



PEST MANAGEMENT & CROP DEVELOPMENT

BULLETIN

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Executive editor: Kevin Steffey,
Extension Entomologist

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For subscription information, phone
217.244.5166, or e-mail
acesnews@uiuc.edu

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2005 Crop Protection Technology Conference— Speakers Announced

Preparations continue for the 57th annual Illinois Crop Protection Technology Conference, to be held at the University of Illinois Illini Union, Urbana, January 5 and 6. Participants will be able 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 those symposia and specialized sessions of most interest, participants can earn up to 10 CCA credits at the conference. Provided here is an outline of the 2005 program. Each symposium and specialized session will be offered twice.

Keynote Session—Global Issues: Local Impact

Predicting Climatological Change in the Great Lakes Region: The Reality of the Issue

Climatological Changes: Implications for Agriculture

Elevated Ozone and Carbon Dioxide: Implications for Agriculture

Influence of Elevated Ozone and Carbon Dioxide on Insect Densities

Symposium A—Asian Soybean Rust: Outlook for 2005

Current Status and Breeding for Resistance

Models and Dispersal for Asian Soybean Rust

Management of Asian Soybean Rust

Symposium B—Western Corn Rootworms: A Season to Forget or Remember?

Movement of Variant Western Corn Rootworm Adults Among and Between Fields

Insecticidal Seed Treatments and Soil Insecticides for Corn Rootworm Control

Transgenic YieldGard Rootworm Hybrid Stumbles in Urbana Experiment: Why?

Update on the Range Expansion of the Variant Western Corn Rootworm in Indiana and Illinois

Symposium C—Disease Management Through Foliar Fungicide Application

Management of Soybean Foliar Diseases with Fungicides

Do Foliar Fungicides Have a Place in Corn Production?

Management of Wheat Diseases with Fungicides

Symposium D—Transgenic Issues

Delivering on the Biotech Promise Today and in the Not-So-Distant Future

The Future of Insect Resistance Management: Balancing Ecology, Evolution, and Economics to Determine Best Management Practices

Glyphosate-Resistant Weeds in Illinois: Way Down the Road or Right Around the Corner?

Symposium E—Emerging Crop Production and Protection Issues

What Happened to IPM in the Management of Insects and Diseases in Soybeans?

How Early Is Too Early to Plant?

Western Bean Cutworm: Lessons Learned from Iowa, Expectations for Illinois

Robotics in Agriculture

Symposium F—Regulatory Issues and Resource Management

What Happened to the Pesticides in the Groundwater Management Plan?

Developing Nutrient Standards in Illinois

Soil and Water Quality for Conservation Security Program

Economic Benefits of Conservation Drainage

Specialized Sessions

1. Aquatic Weed Management
2. On-Farm Research: If I Like the Results, It Must Be Real Science
3. Alfalfa Production Management Steps to Greater Profits
4. The Quality of Soil Testing: Expectations, Perceptions, and Reality
5. The Importance of Spray Droplet Size for Ground and Aerial Applications
6. Cyberfarm 2005
7. Asian Soybean Rust: Sampling Protocol, Thresholds, and Scouting
8. The Influence of Soil Physical and Chemical Properties on Herbicide Availability and Degradation
9. Soybean Aphid Management Update: What to Select from a Variety of Pest Management Tools
10. Injury Across the Landscape: When Herbicide Applications Go Awry
11. Troubleshooting Pest Management Challenges in Field Crops

12. Fungicide Basics for Field Crops

13. Secondary Insect Management

14. Wheat Management for the 21st Century: Updating the Old, Introducing the New

15. Corn Nematodes: The Hidden Enemies

For information about the content of the program, please contact one of the 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), and Sandy Osterbur (saosterb@uiuc.edu, 217-244-2124).

To register for the 2005 Crop Protection Technology Conference, please visit this Web address: https://www.conted.uiuc.edu/fmpro/cptc_reg_2005.html. This site describes four easy ways to register for the conference. You may also register for the conference by calling (217) 333-2880 or using the toll-free number (877)455-2687.

Early registration is recommended. The preregistration fee is \$110 and 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

Corn Rootworm Management Distance Education Workshop

Over the past few years, Extension entomologists at the University of Illinois have embarked on a series of distance education programs focusing on various topics. These programs were instigated by David Feltes, Extension educator in IPM in the Quad Cities, who identified the advantages of delivering topical programs about insects and their management to multiple audiences. A soybean aphid

workshop delivered via the Latitude Bridge on February 5, 2004, was the most recent program in the series. With Dave as the logistics coordinator, entomologists from Illinois, Iowa, Minnesota, and Wisconsin delivered the program to about 800 people at 61 sites in the same four states. Reactions to the program were quite positive, encouraging us to continue to explore distance education programming about contemporary issues in insect management.

Working with Dave Feltes once again, we are planning to present a corn rootworm management workshop to multiple sites throughout the north-central states on February 4 and 11. So mark your calendars now. The two programs, delivered on two consecutive Fridays, will differ in content, so plan to participate in both. Entomologists who have agreed to develop and deliver the program are Mike Gray and Kevin Steffey (University of Illinois), Larry Bledsoe (Purdue University), Jon Tollefson (Iowa State University), Ken Ostlie (University of Minnesota), and Lance Meinke and Bob Wright (University of Nebraska). Although the program has not been fleshed out, the topics that will be discussed will include the following:

- Corn rootworm situation
- Results from efficacy trials for corn rootworm control products
- Issues regarding performance of soil-applied insecticides and insecticidal seed treatments
- Issues regarding YieldGard Rootworm corn (e.g., incidents of greater-than-expected rootworm larval damage in 2004, lodging issues, insect resistance management)
- Current status of adult corn rootworm suppression programs
- Current distribution and potential spread of variant western corn rootworm
- Current situation with extended diapause and northern corn rootworms

- Overview of management of corn rootworms for the Corn Belt

We are contacting people in other states to establish sites where the program will be delivered. Within a few weeks, you should see announcements about the program and locations in the participating states. This article is intended as a heads-up so you can mark your calendar. Stay tuned for substantive details.—*Kevin Steffey and Mike Gray*

Results from the Annual Fall Survey for Second-Generation European Corn Borers

With the help of University of Illinois Extension educators (IPM and Crop Systems), graduate students, and faculty and staff in the Department of Crop Sciences, we have completed the annual survey of second-generation European corn borers. We thank these individuals for helping us to keep our record of European corn borer populations intact from 1943 through 2004 (with the exception of 2 years during which the survey was not conducted). Without their gracious consent to help, such a time-consuming and labor-intensive task could not be completed.

In a break from tradition, we are not printing a table of averages of numbers of European corn borer larvae per 100 plants and percentage infestation in counties and crop reporting districts. Rather, we are providing a PowerPoint slide set that you can access from our IPM Web site at http://www.ipm.uiuc.edu/fieldcrops/insects/european_corn_borer. When you get to this page, look for Fall survey—2004 under “Related Links,” and click. If you want to read about how the annual fall survey is conducted, click on “Fall survey,” which is a fact sheet explaining the history and annual conduct of the survey.

The PowerPoint slides that you will access include the following for each crop reporting district in Illinois:

- Average number of European corn borer (ECB) larvae per 100 plants for the counties surveyed within each crop reporting district
- Average percentage infestation of ECB for the counties surveyed within each crop reporting district
- Percentage infestation of ECB in 10 fields within one of the counties surveyed within the crop reporting district (prepared as an example of variability of infestation within a county)

On most of the slides, the averages for the crop reporting district (orange) and the state (red) are included. The slide set concludes with four slides that depict (1) the average number of ECB per 100 plants for all crop reporting districts and the state, (2) the average percentage infestation of ECB for all crop reporting districts and the state, (3) a map of Illinois depicting the average number of ECB per 100 plants in each of the counties surveyed, and (4) a map of Illinois depicting the average percentage infestation of ECB in each of the counties surveyed.

We invite you to use the information we have provided in this PowerPoint slide set. We ask only that you acknowledge the University of Illinois Department of Crop Sciences if you use the information in any of your educational meetings.

Overall, European corn borers in Illinois in 2004 were most noticeable through their relative absence. The average number of second-generation ECB per 100 plants in Illinois in 2004 was only 15.6, and the average percentage infestation was 17.1%. Many of the surveyors, upon turning in their information, inquired if anyone else was finding anything. For the most part, densities of ECB in 2004 were very low, as low as we have observed in many years. Remember, this does not necessarily mean that we won't experience economic infestations of ECB in 2005. Many factors affect survival (and mortality) of ECB, not the least of which are time of planting

and weather conditions during moth flights. However, at this point, we know that the population of European corn borers that will overwinter is very low throughout most of the state.

If you have any questions about our results or use of the slides we have provided, please don't hesitate to contact us.—*Kevin Steffey and Mike Gray*

Review of 2004 Soybean Insect Management Trials

The management of insects in soybeans has not always been as prominent as it has been over the past few years. With the introduction of the soybean aphid and increasing presence of bean leaf beetles in Illinois, soybean insect management is becoming ever more important. The increased awareness of insects in soybeans has led to a higher incidence of insecticide use and a concern of unnecessary pesticide applications (see “Insects Infesting Soybeans? Or Not?” in issue no. 18 of *the Bulletin*, July 23, 2004). Also, the likelihood of the registration of insecticidal seed treatments on soybeans in Illinois may lead to their widespread use. Due in part to these factors, we investigated the benefits of different pesticide treatment combinations, insect levels, and their effect on yield in three soybean trials this summer. These trials were conducted as part of our Insect Management Program and were funded by the Illinois Soybean Program Operating Board and Syngenta Crop Protection.

Two soybean trials were established this year, targeting the management of the bean leaf beetle. The objective of this trial was to determine the most timely, practical, and economic approach for managing bean leaf beetles, with the potential for reducing the incidence of soybean diseases, such as bean pod mottle virus.

The two bean leaf beetle trials were established in Whiteside and Stephenson counties on May 4 and 5, respectively. The trials were established

in areas where the presence of bean leaf beetles early in the growing season, and possibly throughout the growing season, was optimized (i.e., the plots were planted in fields bordering wooded areas and alfalfa fields). Densities of bean leaf beetles in the areas where the trials were established and throughout Illinois were quite low throughout 2004. No economically threatening densities of bean leaf beetles were observed in any of the treatment plots at any time. However, the trials were sampled throughout the growing season, numbers of all insects were recorded, and plots were harvested to determine potential yield differences.

Treatments in the two bean leaf beetle trials are as follows:

1. Cruiser seed treatment
2. Cruiser seed treatment + a foliar application of Warrior to control first-generation beetles (July)
3. Gaucho seed treatment
4. Gaucho seed treatment + a foliar application of Warrior to control first-generation beetles (July)
5. A foliar application of Lorsban 4E to control overwintering beetles (May) + a foliar application of Lorsban 4E to control first-generation beetles (July)
6. A foliar application of Mustang Max to control overwintering beetles (May) + a foliar application of Mustang Max to control first-generation beetles (July)
7. A foliar application of Warrior to control overwintering beetles (May) + a foliar application of Warrior to control first-generation beetles (July)
8. A foliar application of Warrior to control first-generation beetles (July)
9. Untreated check

A third trial was established in Kendall County targeting control insect pests in soybeans. The trial was planted late (in June) purposely to enhance the likelihood of development

of economically threatening densities of soybean aphids. The treatments in the trial include various combinations of fungicidal seed treatments, insecticidal seed treatments, foliar-applied fungicides, and foliar-applied insecticides. The trial was established in an area in which infestations of soybean aphids had been relatively common, and occasionally significant, since 2000. As with our other two soybean trials, no economically threatening densities of soybean aphids, or any other insect pest, developed at this location. However, all plots were sampled for insects, and the plots were harvested to determine potential yield differences.

Data from all three of these trials are currently being analyzed. The results will be presented in an upcoming issue of the *Bulletin*. We hope to give more insight into the possible yield increase with the use of systemic nicotinoid seed treatments or application of insecticide + fungicide, even in the absence of economically threatening insect levels.—*Kelly Cook, Ron Estes, and Kevin Steffey*

PLANT DISEASES

Illinois Soybean and Corn Diseases in Review—Reports and Observations from 2004

Average Illinois corn and soybean yields were high in the 2004 season. Generally good weather across the state made for excellent growing and harvesting conditions in most areas. In spite of these positive reports, diseases affected stand establishment and crop yields. The high average yields may be hiding two important things: low yield in localized areas due to significant disease pressure and whether yields in many fields may have been even higher if diseases had not been present. This article will provide a brief overview of several diseases of soybean and corn that were common in Illinois in 2004 based on reports and observations. This information may be useful in seed selection and field management for the 2005 season.

Soybeans

Seedling diseases, root and stem diseases, and foliar diseases all took their toll. Wet spring weather in many areas favored problems with seedling diseases, and in some areas fields were replanted. Several different pathogens cause soybean seedling diseases.

Among infected soybean samples that we received from across the state for diagnosis in May and June, we found the most common pathogens (in order of most to least common) to be *Fusarium*, *Phytophthora*, *Pythium*, and *Rhizoctonia*.

Root and stem diseases also occurred widely in Illinois. These included white mold, *Phytophthora* rot, stem canker, sudden death syndrome (SDS), and brown stem rot (BSR). Each of these diseases caused considerable damage in some soybean fields. White mold was of particular concern this year in the northern half of Illinois, especially in the northwest. Cool and wet conditions in July promoted development of more severe levels and incidence of white mold than had been seen for a number of years. SDS was widespread in Illinois based on a survey specifically for this disease, and although BSR was seen in the northern third of the state as usual, it was seen at levels above normal in central Illinois. Stem canker is another disease that appears late in the season that seems to be increasing in many areas in Illinois.

In the past growing season, weather conditions were also quite favorable for foliar diseases. Foliar diseases were reported in Illinois more frequently than normal in 2004. These included *Septoria* brown spot, downy mildew, bacterial blight, *Cercospora* leaf blight, frogeye leaf spot, and anthracnose. Many questions came up regarding the potential for yield losses from these diseases and how they should be managed. In many cases, we don't have as much information as we would like, but research is under way to find some of the answers. Information on foliar diseases of soybean and their management will be presented in

January at the Illinois Crop Protection Technology Conference in Urbana and at the Illinois Corn and Soybean Classic meetings at six locations in Illinois.

Corn

In addition to reports of crazy top in flooded areas and stalk rots, four major disease problems were of considerable concern in some parts of the state: gray leaf spot, rust, northern corn leaf blight, and *Diplodia* ear rot. Several factors came together, including stage of crop development and favorable weather conditions, to create much concern over gray leaf spot. The most significant levels of this disease were reported in central Illinois, with the west-central area receiving the most attention. Concern was raised to the point that fungicides were applied on some grain production fields (vs. the more common applications on seed production fields); however, fungicide timing was a problem in some areas. Rust was also a problem in some areas due in part to the below-normal temperatures in July, with apparently the greatest incidence and severity in the north-central part of Illinois.

Northern corn leaf blight (NCLB) may be an increasing problem. A few fields in Illinois were reported with significant levels of this disease in 2003, but many more fields seemed to be affected in 2004. The reasons for the increased incidence of NCLB are not entirely clear at this time, but the weather, hybrid susceptibility, and

presence and virulence of the pathogen all played some part. One thing is clear—there are differences in susceptibility/resistance among hybrids. Because NCLB seems to be increasing and there should be plenty of the residue-borne inoculum next season in many fields, the disease should be considered when hybrids are selected. Hybrids with resistance to NCLB should be selected if possible to help avoid problems with the disease in 2005.

In summary, crop diseases are opportunistic and can develop to levels not seen for years and in areas where they have not occurred before, as we saw this year. Diseases continue to take a toll on corn and soybean yields and quality in Illinois, and vigilance in management can do much to reduce the effects of disease.—*Dean Malvick*

REGIONAL REPORTS

Northern Illinois

According to the Illinois Agricultural Statistics Service, as of October 31, 68% of the corn crop and 77% of the soybeans have been harvested in the northwest and northeast Illinois crop-reporting districts. However, there are some areas within the northern region that do not approach this level of harvest completion. Reports from several individuals suggest only 25% of the corn crop has been harvested in the Freeport to Rockford area as of

November 1. Frequent rainfall during the past few weeks has periodically slowed corn harvest. Corn lodging in some remaining fields due to stalk rot and rootworm larvae feeding has been an issue. Windy conditions on October 30 certainly highlighted fields that have high infestation levels of stalk rot.

Soybean harvest has been minimal over the past 3 weeks due to rainfall and humidity. The widespread rainfall received throughout the region on November 1 will again delay soybean harvest. However, soybean yields have generally been the highest producers have experienced for a number of years.

Contributing Authors

Kelly Cook (kcook8@uiuc.edu),
Extension Entomology, (217)333-6651

Ron Estes (restes@uiuc.edu),
Research Specialist in Agriculture,
(217)333-6652

Mike Gray (megray@uiuc.edu),
Extension Entomology, (217)333-6652

Dean Malvick (dmalvick@uiuc.edu),
Extension Plant Pathology, (217)265-5166

Kevin Steffey (ksteffey@uiuc.edu),
Extension Entomology, (217)333-6652

U of I Extension Newsletter Service
University of Illinois
at Urbana-Champaign
528 Bevier Hall, MC-184
905 S. Goodwin Avenue
Urbana, IL 61801

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