



# PEST MANAGEMENT & CROP DEVELOPMENT

## BULLETIN

FOR IMMEDIATE RELEASE  
No. 14 / June 25, 2004

Executive editor: Kevin Steffey,  
Extension Entomologist

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

Copyright © 2004, Board of Trustees,  
University of Illinois

### Also in This Issue

- Corn Rootworm Larval Injury Reports Continue, 126
- Miscellaneous Insect News, 126
- Does Cooler Weather Now Help or Hurt? 126
- Regional Reports, 127

## INSECTS

### Japanese Beetle Update

After a flurry of e-mails and phone calls last week, things have been considerably quieter the past several days. Of course, Japanese beetles and corn rootworms are still headlining this week, but we have a few other updates to offer as well.

They've arrived 2 full weeks ahead of last year's first sighting, and Japanese beetles are slowly making themselves known. Late last week, some leaf feeding on corn plants was observed, although the feeding was noted as "very limited." Most Japanese beetles spotted in fields were actually feeding on weeds, such as velvetleaf and Pennsylvania smartweed.

E-mails this week have been quite different. With cornfields edging closer to tassel in parts of the state, concern over economic levels of Japanese beetles is starting to take hold. Most reports are still noting only low levels of beetles, with little feeding in corn, but I've also received some questions on economic thresholds and treatment options. Before deciding to go ahead with an insecticide treatment, be sure to get a good idea of the Japanese beetle pressure in the field. Populations of Japanese beetles are usually clumped within a field. As adult beetles emerge, they move toward flowering plants in the area to feed. Female beetles also emit a pheromone, attracting other adult Japanese beetles. It is very possible to observe lots of beetles in the field edges or borders and then find none as you make your way into the field. Growers are urged to scout throughout the cornfield to determine what level of Japanese beetles is present. Densities may be over- or underestimated if sampling is done in only a few locations.

While populations in most areas are still small, populations may reach economic levels in the future. When densities of Japanese beetles reach or exceed three beetles per ear before pollination is complete and silk clipping is obvious, an insecticide application may be warranted. With that said, also make a decision that is economically justifiable. An entire field may not need to be sprayed if silk clipping is occurring only in certain areas. Insecticides labeled for control of Japanese beetles in corn are listed in Table 1. Science and experience have taught us that pyrethroid insecticides, in general, lose some efficacy when temperatures are high. Also, keep in mind that, while Japanese beetles continue to emerge and move around, initial

**Table 1. Insecticides labeled for control of Japanese beetles in corn.**

<i>Insecticide</i>	<i>Rate</i>
Baythroid 2	1.6 to 2.8 oz
Capture 2EC	2.1 to 6.4 oz
Discipline 2EC	2.1 to 6.4 oz
Mustang Max	2.72 to 4 oz
Penncap-M	2 to 4 pt
Pounce 3.2EC	4 to 8 oz
Sevin XLR Plus	1 to 2 qt
Warrior	2.56 to 3.84 oz

efficacy of almost any product will seem questionable because of beetles immigrating into sprayed fields. Keep this information in mind when you assess the efficacy of any product applied to control Japanese beetles in corn.

Please refer back to last week's issue (issue no. 13, June 18, 2004) for more information on the Japanese beetle, and feel free to share any information concerning Japanese beetle problems.—*Kelly Cook*

### Corn Rootworm Larval Injury Reports Continue

Reports of corn rootworm larvae feeding on roots continue to come in. Injury in first-year cornfields has also been reported in Logan, Sangamon, and Shelby counties. We have now had our first report of western corn rootworm adults. Shortly after *the Bulletin* went to print last week, Joe Spencer, with the Illinois Natural History Survey, and Darren Bakken, a graduate research assistant in the Department of Crop Sciences, found western corn rootworm adults on separate occasions in experimental plots in Urbana. Historically, western corn rootworm adults are more commonly seen after the fourth of July holiday. Adults initially feed on corn leaf tissue, which does not generally cause economic injury. As cornfields begin to tassel, western and northern corn rootworms feed in silk tissue and pollen. Future articles will provide management strategies and discussion to prevent excessive silk clipping and future yield loss. Let us know when corn rootworms begin to emerge in your area.—*Kelly Cook*

### Miscellaneous Insect News

While *European corn borers* have been relatively quiet thus far in 2004, moth flights continue throughout the state. Nightly moth counts remain over 100 in a light trap monitored by Marc Rigg, with Pioneer Inc. in

Mason County. *Corn earworm* moth flights are also on the increase. Dan Fournie of Collinsville has been catching 50 to more than 100 moths per trap per night for a few weeks; Mike Roegge of Adams County had a peak catch of 55 moths in his trap on June 15 after setting it up the day before, and he has since consistently averaged 20 moths per night. There is little to report on *potato leafhoppers*. Jim Morrison, at the Rockford Extension Center, has seen very few leafhoppers when scouting through alfalfa fields this past week. *Armyworms* have quieted down in northeastern Illinois. It seems as though the first generation is winding down. One report from Kendall County last week also noted finding diseased armyworm larvae on wheat heads and minimal leaf feeding.—*Kelly Cook*

## CROP DEVELOPMENT

### Does Cooler Weather Now Help or Hurt?

Most areas in Illinois accumulated 150 to 200 growing degree-days (GDDs) last week (through June 20) and so remain 100 to 200 GDDs ahead of average since May 1. With early corn planting this spring, much of the crop received 200 or so GDDs before May 1, so much of the crop is 10 to 15 days (250 to 400 GDDs) ahead of normal. This is reflected in the fact that tassels are appearing widely on early-planted corn, and some corn is well into pollination now.

The return of cool temperatures this week will mean slower GDD accumulations and will thus slow the rush of growth that much of the crop has been maintaining for the past month. A high/low temperature combination of 75/55 means 15 GDDs, while one of 90/70 accumulates 28 GDDs. That's a relatively large change on a daily basis. Losing 80 to 90 GDDs in a week means that the "excess" we have accumulated would dissipate within 3 or 4 weeks. Of course, we have little reason to expect that temperatures will remain lower than normal for weeks at a time.

Would it be a problem if lower than normal temperatures persisted for the next several weeks? Probably not. Lower daytime temperatures mean slower rates of photosynthesis; with full sunlight, photosynthesis at 75° is about 30% slower than at 86°, and with cooler nights, daily rates might be reduced even more than that. Cooler nights mean less loss of sugars accumulated during the day and so are favorable, but on balance the plant produces more at 85° than at 75°. In soybean, cooler nights are more problematic, because they mean less movement of starch out of the leaves and so can inhibit photosynthesis the next day.

On the positive side, lower temperatures also cut water-use rates, in about the same proportion as photosynthesis is decreased. We also expect that the cooler, drier weather will tend to favor root growth on both corn and soybean, which might turn out to be very helpful later in the season. Weather like this also means slower rates of development of most diseases and insects, and the higher amounts of sunshine help to lessen the loss in photosynthesis from lower temperatures. Finally, slower growth allows plant stem tissue to mature some and so should lessen the likelihood of green snap. Given all this, and the advanced growth stage of corn already, we think the lower temperatures this week will have a modest positive effect on corn.

The soybean crop has improved some in appearance, and continued drier weather will help it come along, though cooler temperatures will not be very helpful. Its color should improve as nodules develop and become active, and canopies should continue to fill in, though at a slower rate than if it were warmer. Many people have noted some flowers on earlier-planted soybean plants this year. That's because the warm weather stimulated growth—soybean plants need to reach the 3-trifoliolate stage before they can flower—and warm nights also speed up the activity of a light-sensitive system in the plant that allows flowering to occur. Flowering will likely stop during these long days and cooler

nights and will resume in early to mid-July.

Some of the flowers present now will form pods, and these will remain ahead in development of the main flush of pods that will form later in July. There are usually not many of these early flowers or pods, though, so their contribution to yield will not be great. You can use them as a general indicator of the state of the plant over the next few weeks, though: If they stay attached and develop seeds, it means that the plant is doing well. But if they fall off the plant, it's probably because the plant is struggling to maintain high rates of photosynthesis and growth.

There has been a bit of confusion about vegetative growth staging in soybean. Dr. Palle Pedersen at Iowa State University has revised the publication *How a Soybean Plant Develops*, and this should help clear up the confusion. We stage by counting the number of "unrolled" trifoliolate leaves (those with three leaflets, as opposed to the lowermost leaves on the stem, which have only single leaflets and are called "cotyledonary" leaves). So a V1 plant has a single trifoliolate leaf, with the trifoliolate leaf above it starting to unroll. Plants from an early May planting at Urbana are now in stage V6 or so. They will add about two new leaves per week, up to V16 or so. Once flowers appear, which usually happens at about V8, we usually stop paying much attention to V stage and start staging by R stage, which tracks flower, pod, and seed development.

We harvested the wheat variety trial at Urbana on June 22, and preliminary indications are that the average yield of the varieties exceeded 90 bushels per acre. That is almost 20 bushels per acre lower than the yields last year, but harvest this year was almost 2 weeks earlier than in 2003. Flowering was about 5 days earlier this year, but we expected the warm, often wet weather during grain fill to reduce yields much more than actually happened. We'll chalk it up to the out-

standing weather in April that set the crop up for high yields and also to the ability of the crop to fill grain very quickly, even though it was warm, wet, and cloudy. We can still play "what might have been" had we had cooler, drier weather in May and June, but we'll double-crop earlier (and farther north) and be glad for the wheat yield we got.

I have not yet heard reports on field pea yields, but some fields in southern Illinois have likely been harvested by now. The weather over the past 6 weeks has probably not been very kind to the pea crop, but it could still surprise us like the wheat crop has done. RAPCO, the company that brought in seed and encouraged production of pea in Illinois this year, has reportedly suggested the possibility of planting pea in July for an October harvest. We know even less about the potential for such a crop than we knew about field pea planted in March, but we would have some concern about hot, dry (or wet) weather during vegetative growth, the potential for diseases, weed control, and the possibility of unexpected photoperiod sensitivity that could result in early or late flowering. Weather to fill seed may well be better in September and October than it was in May and June this year, but beyond that, we have little basis to even guess about crop prospects for summer-planted pea.

—Emerson Nafziger

## REGIONAL REPORTS

### Northern Illinois

According to the recent Illinois Agricultural Statistics Service's newsletter, *Illinois Weather and Crops*, accumulated precipitation from May 1 to June 20 is 4 inches or more above average at more than 80% of the weather reporting sites in the northern region. Numerous cornfields reflect that rainfall total, as evidenced by field areas of "yellow corn" and uneven plant height.

Numerous reports of scab infestations in wheat have been received during the past few weeks.

Field activities last week focused primarily on postemergence soybean herbicide application and some re-planting efforts.

Just a reminder that the annual Weed Control Field Day at the U of I Northern Illinois Agronomy Research Center in Shabbona will be held Wednesday, July 7, beginning at 5:00 p.m. U of I weed scientists and graduate students will discuss some of the more than 20 weed control research studies being conducted at the center. At the conclusion of the 90-minute tour, a meal will be available on site.

### Southern Illinois

Wheat harvest is still progressing as growers worked around periods of showers during the past week. Areas south of I-64 are pretty well finished, while a fair amount in the I-70 area is still in the field. As harvest is delayed, test weights and grain quality have declined steadily.

Corn planted in April is beginning to silk, and pollination will quickly follow. Fields that had serious water damage earlier have regained a normal green color but tend to be uneven in height. Japanese beetle emergence is escalating, but there have been no reports of silk clipping so far. The current sunny and cool conditions coupled with adequate soil moisture are optimal for successful pollination.

Soybean development ranges from just-planted double-cropped through R1 in the earliest-planted fields, and the crop seems to be in good condition with no evidence of disease problems. While many fields have had their postemergence herbicide applications, there are far too many showing weed heights in excess of 12 inches. These need to be sprayed as soon as possible, or yield suppression will occur.

Alfalfa is in excellent condition, and the second cutting has either been taken or will be later this week. Potato

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

---

leafhopper damage seems to be minimal up to this point, but it needs to be monitored closely as temperatures rise during the remainder of the summer.

#### **West-Central Illinois**

Corn is tasseling throughout the area. Many soybean fields, while still “a little wooly,” should be cleaned up soon. Wheat is now being cut.

Corn borer pinholes are now evident as leaves unfurl. Adult rootworm beetles should soon be evident in the area, with pupae present in fields for the better part of a week or more, depending on the location. Recent observations continue to indicate that the first-year rootworm biotype continues to develop in the west-central region. Japanese beetles appeared to emerge about a week and a half earlier than normal (many noting their first adult beetle around June 10) and are now filtering into fields.

Diseases are of concern following a long spell of wet weather in much of the region. Bacterial stalk rot has been observed in Mason County. Soybean fields have shown varied levels of disease, with some still observing phytophthora on roots as well as Septoria on fairly young foliage. The intensity of scab varies in area wheat, with some fields now appearing fairly dingy in color. Other fields show only scattered evidence of the blank florets associated with the fungus responsible for scab.

#### **Contributing Authors**

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

Emerson D. Nafziger (ednaf@uiuc.edu),  
Crop Sciences, (217)333-4424

Published by University of Illinois Extension and  
Information Technology and Communication Services,  
College of Agricultural, Consumer  
and Environmental Sciences,  
University of Illinois.  
Editor: Erin Cler; formatter: Virginia Cuppernell.

Copyright © 2004, 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.