

# PEST MANAGEMENT & CROP DEVELOPMENT

## BULLETIN

FOR IMMEDIATE RELEASE  
No. 5 / April 26, 2002

Executive editor: Kevin Steffey,  
Extension Entomologist

Available on the Web at  
<http://www.ag.uiuc.edu/cespubs/pest/>  
For subscription information, phone  
217.244.5166, or e-mail  
[acesnews@uiuc.edu](mailto:acesnews@uiuc.edu)

Copyright © 2002, Board of Trustees,  
University of Illinois

### In This Issue

- ❑ University of Illinois Plant Clinic Service, 49
- ❑ Pesticide Registrations: "Section What?" 49
- ❑ "Intense" Captures of Black Cutworm Moths Continue, 51
- ❑ More Information About Mustang Insecticide, 52
- ❑ Captures of Armyworms and Corn Earworms, Too, 52
- ❑ White Grubs Causing Problems Again in 2002, 52
- ❑ And More!

### University of Illinois Plant Clinic Service

The plant clinic serves as a clearinghouse for plant problems sent to the University of Illinois, from May through mid-September. Diagnoses are provided on field crops, trees, shrubs, turf, fruit, vegetables, or any other type of plant you can imagine. Specialists are called to help with diagnoses as needed and in an average year about 20 different specialists may have input on plant samples. Services include plant and insect identification; diagnosis of disease, insect, weed, and chemical injury symptoms (chemical residue testing not available); nematode assays; and help with nutrient-related problems, as well as management recommendations involving these diagnoses. The clinic cannot assess nutrient levels in tissue or soil samples.

The University of Illinois Plant Clinic will be open from May 1 through September 15 this year. The clinic budget is supported in part by user fees. These fees have not changed since 1999 and are listed here. A check made payable to the University of Illinois must accompany each sample.

General diagnosis (including cultures)	\$12.50
Specialty tests (SCN, PWN, ELISA)*	\$18.75
Other nematodes (usually corn)	\$40.00

\*SCN indicates the test for soybean cyst nematode. PWN indicates pine-wood nematode analysis. ELISA is a technique used to test for various viral pathogens.

A specimen data form or equivalent information should always accompany a plant sample. As the saying goes, garbage in, garbage out. The ability to provide a thorough diagnosis is directly related to the quality of the sample and the type of information provided. Each of the University of Illinois Extension offices should have a copy of the specimen data form. You can also find the form in the *Field Crop Scouting Manual*, or you can access the form on the clinic website at <http://www.cropsci.uiuc.edu/research/clinic/clinic.html>. There you will find information on clinic location, instructions on how to send a sample, a fee schedule, and more. If you would like to contact us by U.S. mail, the mailing address is: Plant Clinic, 1401 W. St. Mary's Rd., Urbana, IL 61802. The telephone number is (217)333-0519. Business hours are 8:00 a.m. to noon and 1:00 to 4:30 p.m., weekdays only. Arrangements can be made to drop off samples at other times.—*Nancy Pataky*

### Pesticide Registrations: "Section What?"

In the April 5 issue of the *Bulletin*, Kevin Steffey discussed Section 2(ee) supplemental pesticide labeling. As you'll recall, companies issue Section 2(ee) recommendations for products to control pests in crops for which the products are already registered. These recommendations allow companies to offer quick "updates" before the federal (Section 3) label is amended. This article explains two other, often confusing, types of supplemental labels that also merit your attention.

#### Section 24(c) Registration

Amended FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) permits a state to provide registration for additional uses of federally registered pesticides for distribution and use within that state to meet "special local needs." Such registrations are referred to as state labels, special local

needs, or 24(c) registrations and are considered as federal registrations that authorize distribution and use only within the granting state. Such registrations are subject to all provisions of FIFRA that apply to currently registered products, including cancellations, renewals, and suspensions.

A special local need is defined as a situation in which an appropriate, federally registered product is not sufficiently available for an existing or imminent pest problem within a state, as determined by the state lead agency (for example, Illinois Department of Agriculture, IDoA), based on satisfactory supporting information. States are authorized to register a new product for any use, or an additional use of a federally registered pesticide product, if the following conditions exist:

- A special local need exists for its use within the state.
- The use is covered by necessary tolerances, exemptions, or other clearances under the Federal Food, Drug, and Cosmetic Act if the use is for food or feed use.
- Registration for the same use has not previously been denied, disapproved, suspended, or canceled by the administrator due to health or environmental concerns about an ingredient contained in the pesticide product—unless such denial, disapproval, suspension, or cancellation has been suspended by subsequent action of the USEPA.
- Registration would be in accord with the purposes of FIFRA.
- States may not register a new product that contains any active or inert ingredient not found in a federally registered product.

The IDoA's Bureau of Environmental Programs is responsible for registering pesticides for special local needs in Illinois. Specific items or documents are requested to be included in each special local needs 24(c) packet sent to Illinois for consideration. Documentation requirements vary, based on the proposed changes to the label, and

may include data on pesticide residue, metabolism, and environmental fate. If disapproved by the USEPA administrator, a registration issued by a state for special local needs shall not be effective for more than 90 days. If the registration is inconsistent with the Federal Food, Drug, and Cosmetic Act or constitutes an imminent hazard, the administrator may immediately disapprove the registration. Section 24(c) pesticide registrations are governed by Title 40 of the Code of Federal Regulations, Part 162 (<http://www.pesticide.net/cfr/index.htm>). For detailed information about this type of registration, see <http://www.epa.gov/opprd001/24c>.

### Section 18 Registration

Amended FIFRA makes it illegal to use a pesticide for any reason unless it has been registered for that use or purpose. However, there are situations for which a registered pesticide is not available for a certain use. An outbreak of a previously minor pest may occur on a crop for which no registered pesticide is available for use on that crop. If the crop is a food crop and no tolerance exists on that crop, a state 24(c) label cannot be obtained. Amended FIFRA provides for emergency use of pesticides in these situations or others similar to it. A state may obtain permission to use an unregistered pesticide in an emergency when a registered pesticide is not available to control the pest problem. FIFRA provides for three types of exemptions:

1. *Specific exemption.* When a pest outbreak has occurred or is about to occur and a registered pesticide for that use or purpose is not available, a request for an exemption to use a certain pesticide to control the outbreak may be made by the state lead agency (IDoA). Information including the nature, scope, and frequency of the problem; the pest involved; which pesticide or pesticides will be used and in what amounts; the economic benefits anticipated; and an analysis of possible adverse effects must be supplied. The USEPA grants the exemp-

tions. Reports must be filed when the treatment is over. A specific exemption is good only for a specified amount of time and for a designated area.

2. *Quarantine or public health exemption.* This exemption may be granted to prevent the introduction or spread of a foreign pest into or throughout the United States, or to prevent a public health problem. No pesticide that has been suspended by the USEPA may be used. The procedure for requesting this exemption is the same as for the specific exemption.

3. *Crisis exemption.* A crisis exemption may be used if a pesticide registered to control or eradicate the pest is not readily available and there is not time to request and get approval for a specific exemption. However, the state must notify the USEPA at least 36 hours in advance of utilization of the crisis provisions to allow a cursory review of the proposed use. If concerns are noted, the USEPA confers with the state and may not allow a crisis to be declared. The duration of a crisis exemption is short (maximum of 15 days unless application for a specific exemption has been submitted), and no pesticide that has been suspended or canceled may be used. Within 3 months following the last date of treatment, the state must file information similar to that required for the specific exemption.

Section 18 pesticide registrations are governed by Title 40 of the Code of Federal Regulations, Part 166 (<http://www.pesticide.net/cfr/index.htm>). For detailed information about this type of registration, see <http://www.epa.gov/opprd001/section18>.

*Please note:* If you wish to apply a pesticide for a use covered by a Section 24(c) or Section 18 supplemental label, you must have a copy of that label in your possession at the time of use. You can obtain these labels from your pesticide dealer or directly from the pesticide manufacturer. Remember that these labels specifically state where, how, and for how long the product may be used.—Bruce Paulsrud

Source: *Illinois Pesticide Applicator Training Manual 39-13: Demonstration and Research*, University of Illinois Extension, 2001.

## INSECTS

### “Intense” Captures of Black Cutworm Moths Continue

As wet weather continues to delay planting in many areas of the state, people are becoming more concerned about the potential for black cutworm problems, especially in southern Illinois. “Intense” captures of black cutworm moths (nine or more moths captured in a 1- to 2-day period) began in southern Illinois in late March, and the storm fronts continue to bring migrating moths into Illinois and other midwestern states. We have received many reports of intense captures of black cutworms within the past week. The cool weather fronts that followed on the heels of our unusually warm weather during the week of April 15 were replete with migrating black cutworms. Intense captures were especially prevalent during April 19–21. Entomologists in Indiana and Missouri have also reported captures of high numbers of black cutworm moths.

Check out “The Hines Report,” information about moth captures provided weekly by Ron Hines, senior research specialist at the Dixon Springs Agricultural Center in Pope County. You can find his report on the Web at <http://ipm.uiuc.edu/publications/hines-report>. At the site you will find a description of Ron’s moth trap line, as well as photographs of the types of traps he uses. He has provided information regarding captures of armyworms, black cutworms, and corn earworms for the week ending April 23, 2002, from the Massac County, Pope County (bottomland), Pope County (upland), and Pulaski County sites. He will update the counts weekly. You’ll find in his most recent report that he had captured 24, 9, 20, and 33 black cutworm males at the four sites, respectively.

Many other people from southern and central counties also have reported intense captures of black cutworm moths:

- Randy Klenke, with Hamel Seeds in Madison County, captured 21 moths on April 21 and 22.
- Jerry Harbour and Tom Harms, with Lincoln Land FS, captured 9 to 25 moths in 1- to 2-day periods (April 8 and 9, April 19 and 20) in a series of traps in Menard and Sangamon counties.
- Students at Lincoln Land Community College, working with Matt Montgomery, Sangamon/Menard Extension Unit educator in crop systems, captured 18 moths on April 20 and 21.
- Brien Fell, with Mowers Soil Testing Plus, captured 11 moths on April 19 in Knox County.

Although they have not reported intense captures yet, Kevin Foreman, with Crop Production Services in Galesburg, has captured black cutworm moths in traps in Fulton, Knox, Mercer, and Warren counties; and Jim Morrison, Extension educator in crop systems in Rockford, has captured several black cutworm moths in traps in Stephenson County.

Many people have reported that winter annual weeds are prevalent this year, so the stage is set for black cutworm

problems. Female moths are attracted to vegetation, such as winter annual weeds for oviposition. When the field is ready to be planted and the weeds are killed with herbicides, the cutworm larvae that have survived will begin feeding on emerging corn seedlings.

From previous intense captures of black cutworms, we can predict the first dates of cutting activity (fourth instars). Table 1 shows the dates of intense captures, from which Bob Scott, Illinois State Water Survey, began accumulating degree-days (base 50°F) and the projected dates of cutting by black cutworm larvae in certain areas, based on the closest Illinois Climate Network station. Obviously, projecting the dates of cutting by black cutworms is not an exact science, but these projections offer some guidelines for scheduling scouting activities.

We’ve covered most of the bases regarding scouting and making control decisions for black cutworms (*Bulletin* issue no. 4, April 19, 2002). Insecticides suggested as rescue treatment for control of black cutworms were provided in issue no. 3 (April 12, 2002) of the *Bulletin*. At this time, all we can do is urge everyone to stay alert for the earliest signs of black cutworm problems. Corn that has emerged in some areas of the state should be examined now and regularly, at least until corn has reached the 4-leaf stage.

**Table 1. Projected dates of cutting by black cutworm larvae (fourth instars) based upon accumulation of 300 degree-days (base 50°F) after dates of “intense” captures<sup>a</sup> of black cutworm moths.**  
(Projections provided by Bob Scott, Illinois State Water Survey.)

<i>Date of “intense” capture<sup>a</sup></i>	<i>Location of “intense” capture<sup>a</sup></i>	<i>Projected date of cutting</i>
March 31	Massac County	April 24
April 8	Sangamon County	May 5
April 9	Greene County	May 3
April 14	Massac, Pope, Pulaski counties	May 2
April 19	Knox County	May 19
April 21	Madison County	May 15

<sup>a</sup> Intense capture of black cutworm moths defined as nine or more moths captured over a 1- to 2-day period.

However, corn that has yet to be planted probably will be more at risk than corn that has been planted already. So, watch carefully and frequently. Don't get caught by surprise.—*Kevin Steffey*

---

### More Information About Mustang Insecticide

Similar to my oversight regarding preplant and preemergence applications of Warrior for cutworm control (reported in last week's *Bulletin*, issue no. 4, April 19, 2002), I failed to mention another product that can be applied in this manner for cutworm control. Mustang, the newly registered pyrethroid manufactured by FMC Corporation, also can be applied before, during, or after planting for cutworm control. The label states, "For soil-incorporated applications, use higher rates for improved control." The range of rates of application for corn is 1.4 to 3 ounces per acre.

The reason for these oversights is that the information regarding cutworm control is listed under "General Directions for Use" on the Warrior label and under "General Instructions" on the Mustang label. This information would be easier to find if it were included with specific information associated with specific crops. Thus, I encourage Syngenta and FMC representatives to consider placing the information in a more logical place on their respective labels.—*Kevin Steffey*

---

### Captures of Armyworms and Corn Earworms, Too

"The Hines Report" (<http://ipm.uiuc.edu/publications/hines-report>) also contains information about captures of armyworm and corn earworm moths in traps "baited" with their respective pheromones. The numbers of these species captured in traps are not as impressive as the numbers of black cutworms captured thus far, but we will continue to monitor their presence. As Ron Hines notes in his report, the numbers of armyworms

captured this year are less than the numbers captured in 2001. This doesn't mean that armyworm problems won't develop in wheat or grass hay or pasture, but at least we are watching the little buggers more closely this year.

A report from the University of Missouri Delta Research Center revealed that the numbers of armyworm moths captured during 6 to 8 days before April 16 were worthy of note—69 moths captured in Dunklin County, 109 moths captured in Mississippi County. Both of these counties are in the bootheel of Missouri, not too far from the southern tip of Illinois. We'll try to keep our eyes on moth trap captures south of us, too, just to remain aware of any early warning signs.—*Kevin Steffey*

---

### White Grubs Causing Problems Again in 2002

It's early in the growing season, but many people already have the sense that white grubs will be problematic again this year. Kevin Black, with Growmark in Bloomington, reported that many FS crop specialists have observed heavy infestations of white grubs heavy in many fields in southern Illinois. Kevin found Japanese beetle grubs in a couple of fields in Randolph County. In addition, several farmers from western and central counties have reported finding white grubs during their planting operations. The species of these grubs have not been identified, but their presence is worthy of note. Remember, as I indicated in issue no. 2 (April 5, 2002) of the *Bulletin*, both Japanese beetle grubs and *Phyllophaga* grubs (so-called true white grubs) are capable of causing significant economic damage. *Cyclocephala* grubs (masked chafer grubs) infrequently cause economic damage to corn. Once again I remind you to accurately identify the species of grubs you find. The information provided in issue no. 2 of the *Bulletin* will help you determine what type of grubs you have found.

While reading an article written by Marlin Rice (Extension entomologist at Iowa State University), for *Integrated Crop Management* (issue no. 5, April 15, 2002, <http://www.ipm.iastate.edu/ipm/icm/2002/4-15-2002/whitegrubs.html>), I realized there was another type of grub I had not mentioned. *Aphodius* grubs, or manure grubs, may be found in fields that have received heavy applications of manure. *Aphodius* grubs are quite small (refer to Marlin's photograph), and they are almost U-shaped rather than C-shaped. The head is red-brown, rather than yellow-brown, like the other grubs discussed.

Corn plants injured by Japanese beetle grubs or *Phyllophaga* grubs may appear wilted or stunted, and the lower portion of the stems may appear purple (phosphorus deficiency). Heavy infestations of white grubs may cause severe stand reduction. In fields where corn plants have emerged, look for these symptoms first, but make certain you find the grubs before you blame them for the injury. Other factors can cause similar symptoms.

We would be interested in learning what types of grubs are being found throughout the state this year. Don't hesitate to contact me to let me know whether you have found Japanese beetle grubs, *Phyllophaga* grubs, *Cyclocephala* grubs, or even *Aphodius* grubs. We'd like to develop a "portrait" of white grub problems in Illinois. We need to learn as much as we can if we ever hope to be able to predict their occurrence.—*Kevin Steffey*

---

### Replanting and Application of Soil Insecticides

Recent heavy rains, followed by much colder temperatures, have resulted in a few instances of corn having to be replanted in some fields. Some of the farmers affected had applied soil insecticides for control of corn rootworms, cutworms, white grubs, or wireworms, and they want to apply an insecticide again during replanting. Under this scenario, what's legal? Can

the insecticide applied the first time be applied again during replanting? What are the maximum use rates of specific soil insecticides within a growing season?

A few farmers ask these questions every year, so it's a good idea to be familiar with the labels of the different insecticides. Kevin Black, with Growmark in Bloomington, compiled information related to these questions, and with his permission, I am sharing the information in Table 2. (This table

provides guidelines. Check product labels for exact directions for use.) As you will note, very few products can be applied more than once per season. If replanting is necessary and a farmer wants to use a soil insecticide during replanting, he or she likely will have to use a product different from the product applied the first time. Noted exceptions are Lorsban, Pounce, and Warrior. Please be aware of the restrictions and follow all label directions and precautions.—Kevin Steffey

### Remember Armyworms? Look in Wheat and Grass Hay Fields First

The memories of armyworms in fields of wheat and grass hay in 2001 have not faded completely. In fact, I suspect that a lot of people will be very vigilant this year. Consequently, armyworm problems probably will not develop (if for no other reason than everyone is watching). Nevertheless, it pays to be prepared.

**Table 2. Use restrictions for insecticides applied to control soil insects in corn.** (Information courtesy of Kevin Black, Growmark, Bloomington, IL.)

Product	Statement on label	Notes
*Aztec 2.1%G	A maximum of 7.3 pounds AZTEC 2.1%G may be applied per acre per season.	7.3 lb of Aztec 2.1G per acre is equivalent to 6.7 oz per 1,000 feet of row.
*Aztec 4.67G	A maximum of 3.27 pounds AZTEC 4.67% Granular may be applied per acre per crop season.	3.27 lb of Aztec 4.67G per acre is equivalent to 3 oz per 1,000 feet of row in 30-inch rows.
*Capture 2EC	Do not apply more than 0.1 pound active per acre per season as an at-plant application.	The label-recommended use rate for corn rootworm control is 0.3 fluid oz, or 0.0046 lb a.i., per 1,000 feet of row. This is equivalent to 0.08 lb a.i. per acre in 30-inch rows.
*Capture 1.15G	Do not apply more than 0.1 pound active per acre per season as an at-plant application.	The label-recommended use rate for corn rootworm control is 6.4 to 8 oz per 1,000 feet of row. This is equivalent to 0.08 to 0.1 lb a.i. per acre in 30-inch rows.
*Counter CR	Only one at planting, post-emergence incorporated, or cultivation time treatment of Counter CR may be used.	
*Force 3G	Use Force 3G only once per crop.	
*Fortress 2.5G	Do not make more than one application per year.	
*Fortress 5G	Do not make more than one application per year.	
*Lorsban 4E	Do not apply more than a total of 15 pints of Lorsban-4E per acre per season.	
Lorsban 15G	For soil insect control, do not exceed the equivalent of 16 ounces of Lorsban 15G per 1,000 feet of row or 13.5 pounds of Lorsban per acre applied as a broadcast application per crop season.	The label-recommended use rate of Lorsban 15G for corn rootworm control is 8 oz per 1,000 feet of row. The label-recommended use rate of Lorsban 15G for control of severe infestations of white grubs or wireworms is 12 oz per 1,000 feet of row.
*Pounce 1.5G	Up to 0.6 pound active ingredient may be used per season.	The maximum label-recommended use rate for cutworm control is 16 oz per 1,000 feet of row, or 0.3 lb a.i. per acre in 30-inch rows.
*Pounce 3.2EC	Up to 0.6 pound active ingredient may be used per season.	The maximum label-recommended use rate for cutworm control is 8 fluid oz (broadcast), or 0.2 lb a.i., per acre.
*Regent 4SC	Make one in-furrow application at planting time only.	
*Warrior	Do not apply more than 0.12 lb a.i. (0.96 pts)/A per season.	The maximum label-recommended use rate on the FIFRA 2(ee) label is 3.84 fluid oz, or 0.03 lb a.i., per acre.

\* Use restricted to certified applicators.

Armyworm moths migrate into Illinois on the same prevailing winds and storm fronts that bring us black cutworm moths. Moths seek rank grass on which to deposit eggs, so wheat fields, grass hay, and corn planted into a grass cover crop or into grassy weeds are prime candidates for armyworm infestations. Corn planted no-till into a rye cover crop is especially prone to severe armyworm problems.

True armyworm larvae often go unnoticed until the injury is quite noticeable. However, the small, young larvae can be found if you look carefully for them. Young larvae are pale green, although longitudinal stripes are apparent, and the head is yellow-brown. They move in a looping motion. Older larvae are green-brown and more prominently striped. You usually can see a narrow, broken stripe along the center of the back and three stripes along each side of the body, at least one of which appears pale orange. The tan head is mottled with dark brown. Each proleg (the false, peglike legs on the abdomen of a caterpillar) has a dark band.

In wheat, larvae feed on leaves, working their way up from the bottom of plants. Injury to lower leaves causes no economic loss, but injury to the upper leaves, especially the flag leaf, can result in yield reduction. If the armyworms devour the flag leaves, they can chew into the tender stem just below the head and clip off heads. It is important that the damage not progress this far because yield loss is direct and not reversible. In seedling corn, larvae bite chunks out of the edges of leaves. If infestations are intense, the seedlings may be chewed to the ground. Large densities of armyworms can cause significant stand reductions.

Look for armyworms in several locations within a field. Armyworm larvae feed at night and sometimes on overcast days; they are relatively inactive during the day. In wheat fields, check the thickest areas where armyworm moths concentrated their egg laying. The larvae can be found among the

debris on the ground. In cornfields, armyworms may be found on the ground or curled up in the small corn whorls.

Control of armyworms in wheat may be justified if you find six or more nonparasitized larvae (3/4 to 1 1/4 inches long) per linear foot of row and before extensive head cutting occurs. A parasitized armyworm usually has a parasitoid egg (the egg of a tachinid fly) near its “neck.”

Insecticides labeled for armyworm control in wheat include \*PennCap-M (2 to 3 pints product per acre), Sevin XLR Plus (1 to 1 1/2 quarts), and \*Warrior (2.56 to 3.84 ounces). Use of \*PennCap-M and \*Warrior is restricted to certified applicators. Please read all product labels for more specific application instructions.

Control of armyworms in corn may be justified if 25% or more of the seedlings are damaged. Be sure you don't overreact to “bites” on 25% of the plants. The feeding injury has to be significant before the plant population is reduced. Insecticides labeled for armyworms in corn include \*Ambush (6.4 to 12.8 ounces product per acre), \*Asana XL (5.8 to 9.6 ounces), \*Lorsban 4E (1 to 2 pints), \*PennCap-M (2 to 3 pints), \*Pounce 3.2 EC (4 to 8 ounces), and Sevin XLR Plus (1 to 2 quarts). Those products preceded by an asterisk are restricted for use to certified applicators. Please read all product labels for more specific application instructions.—*Kevin Steffey and Mike Gray*

### Several Reports of Aphids in Wheat

Alan Mosler, with Twin County Service Company, and Dale Bermester, with Gateway FS, have been finding aphids readily in wheat fields in southern Illinois. Alan Mosler reported as many as 20 aphids per stem in some wheat fields. In some fields, aphid “mummies” (an indication of parasitism) were evident. Entomologists from Indiana also have reported that

aphids in wheat are common in southern Indiana. The aphids being found are probably bird cherry-oat aphids, although corn leaf aphids, English grain aphids, and greenbugs also can be found in wheat. Bird cherry-oat aphids are dark olive to green black, with orange, red, or rusty-colored patches around the bases of the cornicles (“tailpipes”) on the rear of the abdomen.

By themselves, aphids rarely cause injury to wheat in Illinois. However, they can transmit barley yellow dwarf virus (BYDV). The yellowing caused by BYDV usually appears in late spring.

We don't have much information about the situation with aphids in wheat right now, but we will keep you apprised of developments.—*Kevin Steffey*

### Alfalfa Weevil Damage Is Severe in Southern Illinois, Activity Picking Up in Central Illinois

Reports from southern Illinois, southern Indiana, and southern Missouri indicate that alfalfa weevil damage is severe in many fields. Kevin Black, with Growmark in Bloomington, reported that many fields south of Route 50 were devastated, with newly hatched (first instars) feeding shoulder-to-shoulder with third instars. In one field in Effingham County, he observed 80% tip feeding in 12-inch-tall alfalfa. Kevin also observed pupation beginning in some fields in southern counties.

In central Illinois, alfalfa weevil activity is beginning to pick up steam. Jerry Harbour and Tom Harms, with Lincoln Land FS, have been finding all sizes of alfalfa weevil larvae (1/8 to 3/8 inch long) in virtually all fields they have examined in Logan, Menard, and Sangamon counties. They found a range of two to five larvae per stem, and feeding injury was obvious.

The warning signs were in place for a “bumper year” for alfalfa weevil prob-

lems—high numbers of overwintering eggs in southern areas, mild winter weather. So now it's a matter of staying on top of it and preventing serious yield losses. If an insecticide is warranted (see Table 5 in issue no. 3, April 12, 2002, of the *Bulletin*), make certain you make note of preharvest intervals (i.e., the number of days between insecticide application and harvest). Preharvest intervals for the insecticides suggested for control of alfalfa weevils are presented in Table 3.

Figure 1 shows actual degree-day accumulations (base 48°F), from January 1 through April 22, 2002. Figure 2 shows projected degree-day accumulations (base 48°F), from January 1 through May 6, 2002. The warm temperatures during the week of April 15 accelerated alfalfa weevil development, and the more recent cool temperatures have slowed them down. Remember that an early peak of third-stage larvae from overwintering eggs occurs after an accumulation of 325 degree-days, which has already oc-

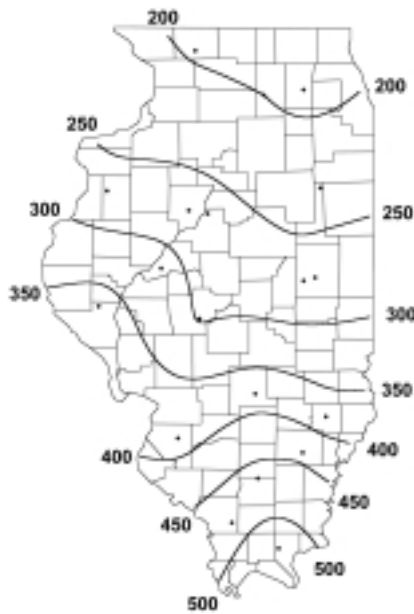


Figure 1. Actual degree-day accumulations (base 48°F) from January 1 through April 22, 2002. (Map courtesy of Bob Scott, Illinois State Water Survey.)

**Table 3. Preharvest intervals for insecticides suggested for control of alfalfa weevils.**

Product	Preharvest interval
*Ambush	14 days (rates greater than 0.1 lb a.i. per acre)
*Baythroid 2	7 days
*Furadan 4F	7 days (1/2 pt), 14 days (1 pt), 28 days (2 pt)
Imidan 70W	7 days
*Lorsban 4E	7 days (1/2 pt), 14 days (1 pt), 21 days (>1 pt)
*Mustang	3 days (cutting or forage)
*Pounce 3.2EC	14 days (rates greater than 0.1 lb a.i. per acre)
*Warrior	1 day for forage, 7 days for hay

\* Use restricted to certified applicators.

curred throughout the southern half of Illinois. A second major peak of third-stage larvae from spring-deposited eggs occurs after an accumulation of 575 degree-days.

As you scout for alfalfa weevil larvae, look for larvae that are infected with *Zoophthora phytonomi*. This fungal organism causes larvae to turn slightly yellow, and it eventually kills the weevil larvae. Dead larvae are brown and look like miniature loaves of bread. This fungus can cause epizoot-

ics that cause populations of alfalfa weevils to “crash” in a few days. Cool, damp weather promotes the spread of *Z. phytonomi*.

The parasitic wasps *Bathyplectes anurus* and *B. curculionis* also may help regulate alfalfa weevil populations. However, signs of their presence are not as obvious. Unfortunately, these natural control agents (the wasps and the fungus) usually don't exert their influence until after alfalfa weevil larvae have caused economic damage. Nonetheless, they could have an impact on the next generation of alfalfa weevils (the one that begins when adults lay eggs this fall and next spring), so their presence is worthy of note.—Kevin Steffey

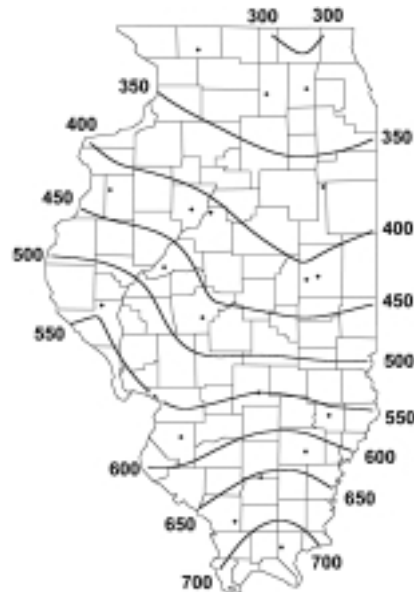


Figure 2. Projected degree-day accumulations (base 48°F) from January 1 through May 6, 2002. (Map courtesy of Bob Scott, Illinois State Water Survey.)

## PLANT DISEASES

### Virus in Winter Wheat

Symptoms characteristic of viral infection are showing up on the winter wheat crop in several areas of the state. Matt Montgomery, of Sangamon/Menard Extension Unit, reports many area fields showing the yellowing typically associated with infection by barley yellow dwarf virus (BYDV). He notes, as well, that he isn't seeing many aphids. Aphids are responsible for spreading BYDV. If the affected fields test positive for BYD infection and few or no aphids are found, this suggests that aphids transmitted the virus to the plants last fall.

Although aphids can and do transmit the virus in the spring, fall infection by BYDV presents a more serious situation for the plant. Typically, fall infection results in discolored, somewhat stunted, plants and blasted or poorly filled heads. As you are scouting, you will note that on plants infected with BYDV the older leaves typically begin to die back from the tip and may feel somewhat leathery, while the new leaves begin to discolor. Robert Bellm, of Edwardsville Extension Center, was out scouting wheat with Omar Koester, of Monroe Extension Unit, and they also reported viral symptoms of yellowing and flecking in several fields. I'll paraphrase Robert's comments, because he correctly indicated that "the symptoms we were seeing could have been caused by any number of viruses that pathologists have a million acronyms for." Very true. Keep in mind that a true diagnosis of BYDV or any of our other viral diseases cannot be made in the field but must be sent to a laboratory for specific testing. For more information on symptomatology and testing for common viral diseases of winter wheat in Illinois, refer to issue no. 3 of this year's *Bulletin*, on the Web at <http://www.ag.uiuc.edu/cespubs/pest/articles/200203j.html>.—*Suzanne Bissonnette*

### Yield Loss from Foliar Blights in Wheat

Conditions are primed for development of foliar fungal infections in areas of the state that have had intense sustained rains, such as Tim Laatch, of Effingham Extension Unit, reports. This presents an extremely conducive environment for development of foliar fungal blights on the wheat crop. Plants already infected with virus disease can also host fungal infections. Start scouting for fungal leaf blight development this week.

How can you decide if the infection warrants fungicide treatment? With wheat at around \$2.70 as I write today, fungicide application may or may not

be a good economic decision for your yield potential, but it may still be a good disease management decision.

The flag and flag-1 leaves contribute the most to final yield of the plant. In general, you can expect a yield loss in the range of 1 bushel per acre for each 5% of leaf tissue infected on either of these two leaves. To make your decision whether or not to spray, you will need to determine your yield potential. A rough way to determine yield potential is to count the number of tillers per square foot and multiply by 1.5. Then consider that fungicides can generally provide yield increases of 10 to 20% in fields where diseases are economically important compared to an untreated field. Next, determine the cost of the fungicide plus application at approximately \$16 to \$26 per acre, depending on material and type of application. With wheat at \$2.70, yield increases of 6 to 10 bushels would be needed to cover the cost of treatment. Putting a pencil to it with your own cost estimates and yield potential will help you make the decision whether a fungicide application will benefit you this season.—*Suzanne Bissonnette*

## WEEDS

### What Weed Is That?

The warm weather during the week of April 15 encouraged (yes, they grew pretty fast in a week's time!) the growth of many weed species in no-till fields. Trying to figure out what some of these early-season weed species are can sometimes be difficult, so we thought a short review on identification would be beneficial. For those readers with access to the Web version of the *Bulletin*, color photographs accompany the description of many of these species.

Several weed species in the mustard (Brassicaceae) plant family are commonly found in Illinois. Members of this family have either white or yellow flowers, and the flowers consist of four petals that form a cross. Although this family contains many species,

some of the more common members found in no-till fields are wild mustard (*Brassica kaber*) and yellow rocket (*Barbarea vulgaris*), field pennycress (*Thlaspi arvense*), Shepherd's-purse (*Capsella bursa-pastoris*), and the pepperweeds (Virginia and field).

Two members of the smartweed (Polygonaceae) family that emerge during the early spring are Pennsylvania smartweed (*Polygonum pennsylvanicum*) and prostrate knotweed (*Polygonum aviculare*). Both species (as well as most members of the Polygonaceae family) have swollen nodes (the genus name *Polygonum* means "many knees"), covered with a membranous sheath called an ocrea. Look closely where the leaf petioles join the main stem. Ladysthumb (*Polygonum persicaria L.*) is very similar in appearance to Pennsylvania smartweed, and the two can be distinguished from one another during early vegetative growth by examining the ocrea. Ladysthumb has a fringe of hairs at the top of the ocrea, whereas Pennsylvania smartweed does not.

Two species of chickweed are commonly found in Illinois. Common chickweed (*Stellaria media*) exists primarily as a winter annual but may sometimes emerge in the early spring. Mouseear chickweed (*Cerastium vulgatum*) is a perennial species and is generally not as abundant in no-till fields as common chickweed. Both species are similar in appearance; however, mouseear chickweed is covered with dense hairs on the leaf and stem surfaces, while common chickweed plants lack hairs. These species (especially common chickweed) can form very dense "mats" of vegetation that can make tillage and planting operations difficult. Chickweed flowers consist of 5 petals that are white and deeply lobed, giving the appearance of 10 petals.

Henbit (*Lamium amplexicaule*) and purple deadnettle (*L. purpureum*) are close relatives; both exist as winter annuals and both have square stems. Henbit is more commonly found throughout Illinois, while purple

deadnettle appears more often in the southern half of the state. The lower leaves of henbit are petiolate (attached to the stem with petioles), while the upper leaves grasp the stem (i.e., lack petioles). The upper leaves of purple deadnettle, however, are attached to the stem with petioles, are more triangular than those of henbit, and are less deeply lobed. As the name implies, purple deadnettle has a distinctive reddish to purple coloration of the foliage and stem.

Another species with a bright, yellow flower is butterweed (*Packera glabella*), also referred to as cressleaf groundsel. Although the yellow flowers may lead you to think butterweed is a mustard, this species actually belongs to the Asteraceae family. Butterweed has a hollow stem that can be either green or bright red in color.

Kochia (*Kochia scoparia*) is an early-emerging summer annual species. It is a herbaceous dicot and member of the Chenopodiaceae family (the same botanical family as common lambsquarters). Kochia leaves are alternate with simple blades that are highly pubescent. Stems are erect, highly branched, and often grooved on older plants, and they vary in color from green to red, often with both colors present on an individual plant. Kochia was introduced into North America from Europe as an ornamental because of its red color in late summer and fall (hence kochia's other common name, "fireweed").

Horseweed (*Conyza canadensis*), or mare's tail, exists as a winter or early summer annual species. Seedlings develop a basal rosette of leaves, and the leaves are covered with short hairs and have toothed margins. Control of this species with burndown herbicides can be difficult, especially if applications are made under cool conditions or without 2,4-D. Recent reports have identified biotypes of horseweed that are resistant to glyphosate in Delaware and Tennessee.

A species that is not as common as others described here but can be diffi-

cult to manage with burndown herbicides is star-of-Bethlehem (*Ornithogalum umbellatum*). This species is a bulbous perennial that is frequently sold as an early-flowering ornamental that has escaped into agricultural fields. All parts of the plant are poisonous if ingested. Emerging star-of-Bethlehem shoots resemble wild garlic or wild onion but lack the characteristic odor of these species. The mature leaves are dark green and frequently have a prominent white midrib. Plants typically produce bright white flowers beginning in early to mid-May, then die back for the remainder of the season.

Poison hemlock (*Conium maculatum*) is a biennial species that is commonly found in pastures and along railroad rights-of-way but is becoming more common in no-till fields. During its first year of growth, poison hemlock forms a rosette (a dense cluster of leaves growing close to the ground), then bolts to produce seed during its second year. The leaves are alternate, four to five times compound, and toothed, giving the leaves a "lacy" appearance. The stems are smooth and hollow with purplish spots or blotches. The entire plant is poisonous.

Dandelion (*Taraxacum officinale*) is a simple perennial species that forms a large, often deeply rooted taproot. Leaves have irregular margins, are often deeply lobed, and form a basal rosette. The flower is large and yellow. 2,4-D is often used for burndown control of dandelion, but control is generally more complete and consistent when 2,4-D is applied in the fall.

Prickly lettuce (*Lactuca serriola*) can exist as a winter or early-summer annual. Leaves on young plants are long and tapered at the end, with margins that are finely toothed. A row of prickles can be found along the midrib on the underside of the leaf. A milky juice is present in leaves, stems, and roots.

Several species of buttercup (*Ranunculus species*) exist in Illinois, but one that appears to be very common is

smallflower buttercup (*Ranunculus abortivus*). The lower leaves are generally broad and rounded, bright green in color with toothed margins, and borne on a long petiole. Upper leaves are borne on short petioles and deeply lobed (generally three to five lobes). Flowers have yellow petals, with seeds contained in a structure known as an achene.

Other weed species that you might find in no-till fields include speedwells (*Veronica species*), annual bluegrass (*Poa annua*), catchweed bedstraw (*Galium aparine*), and plantains. —Aaron Hager and Christy Sprague

---

### Windy Conditions and Herbicide Applications

Looking back through previous years' issues of the *Bulletin*, I find it's been about 5 years since I've mentioned the problem of herbicide drift. During these 5 years, and continuing this year, the problem of herbicide drift remains with us. Soil conditions in many areas of the state are favorable for corn planting, but windy conditions during the week of April 15 were much less favorable for herbicide applications. Indeed, several days this spring have seen wind speeds greater than 25 miles per hour, far in excess of wind speeds indicated on many herbicide labels for safe application. Pesticide applications made when wind speeds are sufficiently high favor off-target movement and are obviously not advisable.

Spray drift is a function of droplet size and wind speed. Spray droplet size is primarily determined by nozzle type and size and by spray pressure but can also be modified by air temperature and relative humidity. Smaller spray droplets are more prone to move outside the intended target area than larger droplets, but even large spray droplets can move outside the target area when applied during windy conditions. Much interest has recently been focused on drift-reduction nozzle technology, as well as utilizing drift-

reduction agents to reduce the amount of spray drift. Although these technologies can change droplet size and reduce spray drift, they may sometimes give a “false sense” of security such that applications are made when wind speeds are, in reality, too high.

We understand that, with the number of acres covered by commercial applicators, applications are sometimes made under less than ideal conditions. However, there are not many “good things” that come from herbicide drift complaints, not to mention the potential weed control problems if too much of the herbicide moves out of the intended target area. Increasing gallons of carrier per acre and lowering spray pressures are two options to help reduce the *possibility* of drift. *Precluding* drift may require keeping the sprayer in the shop until the wind dies down.—*Aaron Hager and Christy Sprague*

## REGIONAL REPORTS

Extension center educators, unit educators, and unit assistants in northern, west-central, east-central, and southern Illinois prepare regional reports to provide more localized insight into pest situations and crop conditions in Illinois. The reports will keep you up to date on situations in field and forage crops as they develop throughout the season. The regions have been defined broadly to include the agricultural statistics districts as designated by the Illinois Agricultural Statistics Service, with slight modifications:

- North (Northwest and Northeast districts, plus Stark and Marshall counties)
- West central (West and West Southwest districts, and Peoria, Woodford, Tazewell, Mason, Menard, and Logan counties from the Central district)
- East central (East and East Southeast districts [except Marion, Clay, Richland, and Lawrence counties],

McLean, DeWitt, and Macon counties from the Central district)

- South (Southwest and Southeast districts, and Marion, Clay, Richland, and Lawrence counties from the East Southeast district)

We hope these reports will provide additional benefits for staying current as the season progresses.

### Northern Illinois

With the warm temperatures last week, field activity increased, focusing on corn planting, anhydrous ammonia application, spring tillage, and herbicide application. Rainfall on April 19 through the 21st has stopped most fieldwork, with only very limited activity occurring by April 23.

Dave Feltes, IPM educator, has reported recently hatched alfalfa weevil larvae being observed in southern Rock Island County. Dave also reported that Kevin Foreman, Crop Production Services, caught black cutworm moths in traps last week in Fulton, Knox, Mercer, and Warren counties. Jim Morrison, crop systems educator, caught black cutworm moths in Stephenson County. However, to date, no one has recorded an intense moth capture.

April rainfall and last week’s warm temperatures have contributed to good alfalfa and grass pasture growth. There have been no reports of any winter injury to winter wheat or alfalfa.

### West-Central Illinois

What a difference a week makes! A significant number of corn acres were planted the week of April 13–19, with some farmers finishing corn and beginning with soybean. However, heavy rain last weekend, between 1 and 4 inches, stopped all fieldwork in the region. Ponding damage will be assessed in some fields with possible replanting in those areas.

Corn emergence has been rapid because of the recent warm temperatures. One producer said he has sel-

dom seen April-planted corn emerge in one week.

There have been reports of black cutworm and white grubs in the Quincy area.

Alfalfa weevil has developed rapidly in the last week. Many fields are nearing the treatment threshold, which is 25% of leaf tips skeletonized and three or more larvae per stem.

Wheat is progressing rapidly, also, with some fields approaching flag-leaf development. A few fields are showing a slight yellowing, which some speculate may be barley yellow dwarf disease.

## Contributing Authors

**Suzanne Bissonnette**  
(bissonnettes@mail.aces.uiuc.edu),  
Champaign Extension Center,

**Mike Gray** (m-gray4@uiuc.edu),  
Extension Entomology, (217)333-  
6652

**Aaron Hager** (hager@uiuc.edu),  
Extension Weed Science, (217)333-  
4424

**Bruce Paulsrud**  
(paulsrud@uiuc.edu), Extension Specialist/Pesticide Applicator Training/  
Plant Pathology, (217) 244-9646

**Christy Sprague**  
(Isprague@staff.uiuc.edu), Extension  
Weed Science, (217)333-4424

**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

**Return Service Requested**

---

*The Pest Management & Crop  
Development Bulletin* is brought to you  
by University of Illinois Extension and Information  
Technology and Communication Services,  
College of Agricultural, Consumer  
and Environmental Sciences,  
University of Illinois at Urbana-Champaign.  
This newsletter is edited by Erin Cler  
and formatted by Oneda VanDyke,  
ACES/ITCS.

Copyright © 2002, Board of Trustees,  
University of Illinois



UNIVERSITY OF ILLINOIS  
**EXTENSION**

Helping You Put Knowledge to Work

University of Illinois  
U.S. Department of Agriculture  
Local Extension Councils Cooperating

University of Illinois Extension provides equal  
opportunities in programs and employment.