip3A	**BCW, CEW, ECB, FAW, WBC** *SB*	GT, LL	20% - ½ mile
Agrisure Viptera 3111	Cry1Ab mCry3A Vip3A	**BCW, CEW, CRW, ECB,FAW, WBC** *SB*	GT, LL	20% - adjacent
Herculex [Mycogen/ DowAgro]				
Herculex 1	Cry1F	**BCW, ECB, FAW,WBC** *CEW*	LL, RR2	20% - ½ mile
Herculex RW	Cry34/35Ab1	**CRW**	LL	20% - adjacent
Herculex XTRA	Cry1F Cry34/35Ab1	**BCW, CRW, ECB, FAW, WBC** *CEW*	LL RR2 (some)	20% - adjacent
Optimum [DuPont /Pioneer]				
Optimum AcreMax1	Cry1F Cry34/35Ab1	**BCW, CRW, ECB, FAW, WBC** *CEW*	LL, RR2	10% in the bag (CRW) **plus** 20% - ½ mile (ECB)
Optimum AcreMax RW	Cry34/35Ab1	**CRW**	RR2	10% (non-Bt seed) in the bag
Optimum Intrasect Insect protection	Cry1F Cry1Ab	**ECB, WBC, BCW, FAW** *CEW, SB*	LL, RR2	5% - ½ mile
Yieldgard [Monsanto]				
YieldGard CB (YGCB)	Cry1Ab	**ECB** *CEW, FAW, SB*	RR2 (some)	20% - ½ mile
YieldGard RW (YGRW)	Cry3Bb1	**CRW**	RR2 (some)	20% - adjacent
YieldGard Plus	Cry1Ab Cry3Bb1	**CRW, ECB** *CEW, FAW, SB*	RR2 (some)	20% - adjacent
YieldGard VT Rootworm	Cry3Bb1	**CRW**	RR2	20% - adjacent
YieldGard VT Triple (VT3)	Cry1Ab Cry3Bb1	**CRW, ECB** *CEW, FAW, SB*	RR2	20% - adjacent
Genuity [Monsanto or Monsanto + Mycogen/DowAgro]				
Genuity VT Double Pro (VT2P)	Cry1A.105 Cry2Ab2	**CEW, ECB, FAW**	RR2	5% - ½ mile
Genuity VT Triple Pro (VT3P)	Cry1A.105 Cry2Ab2 Cry3Bb1	**CEW, CRW, ECB, FAW**	RR2	20% - adjacent
SmartStax or Genuity SmartStax (GENSS)	Cry1A.105 Cry2Ab2 Cry1F Cry34/35Ab1 Cry3Bb1	**BCW, CEW, CRW, ECB, FAW, WBC**	RR2, LL	5% - adjacent

Empowerment Through Education

Visit Ohio State University Extension's Websites at:
http://ohioline.osu.edu
http://extension.osu.edu
http://licking.osu.edu

Preserving Corn and Soybean Profits with Agronomy Updates

Crawford Agronomy/PAT Session
January 25, 2011
5 pm to 10 pm
at
Crawford County Court House
Lower Level Conference Room
112 East Mansfield St., Bucyrus, OH 44820

Crawford Agronomy/PAT Session
March 29, 2011
8 am to Noon
at
Crawford County Court House
Lower Level Conference Room
112 East Mansfield St., Bucyrus, OH 44820

Sponsored by Ohio State University Extension in Crawford County

Topics:

- When Can You Reduce P & K Fertilizer Without Yield Loss
- What Insects Should You Protect Against In 2011
- Make Money With The Right Weed Control Program
- Lime Selection for North Central Ohio
- Private Pesticide Applicator Recertification Credits

Cost: $25.00 Pre-Register by Friday, January 21, 2011 for January 25th session
(Registration fee covers PAT Rebate Charge, Guest Speaker fees and Handouts)
$30.00 at the Door

Please return this registration form and fee by January 21st to: OSU Extension Crawford County, 112 East Mansfield Street, Suite 303, Bucyrus, OH 44820. Checks should be made payable to "OSU Extension." Question call (419) 562-8731.

THE OHIO STATE UNIVERSITY EXTENSION

Name_____

Address_____ City_____ Zip_____

Phone_____

Meeting Date Planning on Attending: _____

Preserving Corn and Soybean Profits with Agronomy Updates

Richland Agronomy/PAT Session
February 1, 2011
1 pm to 5 pm
Longview Center
1495 West Longview Avenue
Mansfield, Ohio 44906

Ashland Agronomy/PAT Session
February 3, 2011
1 pm to 5 pm
Ashland County Fairgrounds
2042 Claremont Ave
Ashland, OH 44805

Sponsored by Ohio State University Extension in Crawford, Richland, and Ashland Counties

Topics:

- When Can You Reduce P & K Fertilizer Without Yield Loss
- What Insects Should You Protect Against In 2011
- Make Money With The Right Weed Control Program
- Lime Selection for North Central Ohio
- Private Pesticide Applicator Recertification Credits

Cost: $25.00 Pre-Register by Friday, January 28, 2011
(Registration fee covers PAT Rebate Charge, Guest Speaker fees and Handouts)
$30.00 at the Door

Please return this registration form and fee by January 28th to: OSU Extension Crawford County, 112 East Mansfield Street, Suite 303, Bucyrus, OH 44820.
Checks should be made payable to "OSU Extension." Questions call (419) 562-8731.

THE OHIO STATE UNIVERSITY EXTENSION

Name_____

Address_____ City_____

Zip_____ Phone_____

Location planning on attending: _____