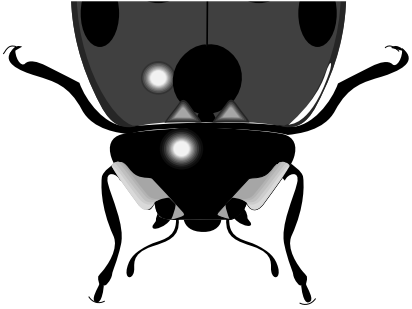

PEST MANAGEMENT & CROP DEVELOPMENT BULLETIN

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Executive editor: Kevin Steffey, Extension Entomologist

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Also in This Issue

Last Issue in 2004

Another unique year is coming to an end, and already those of us involved in agriculture have been planning for 2005, which undoubtedly will be different from 2004. In the months between now and planting time, we'll all be involved in learning as much as we can about the season recently concluded. Many of us will share lessons learned during 2004 with audiences throughout the Midwest, so please accept our open invitation to attend one or more educational programs to gain additional insight.

As always, the contributing authors for *the Bulletin* extend our heartfelt thanks to all of our readers for your continued support, and we thank many of you for your commitment to share information with us. This may sound like a tired refrain, but your input is invaluable. So keep it coming during 2005. We appreciate being able to extend your knowledge to all of our readers.

Although this is the last printed issue of *the Bulletin* in 2004, keep your eyes open for updates published on our Web site (http://www. ipm.uiuc.edu/bulletin) before issue no. 1 of 2005 is available in March. For those of you who have subscribed to receive e-mail notification of updates, watch your inbox. We may make more use of this feature than we have in the past. For nonsubscribers, check into our Web site now and then. We will try to keep everyone apprised of developments regarding soybean rust and western corn rootworms (among other plant disease and insect topics), as well as timely topics regarding weed management, crop production, and crop protection.

On behalf of all of the authors and other contributors to *the Bulletin*, I thank you for your continued interest in our efforts. We look forward to further interactions in 2005. Please enjoy the coming holiday season to the hilt (I know I will). Be happy, be safe, and take care of yourselves and your families.—*Kevin Steffey*

More About the Corn Rootworm Management Distance Education Workshop

In last month's issue of *the Bulletin* (issue no. 24, November 5, 2004), we wrote about a corn rootworm management workshop that we will deliver via distance education technology. We have lined up the presenters, and plans for the program are taking shape. The presenters will be

- Kevin Steffey and Mike Gray, University of Illinois
- Larry Bledsoe, Purdue University
- Jon Tollefson, Iowa State University
- Ken Ostlie, University of Minnesota
- Lance Meinke and Bob Wright, University of Nebraska

Sue Ratcliffe, facilitator for the North Central IPM Center, has contacted IPM coordinators throughout the north-central region, as well as a few in other

states, alerting them about the program, which will be delivered on February 4 and 11, 2005. State contacts will work with extension personnel in their respective states to make certain that all interested parties have an opportunity to participate. The programs, delivered on two consecutive Fridays, will differ in content, so plan to participate in both. The February 4 workshop will focus on rootworm situation reports and insecticide efficacy trials conducted in 2004. The February 11 workshop will focus on several issues, including but not limited to these:

- Performance of soil- and seed-applied insecticides
- YieldGard Rootworm corn (including insect resistance management)
- Adult corn rootworm suppression programs (including the development of resistance in western corn rootworm populations)
- The variant western corn rootworm
- The extended diapause trait in northern corn rootworms
- Management recommendations for 2005 and beyond.

During the next few weeks, watch for announcements about these workshops. Given the corn rootworm management issues that occurred in 2005 and the ever-changing challenges posed by corn rootworms, you won't want to miss this unique opportunity to interact with experts from throughout the Midwest. If you have any questions about the workshops, don't hesitate to contact one of us.—*Kevin Steffey and Mike Gray*

New Crop Management Conferences Planned by University of Illinois Extension

Producers, agribusiness dealers, crop scouts, and farm managers will want to attend one of the new Crop Management Conferences being delivered this winter by University of Illinois Extension. This new programming effort is designed to provide in-depth, current information about a wide range of crop production topics. The dates and locations for the conferences are February 8–9, Keller Convention Center, Effingham; February 22–23, Hamilton Inn, Jacksonville; and March 1–2, Kishwaukee College Convention Center, Malta.

Each conference will address crop production topics pertinent to the southern, central, or northern Illinois region where it is held. The format will include numerous concurrent sessions to enable attendees to participate in three or four sessions focused on different topics. Subjects to be discussed include soybean rust, insect management in corn and soybeans, wheat management, problem weeds, crop rotation, tillage, crop insurance, and GPS. Each concurrent session will be conducted for 80 minutes, providing time for in-depth discussion, audience interaction, and questions and answers. Some sessions will be repeated. Presenters will be Extension specialists and educators. Continuing education units for Certified Crop Advisers have been applied for.

The registration fee is $75 per person in advance (7 days prior to the conference) or $100 per person at the door. The fee includes lunch, refreshments, and supporting materials for both days. There is no one-day registration fee.

To register for the Effingham conference, contact Robert Bellm at (618) 692-9434. To register for the Jacksonville conference, contact the Morgan-Scott Extension Unit at (217) 243-7424. To register for the Malta conference, contact Dave Feltes at (309) 792-2500). Conference brochures will be available soon at Extension offices.—*Jim Morrison*

2005 Crop Protection Technology Conference—Don't Forget to Register

On behalf of the planning committee for the 57th annual Illinois Crop Protection Technology Conference (University of Illinois, Illini Union, Urbana, January 5 and 6), I extend our invitation to those in the crop production and protection arenas to take part in this annual conference. We are very pleased with the number of registrations received thus far. This conference continues to grow in popularity because of the flexibility of the format and the chance for attendees to interact with crop production experts across the Corn Belt. Participants have the ability to tailor their own programs and select from among 65 hours of Certified Crop Adviser (CCA) continuing education credits (41 credits in IPM, 6 credits in soil and water, 13 credits in crop production, 2 credits in crop management, and 3 credits in nutrient management). By attending the keynote session and selecting the symposia and specialized sessions of most interest, participants can earn up to 10 CCA credits.

To register, visit the following Web site address: https://www.conted.uiuc.edu/fmpro/cptc_reg_2005.html. This site describes four easy ways to register for the conference.

1. Fill out the interactive Web form and click the submit button.
2. Fax a registration form from the Web site to (217) 333-9561 (available 24 hours a day).
3. Mail a registration form and payment to:

   Cashiering Office
   University of Illinois
   162 Henry Administration Building
   506 S. Wright Street
   Urbana, IL 61801

4. Call (217) 333-2880 or toll-free (877) 455-2687 to register by phone. A registration form and check or credit card information must then be received at the above address.

For information about program content, please contact program co-chairs Mike Gray (megray@uiuc. edu, 217-333-6652), Suzanne Bissonnette

(sbissonn@uiuc.edu, 217-333-4901), Aaron Hager (hager@uiuc.edu, 217-333-4424), Dean Malvick (dmalvick@uiuc.edu, 217-265-5166), or Sandy Osterbur (saosterb@uiuc.edu, 217-244-2124).

Early registration is recommended. The preregistration fee of $110 must be received by December 17. After December 17, participants will be assessed a registration fee of $140. We look forward to a great conference!—*Mike Gray and Sandy Osterbur*

INSECTS

Consistency Ratings for Corn Rootworm Control Products

On September 2, Ron Estes, University of Illinois manager of the Insect Management and Product Evaluation Program, reported the root-rating results of our corn rootworm insecticide trials in issue no. 22 of *the Bulletin* (http://www.ipm.uiuc.edu/bulletin/article.php?issueNumber=22&issueYear=2004&articleNumber=2). Root ratings serve as one tool to evaluate product performance.

Another approach that can be used is to calculate a consistency rating for each product. We often receive questions from farmers about consistency of a given insecticide over many growing seasons and locations. Table 1 provides consistency percentages for products tested in our experiments at DeKalb, Monmouth, and Urbana during the 2004 growing season. For each product, 20 roots (4 replicates, 5 roots per replicate) were rated for larval injury on the Iowa State 1-to-6 scale. Root ratings of 1 to 2 signal that very minor larval injury or root scarring occurred. A rating of 3.0 is the commonly accepted economic injury index and indicates that some pruning (light to moderate) has taken place but never the equivalent of one node. Ratings of 4, 5, or 6 indicate that 1, 2, or 3 nodes of roots, respectively, have been destroyed. Typically, when root injury is 4 or greater, plants become more predisposed to lodging, goosenecking, and ultimately may suffer significant yield losses.

Consistency ratings in Table 1 reveal the percentages of plants that were rated from 1 to 3 on the Iowa State 1-to-6-scale. The greater the percentage, the more consistently a given product performed at a satisfactory level. We believe that to assess the overall performance of a rootworm control product, it makes sense to look at the actual root-injury ratings as well as the consistency percentages. We also know that yields are the bottom line. However, yield data are often difficult to interpret because of complicated interactions involving severity of root injury, root regeneration differences among hybrids, soil moisture levels, percentage lodging, and summer temperatures (particularly during anthesis). In determining which root protection products are likely to perform the best under intense rootworm larval pressure, we encourage you to look at both root ratings and consistency percentages. In addition, we encourage our readers to look at data sets on corn rootworm product efficacy maintained at other land-grant institutions.

The consistency percentages in 2004 reveal a theme that we have repeated for several years. It remains clear that the insecticidal seed treatments (Cruiser and Poncho 1250) did not provide the level of consistency that producers seek in a corn rootworm control product. The pyrethroid products Capture 2EC (liquid bifenthrin) and Empower (granular bifenthrin) also did not provide consistent levels of root protection. The YieldGard Rootworm (Golden Harvest H-8588RW) treatment provided 100% consistency in the DeKalb and Monmouth experiments. In Urbana, the YieldGard RW treatment dropped in consistency to 60%. The level of rootworm pressure at all three locations was similar, so the reduction in consistency at the Urbana site was

Table 1. Consistency percentages for corn rootworm control products, University of Illinois, 2004.

			Consistency percentages[1]		
Products	*Rate*[2,3]	*Placement*	*DeKalb*[4]	*Monmouth*[4]	*Urbana*[4]
Aztec 2.1G	6.7	Band	100	70	80
Aztec 4.67G[5]	3.0	Band	75	80	55
Aztec 4.67G[5]	3.0	Furrow	85	70	65
Capture 2EC	0.37	Band	20	60	45
Cruiser	1.25 mg/seed	On seed	0	0	15
Empower[2]	8.0	Band	0	NI[6]	5
Empower[2]	8.0	Furrow	15	NI[6]	5
Force 3G	4.0	Band	90	60	85
Force 3G[5]	3.0	Band	75	90	55
Fortress 2.5G	7.4	Furrow	95	90	80
Fortress 5G[5]	3.7	Furrow	80	85	65
Lorsban 15G	8.0	Band	55	85	90
Lorsban 4E	2.4	Band	80	65	90
Nufos 15G	8.0	Band	70	95	85
Poncho 1250	1.25 mg/seed	On seed	20	20	10
YGRW[7]			100	100	60
Check			10	0	0

[1]Consistency percentages indicate the percentage of roots that were rated as 1, 2, or 3 on the Iowa State 1 to 6 root injury rating system.
[2]Rates of application for band and in-furrow placements are ounces per 1,000 feet of row.
[3]Rates of application for seed treatments are milligrams of active ingredient per seed.
[4]Planting dates were April 28, April 27, and April 19 for DeKalb, Monmouth, and Urbana, respectively.
[5]Applied using modified SmartBox metering units.
[6]NI = product not included in trial.
[7]Hybrid was Golden Harvest H-8588RW (YGRW). All other treatments were applied to Golden Harvest H-8799 (non-transgenic isoline).

somewhat of a surprise. The planting date at Urbana was the earliest, albeit only by 1 week. We will continue to examine the reduced performance of the YieldGard RW treatment at the Urbana site.

If you have any questions concerning these experiments, don't hesitate to give us a call or send us an e-mail message.—*Mike Gray*

PLANT DISEASES

Asian Soybean Rust Confirmation in Louisiana Raises Concern of Potential Impact of This Disease in Illinois

Note: This article was first published on the Bulletin *Web site as an update to issue no. 24 (November 5, 2004). It has been modified to reflect the additional states in which soybean rust has been observed.*

As widely reported on November 10, 2004, Asian soybean rust was confirmed for the first time in the continental United States. Soybean rust is a fungal disease of soybeans that infects leaves and can cause defoliation and significant yield losses. The soybean rust reported in Louisiana was Asian soybean rust, the aggressive species of rust (*Phakopspora pachyrhizi*), not the relatively mild American soybean rust (*P. meibomiae*). Since the discovery in Louisiana, the Asian form of soybean rust has been confirmed as far east as Florida and South Carolina and as far west and north as Arkansas and southeastern Missouri.

As has been said many times, the question has been not whether soybean rust will arrive in the continental United States, but when. Now we know when for the continental U.S., but we still do not know when soybean rust will arrive in Illinois—it may be in 2005 or not for another few years. Nor do we know how much damage it can or will cause in Illinois. The yield losses in Illinois may be significant, but they also may be much less significant than some have suggested. There are many questions that will not be answered before this disease arrives in Illinois. Regardless, the risk of soybean rust's occurring in Illinois in 2005 has now increased substantially with the discovery of the disease in Louisiana.

Here are a few key things to note:

- The Illinois Department of Agriculture, along with a team of representatives from several federal and state agencies, and University of Illinois Extension have developed a plan of action (Illinois Soybean Rust Program) to diagnose and manage Asian soybean rust if it arrives in Illinois. This plan can be found on the Web at http://www.agr.state.il.us/.
- Soybean rust is not expected to survive over the winter in Illinois or adjoining states. Spores of the pathogen must be blown up from infected plants in the far south to initiate infections in the Illinois soybean crop. Some models suggest that the overwintering sites of soybean rust may be restricted to the gulf coasts of Florida and southern Texas, or in Mexico.
- The climate over much of Illinois will not always be favorable for widespread and severe soybean rust epidemics.
- Management of soybean rust will depend in the next few years on judicious use of fungicides. Appropriate fungicides applied properly at the correct time have been shown to control rust in other countries. Applications at the earliest time possible after rust is detected will be most effective. At least 6 to 10 different fungicides should be available for soybean rust management if they are needed in Illinois for the 2005 crop.
- Highly resistant soybean varieties will probably not be available for a number of years; however, there may be varieties available sooner that have tolerance or partial resistance to soybean rust.
- Much more information on soybean rust will be presented at conferences and workshops organized by University of Illinois Extension this winter. One to keep in mind is the Illinois Crop Protection Technology Conference, where sessions will cover soybean rust in depth (http://cptc.ipm.uiuc.edu/). Soybean rust will also be covered at the Southern Illinois Crop Management Conference (Effingham, February 8–9), the Central Illinois Crop Management Conference (Jacksonville, February 22–23), and the Northern Illinois Crop Management Conference (Malta, March 1–2). Contact your local University of Illinois Extension office to learn more about educational programs that will cover soybean rust in your area.

What are the risks of soybean rust's arriving in Illinois in 2005 and causing considerable damage in the state? There is no way we can know for sure because there are too many environmental, biological, and other factors involved to make a prediction with any degree of certainty. A report from the USDA-Economic Research Service, however, provides a useful outlook on the risks of soybean rust arriving in the upper Midwest and how much damage it may cause. *Economic and Policy Implications of Wind-Borne Entry of Asian Soybean Rust into the United States* (http://www.ers.usda.gov/publications/OCS/APR04/OCS04D02/) examines how the economic impacts of soybean rust establishment will depend on the timing, location, spread, and severity of rust infestation and on how soybean and other crop producers, livestock producers, and consumers of agricultural commodities respond to this new pathogen. The risks appear to differ in different parts of Illinois and will not be the same every year.

Dr. X. B. Yang from Iowa State University and others suggest that the incidence and severity of soybean rust in the spring in the southern United States may be an indicator of whether the disease will become a problem in Illinois or Iowa later in the season. Two

factors to consider are (1) that, to our knowledge, there have been no widespread and severe plant disease epidemics in their first year of detection after introduction into the United States and (2) that it's likely that before an epidemic will occur in Illinois it will take time for the rust pathogen to increase its population in the South to a sufficient amount in order to be spread north.

The following Web sites offer more information on soybean rust:

USDA: www.aphis.usda. gov/lpa/issues/sbr/sbr.html

Plant Health Initiative: www.planthealth.info/rust/rust.htm

Soybean Rust: Is the U.S. Soybean Crop at Risk? www.apsnet.org/online/feature/rust/

American Soybean Association: www.soygrowers.com/rust/default.htm

University of Illinois Department of Crop Sciences: www.cropsci.uiuc.edu

—Dean Malvick

WEEDS

Effects of Plant Growth Regulator Herbicides on Soybeans

A new fact sheet that examines the effects of plant growth regulator (PGR) herbicides on soybeans has been developed by Dr. Dean Riechers and his research group at the University of Illinois. Previous research on soybean response to PGR herbicides examined the effects of exposure to only the PGR herbicide. However, if the soybeans are exposed to a PGR herbicide via residues dislodged from application equipment, they will also be exposed to the soybean herbicide being applied for weed control. It was previously unknown whether the presence of other herbicides would intensify PGR herbicide injury on soybean. This fact sheet answers this question and addresses the effects. It can be found at http://weeds.cropsci.uiuc.edu/extension/factsheets/PGR.pdf.*—Dawn Nordby and Aaron Hager*

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