



# PEST MANAGEMENT & CROP DEVELOPMENT

## BULLETIN

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## INSECTS

### The Insect Situation—An Overview

By this time of year, we have discussed, in some detail, a lot of what is occurring in the insect world in Illinois field crops. We have provided insect situation reports, scouting tips, economic thresholds, and suggested insecticides if such applications are necessary. Now, we just sort of sit back and watch the insects and crops develop toward the end of another rather unusual season.

With some exceptions, most of the insect problems we report at this time of year are (or have become) familiar refrains. For this issue of the *Bulletin*, I'll provide an overview of some of our familiar foes, with a separate article on an insect not frequently encountered.

*Corn rootworms.* In many areas of Illinois, corn rootworms have been the "insects of the summer." Significant silk clipping was observed throughout July, and root damage has been severe in many fields, for reasons we have explained in detail. Most important, the variant of western corn rootworms that deposits eggs in soybean fields has showed up in areas in which farmers have not observed rootworm problems in corn planted after soybeans in the past.

Consequently, we have embarked on a survey of fields of corn planted after soybeans to assess the level of root injury, from western to eastern Illinois. As of August 5, we had completed obtaining samples from fields in the following 15 counties: Brown, Ford, Fulton, Iroquois, Livingston, Macon, Marshall, Mason, McDonough, McLean, Peoria, Sangamon, Schuyler, Stark, and Tazewell. We extracted five roots in each of 10 fields scattered throughout each county.

Within the next week and a half, Extension educators will have completed sampling another 15 counties: Adams, Champaign, Christian, Grundy, Hancock, Kankakee, Knox, LaSalle, Logan, Mercer, Pike, Vermilion, Warren, Will, and Woodford. After all of the roots are washed and rated for rootworm larval injury, we should have a reasonable assessment of the extent of rootworm problems in corn after soybeans throughout the central one-third of the state. We'll provide preliminary results from these efforts in near-future issues of the *Bulletin*.

*European corn borer.* Indicators earlier this summer suggested we might encounter some heavy infestations of second-generation European corn borers this year. However, we have received very few reports about corn borers within the past few weeks, so it seems that threatening populations did not materialize. It's entirely possible that the dry weather had a negative impact on survival of European corn borers. Adults require water for successful egg production. If they had a difficult time locating water, the numbers of eggs deposited may have been small.

During our survey of cornfields for rootworm damage, several of us observed tunneling by second-generation European corn borers in stalks that we cut off. However, the level of injury in any given field was slight. Appar-

ently the potential threat of infestations of second-generation borers has dissipated.

*Grasshoppers.* Although problems with grasshoppers in Illinois pale by comparison with the current problems being experienced in Nebraska, numbers of grasshoppers in certain locations are quite high. During the aforementioned survey for rootworm damage, we walked through many grassy and weedy roadsides to get to cornfields, and we occasionally encountered very large numbers of grasshoppers around the field margins. However, in most situations very little damage had been done to the adjacent crops.

Such was not the case in a couple of fields in Jefferson County. Dennis Epplin, Crop Systems Educator in Mt. Vernon, submitted a couple of photographs of severe defoliation of cornfields he visited. Fortunately, this level of damage has been rare, restricted to areas where severe drought conditions prevail. However, light to moderate grasshopper damage is common throughout southern Illinois. Dennis also noted that grasshoppers destroyed some fields earlier this year that had been planted late. The level of damage encouraged some producers to replant, and the concern exists that these replanted fields will produce little, if any, yield.

*Soybean aphid.* We are still awaiting developments of soybean aphid populations in northern Illinois, but these recently invasive pests seem to have been limited in their scope of infestations this year. The same seems to be true for most of the rest of the Midwest, too. Nevertheless, scouting is still strongly encouraged. As we have repeated often, the numbers of aphids can increase dramatically in a very short time.

Stephen Doench, with Pioneer Hi-Bred International, has submitted the most thorough report of soybean aphids in Illinois. On August 1 he indicated that numbers of aphids had increased in all of the counties he works in: Bureau, Fulton, Henderson,

Henry, Knox, Lee, Marshall, Mercer, Peoria, Rock Island, Stark, Warren, and Whiteside. In one field in Henry County, Stephen counted 40 to 50 aphids per plant on the lower leaves. In one field in Lee County, Stephen observed some plants with more than 1,000 aphids near field edges, with an average of 40 or more aphids per plant in the rest of the 40 acres. He found aphids on leaves, stems, and pods. Keep watching and reporting.

*Twospotted spider mite.* Twospotted spider mites can be found at the edges of soybean fields in almost any area of the state where rainfall has been limited. These pests will continue to move into the field if their numbers increase during the hot, dry weather we have experienced. Keep watching the development of their populations, and treat them along field edges to prevent the injury from spreading to the interior of fields. However, remember to scout the interiors of fields, too, even if symptoms of injury are not apparent beyond field edges. If mites are present throughout the field, the symptoms of injury will show up soon.

*Potato leafhopper.* Numbers of potato leafhoppers have been extremely high this year. Injury in alfalfa fields is not uncommon. After driving through the countryside at night, many drivers have to scrape tiny, green little bodies from their windshields, headlights, radiator grills, and bumpers. Leafhopper population densities will begin to decline in August, but they're still numerous enough in some fields that treatments still are warranted. Don't let the damage get too severe, because alfalfa injured by potato leafhoppers often enters the fall and winter with fewer reserves and may not survive well over the winter.—Kevin Steffey

### Alfalfa Webworms in Southern Illinois

Robert Bellm, Crop Systems Extension Educator in Edwardsville, and David Feltes, IPM Extension Educator in the Quad Cities, both received re-

ports of severe infestations of alfalfa webworms from farmers in southern Illinois. Robert visited an alfalfa field in Madison County and found 3/4-inch larvae feeding on alfalfa leaves and webbing the leaves together. Fields affected have been reported from Clark, Fayette, Madison, and Wayne counties. Obviously these pests are distributed throughout southern Illinois, from the Mississippi River to the Wabash River. Alfalfa webworms caused damage to alfalfa in Illinois relatively infrequently. So their occurrence in large numbers this year is worthy of note.

Alfalfa webworms feed on leaves within the webbing the larvae produce. As the webworms grow larger, they may venture out more and consume foliage beyond the webs. However, they still retreat to the webbing when disturbed. Although these caterpillars consume foliage, the damage is economic only if the larvae occur in large numbers. Maybe more important is the contamination of the hay with webbing and fecal material in the webbing.

Alfalfa webworm larvae are distinctly marked with six black spots per body segment. Young webworm larvae are yellow-green, whereas fully grown (1-inch-long) larvae are darker green. The webs surrounding alfalfa leaves are characteristic of these pests.

Because this insect causes economic damage so rarely, economic thresholds have not been developed. Therefore, use your best judgment when trying to decide whether an insecticide application is warranted. When damage occurs near harvest, cutting the hay will accomplish as much as an insecticide. However, if the hay won't be harvested for some time, consider applying one of the following insecticides: \*Ambush at 3.2 to 12.8 ounces per acre; \*Baythroid 2 at 1.3 to 2.8 ounces per acre; \*Mustang at 2.4 to 4.3 ounces per acre; \*Pounce 3.2EC at 2 to 8 ounces per acre; Sevin XLR Plus at 1 to 1 1/2 quart per acre; or \*Warrior at 1.92 to 3.2 ounces per acre.

Products preceded by an asterisk are restricted for use by certified applicators. Please follow all label directions and precautions, and note the preharvest intervals.—*Kevin Steffey*

## PLANT DISEASES

### Crazy Top in Corn

Crazy top has been showing up in a number of Illinois cornfields in the past few weeks. This disease appears to be fairly common in some areas due to the wet weather and flooding that occurred this spring. Crazy top is different from most corn diseases in the effect it has on the plants and the type and mode of infection of the pathogen.

The initial symptoms of crazy top are excessive tillering, rolling, and twisting of upper leaves. The tassel proliferates in part or completely until it may resemble a tight bunch of leafy structures (this is the origin of the name “crazy top”). In addition, ear shoots may become elongated, and stunting and chlorotic striping of leaves may occur.

The type of pathogen and the way it impacts the plant are unlike most corn pathogens. Plants are infected either soon after planting or up to the four- to five-leaf stage. Crazy top is caused by the downy mildew called *Sclerophthora macrospora*. This pathogen is closely related to the “water molds” such as *Pythium* and *Phytophthora*. All of these pathogens require saturated soil or flooded conditions for 1 to 2 days to initiate infection with their swimming zoospores. This is the reason why crazy top is typically seen in low areas of fields. After infection, the pathogen grows inside the tissues and seems to focus its growth on the meristematic tissue, where it disrupts growing points in the infected plants.

Fortunately, crazy top is usually more of a curiosity than a severe disease and tends to cause significant losses only in scattered patchy areas. This disease is best managed by improving field drainage or by avoiding low, wet areas

in fields. Rotation may be helpful if care is taken to keep rotational fields free of grassy weeds, because the crazy top pathogen can infect a wide range of different grass species.—*Dean Malvick*

## WEEDS

### Preharvest Restrictions for Postemergence Soybean Herbicide Applications

In certain parts of the state, herbicide applications are still being made to later-planted fields, double-cropped soybeans, and areas that may need a little cleanup from weed escapes. Knowing that a number of these fields will undoubtedly be treated for the first time or re-treated, some considerations need to be made when choosing a herbicide for that final application.

Almost all postemergence soybean herbicides have what is known as a preharvest interval. Preharvest intervals specify the amount of time that must elapse between herbicide application and crop harvest. These intervals are established to allow sufficient time for the herbicide to break down or metabolize in the plant. Failure to observe the preharvest interval may result in residue levels of the herbicide in the crop in excess of the legal limits that were established at the time the herbicide received its label. Along with preharvest intervals are also restrictions on many of the postemergence soybean herbicides on whether the soybean crop may be used for feed or graze forage. Table 1 contains information about the preharvest intervals and grazing restrictions for a number of the postemergence soybean herbicides.

Another time interval that is important to observe is the rotational crop interval. Almost all herbicide labels have rotational crop tables. These rotational intervals specify the amount of time that must elapse between herbicide application and the planting of a rotational crop. This is particularly important with late-season herbicide appli-

cations. These intervals are established to reduce the possibility that sufficient herbicide residues may persist in the soil that could adversely affect the following rotational crop. Some herbicide rotational restrictions are based solely on time, while other factors, such as soil pH and the amount of precipitation received after herbicide application, influence the length of the crop rotational interval. For example, the Classic label states that field corn can be planted 9 months after application. However, this interval is extended 2 additional months if applications containing chlorimuron are made after August 1. Other examples include the 10-month rotational interval for field corn and the 4-month rotational interval for wheat from applications of Authority, Flexstar, and Reflex. Table 2 contains rotational crop intervals for soybean herbicides.—*Christy Sprague and Aaron Hager*

## 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)

**Table 1. Preharvest intervals and grazing restrictions for postemergence soybean herbicides.**

<i>Herbicide</i>	<i>Preharvest interval (days)</i>	<i>Forage</i>
<i>Postemergence grass only</i>		
Assure II	80	No!
Fusilade DX	Prebloom	No!
Fusion	Prebloom	No!
Poast Plus	75	Hay
Select	60	No!
<i>Postemergence broadleaf, contact</i>		
Basagran	None	Yes/ 30 days
Cobra	45	No!
Flexstar	Prebloom	No!
Galaxy	50	No!
Phoenix	45	No!
Reflex	Prebloom	No!
Resource	60	No!
Stellar	60	No!
Storm	50	No!
Ultra Blazer	50	No!
<i>Postemergence broadleaf, systemic</i>		
Backdraft SL <sup>a</sup>	90	No!
Classic	60	No!
Extreme <sup>a</sup>	85	No!
FirstRate/Amplify	65	Yes / 14 days
Glyphosate (all) <sup>a</sup>	14	No! <sup>b</sup>
Harmony GT	60	No!
Pursuit	85	No!
Raptor	85	No!
Synchrony STS	60	No!
<i>Harvest-aid use</i>		
Clarity	14	No!
Glyphosate	7	>25 days <sup>b</sup>
Gramoxone Max	NA	No!

<sup>a</sup> Use broadcast treatment only with Roundup Ready–designated soybeans.

<sup>b</sup> Consult label.

- 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

Once again scattered thunderstorms moved through the area Sunday night, with some areas receiving 0.5 to 1 inch of precipitation. However, many areas received no rainfall.

The soybean insect report is unchanged, with bean leaf beetles and spider mites present but with minimal acreage treated. However, the first report of a soybean aphid population warranting insecticide treatment has been received. The field is located in northern Bureau County.

Corn on lighter soils throughout the region has begun to show the effects of limited rainfall over the past 2 months. However, the majority of the corn acres have held up fairly well considering the lack of precipitation.

### West-Central Illinois

A cold front moved through the region on Monday evening, bringing showers and much cooler temperatures. Crop condition has improved dramatically from past weeks, but reports of poor pollination and kernel abortion in corn have been coming in as producers survey their fields, supporting the contention that yield potential has been reduced this year. Heavy flights of European corn borer moths are being reported in later-planted corn. Soybeans appear to be making good progress and are full of blooms and/or pods despite reduced heights.

The third cutting of alfalfa will begin within the next few weeks, but not before leafhoppers raise concern. Pasture condition has improved dramatically, temporarily alleviating concerns of a shortage of late-season forage.

The Orr Center will hold its annual agronomy field day on August 13. The tour will begin at 9:00 a.m. and conclude at noon with lunch. Topics of interest will include western Illinois weed and insect updates, nitrogen management in no-till corn, corn and soybean rotation alternatives, climatic issues, and effects of progressive corn defoliation on yield. The Orr Center is located on Highway 104, north of Perry, Illinois.

**Table 2. Soybean herbicide recropping restrictions, months.**

Herbicide	Comments	Field corn	Sorghum	Wheat	Oats	Rye	Alfalfa	Clover	Soybeans
<i>Chlorimuron and its premixes</i>									
Canopy <sup>a</sup>	w/metribuzin	10	12	4	30	4	10	12	AT
Classic	high chlorimuron	9 <sup>b</sup>	9 <sup>b</sup>	3	3	3	12 <sup>b</sup>	12 <sup>b</sup>	AT
Synchrony STS	w/thifensulfuron	9 <sup>b</sup>	9 <sup>b</sup>	3	3	3	12 <sup>b</sup>	12 <sup>b</sup>	AT
<i>Cloransulam and flumetsulam</i>									
FirstRate, Amplify	cloransulam	9	9	3	30 <sup>Fba</sup>	30 <sup>Fba</sup>	9	30 <sup>Fba</sup>	AT
Python	flumetsulam	AT	12	4	4	4	4	26 <sup>Fba</sup>	AT
<i>Imazaquin and its premixes (Region 3 = north of Peoria)</i>									
Backdraft SL—									
Region 2 <sup>c</sup>	w/glyphosate	9.5 <sup>d</sup>	11	4	11	18	18	18	AT
Backdraft SL—									
Region 3 <sup>c</sup>	w/glyphosate	18 <sup>d</sup>	11	18	18	18	18	18	AT
Scepter—Region 2 <sup>c</sup>	imazaquin	9.5 <sup>d,e</sup>	11 <sup>e</sup>	3 <sup>e</sup>	11 <sup>e</sup>	18	18	18	AT
Scepter—Region 3 <sup>c</sup>	0.5 rate, post	NY <sup>d</sup>	11	Fall <sup>e</sup>	NY <sup>e</sup>	18	18	18	AT
Scepter—Region 3 <sup>c</sup>	imazaquin	18	11	18	18	18	18	18	AT
Squadron—Region 2 <sup>c</sup>	w/pendimethalin	9.5 <sup>d,e</sup>	11 <sup>e</sup>	4 <sup>e</sup>	11 <sup>e</sup>	18	18	18	AT
<i>Imazethapyr and its premixes</i>									
Extreme	w/glyphosate	8.5 <sup>f</sup>	18	3	18	4	4	40	AT
Pursuit	imazethapyr	8.5 <sup>f</sup>	18	3	18	4	4	40	AT
Pursuit Plus	w/pendimethalin	8.5	18	4	18	9.5	9.5	40	AT
<i>Metribuzin and its premixes</i>									
Axiom	w/flufenacet	AT	12	12	12	12	12	12	AT
Boundary	w/S-metolachlor	8	12	4.5	12	12	4.5	12	AT
Domain	w/flufenacet	1	12	12	12	12	12	12	AT
Sencor	metribuzin	4	12	4	12	12	4	12	4
<i>Sulfentrazone alone or plus chlorimuron</i>									
Authority	sulfentrazone	10	10	4	4	4	12	18	AT
Canopy XL <sup>a</sup>	w/chlorimuron	10	10	4	30	4	12	18	AT
Command Xtra	w/clomazone	10	10	12	16	16	18	18	AT
Gauntlet	w/cloransulam	10	10	4	12	12	12	30 <sup>Fba</sup>	AT
<i>Other active ingredients</i>									
Command 3ME	clomazone	9	9	12	12 <sup>g</sup>	12 <sup>g</sup>	12 <sup>g</sup>	12 <sup>g</sup>	AT
Flexstar, Reflex	fomesafen	10	18	4	4	4	18	18	AT
Pendimax/Prowl	pendimethalin	NY	NY	4	NY	NY	NY	NY	AT
Raptor	imazamox	8.5	9	3	9	4	9	18	AT
Treflan	trifluralin	NY	12	NY	12	12	NY	NY	AT
Valor	flumioxazin	2 <sup>h</sup>	2 <sup>h</sup>	2 <sup>h</sup>	12	4	12	12	AT

<sup>Fba</sup> = field bioassay needed (see label); NY = next year; 2Y = second year; AT = anytime.

<sup>a</sup>Midwest states' rate, soil pH <6.8.

<sup>b</sup>Extend 2 months if applied after August 1.

<sup>c</sup>See label for exact area and Region 3 (northern Illinois) full-use rate.

<sup>d</sup>10- to 15-inch annual rainfall is required, or use CL-corn hybrids.

<sup>e</sup>15 months if Scepter/Scepter sequence, but 9.5 months or NY for CL-corn hybrids.

<sup>f</sup>Clearfield (CL, formerly IMI) designated corn hybrids may be replanted anytime.

<sup>g</sup>Cover crops may be planted anytime, but stand reductions may occur. Do not graze or harvest for forage for at least 9 months.

<sup>h</sup>30 days following applications of 2 ounces per acre or less.

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