PEST MANAGEMENT & CROP DEVELOPMENT

BULLETIN

FOR IMMEDIATE RELEASE
No. 4 / April 17, 1998

Executive editor: Kevin Steffey,
Extension Entomologist

Web subscriptions available:
http://www.ag.uiuc.edu/cespubs/pest/
For subscription information, phone
217.244.5166, or e-mail
acesnews@uiuc.edu

## In This Issue


- Intense Flights of Black Cutworms Surge Through Central and Southern Illinois, 30
- Soil Insecticides: Increasing the Odds for Performance, 30
- *Bt*-corn and Livestock, 33
- Scout for Alfalfa Weevils in the Southern Half of Illinois, 33
- Axiom Receives Label, 34
- Select Labeled for Alfalfa, 34
- Knockdown of Existing Vegetation in No-Tillage Systems, 35
- Roundup Ready Corn Available in 1998, 35
- Septoria Leaf Blight of Wheat, 35
- Wheat Viruses, 35
- Gaucho Insecticide for Seed Corn Production, 36


# INSECTS

## Corn Flea Beetles: Watch Out for These Insects This Spring!

Corn flea beetles will likely create some anxiety this spring for those involved in the seed-production business. Flea beetles are quite small (1/16 inch in length) and are impressive leapers when disturbed, so their name is a good fit. Flea beetles overwinter as adults and are most likely a problem when corn plants are slowed in their development by cool spring weather. Of primary concern to the seed industry is the potential for transmission of Stewart's disease or wilt to susceptible inbreds.

Mild winters favor the survival of flea beetles and increase the odds that Stewart's disease may be a problem. In an effort to quantify the effect of winter conditions on beetle survival, it is commonly suggested that if the average monthly temperatures for December, January, and February sum to more than 90, flea beetle survival through the winter may be good.

Bob Scott, Illinois State Water Survey, has provided a map (Figure 1) for Illinois that reveals winter temperatures for this 3-month period will favor

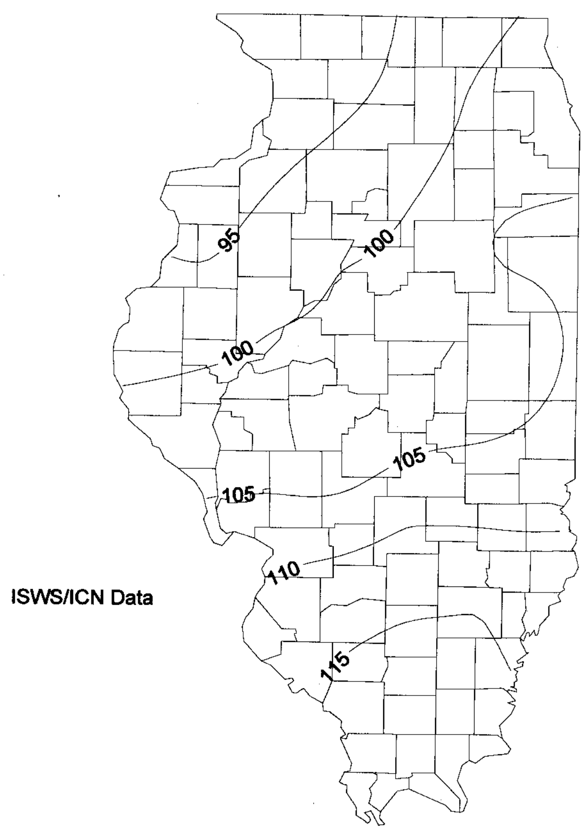


*Figure 1. Sum of monthly average temperatures for the months of December 1997 to February 1998.*

the likelihood of increased problems this spring with flea beetles, for essentially the entire state. We encourage vigilant scouting for these small beetles this spring, especially where inbreds and hybrids susceptible to Stewart's disease are being grown. Insecticides labeled as rescue treatments for corn flea beetle control include *Ambush 2E, *Asana XL, Lorsban 4E, *Penncap-M, *Pounce 3.2EC, Sevin XLR Plus, and *Warrior 1EC (*= use restricted to certified applicators only).

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

## Intense Flights of Black Cutworms Surge Through Central and Southern Illinois

Numerous cooperators have reported intense flights (nine or more moths caught during a 1- to 2-day period) throughout some counties of central and southern Illinois. Ron Hines, senior research specialist at the Dixon Springs Agricultural Center**,** reported that intense flights of black cutworm moths occurred in Massac and Pope counties on April 8 and 9. Jeff Staley, who monitors traps near Ridgway in Gallatin County, also reported very impressive flights of moths on April 9 (21 moths caught on one trap), April 10 (23 and 15 moths caught, two traps), and April 13 (10 moths caught on one trap). Intense captures of moths also were observed by cooperators in Effingham County on April 12.

In central Illinois, the migratory surge of black cutworm moths also has been noticed by cooperators. Dennis Copp, with LincolnLand FS located in Auburn, Sangamon County, found 10 moths in his trap the morning of April 9. Jeff Hoffman reported the capture of 15 moths in his trap the morning of Easter Sunday (April 12) just south of Bement, Piatt County.

Although intense flights in northern Illinois have not been reported, moth captures have been common. Jim Morrison, crop systems educator, Freeport Extension Center, noted that moths were caught in a trap 2 miles north of Freeport on April 6 and 7.

In next week's *Bulletin*, we will offer a table that gives our predictions regarding potential cutting dates this spring. To the cooperators who have reported moth captures we offer our sincere thanks! The moth captures that have been reported indicate that cornfields in the susceptible stage for economic injury (1- to 4-leaf stage) should be scouted very carefully this spring. Please keep your observations from the field pouring in.

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

## Use of Soil Insecticide: Increasing the Odds for Performance

Soil insecticides remain the primary tool that midwestern producers use to minimize yield losses caused by northern and western corn rootworm larval injury to corn roots. Soil insecticide declines of the late 1980s and early 1990s are being reversed quickly. Since 1995, western corn rootworms have plagued first-year corn producers in east-central Illinois and northwestern Indiana. In 1995, yield losses were particularly acute due to impressive densities of larvae, a poor growing season, and the general lack of soil insecticide use on rotated corn acres.

Since 1996, producers in eastern Illinois and affected areas of Indiana have increased their use of soil insecticides on rotated corn; however, precise estimates of this escalation are not available. Surveys designed to estimate the extent of soil insecticide use on first-year corn have been conducted (summer 1997) in Illinois and Indiana and are being analyzed currently. Suffice it to say, because crop rotation has failed to keep western corn rootworms in check, expenditures for soil insecticide will continue to climb.

In 1997, the confidence producers had placed in the efficacy of soil insecticides was shaken in many areas of Illinois. Widespread reports of severe corn rootworm larval injury in continuous and rotated corn acres occurred despite the use of soil insecticides. Also, the performance of several of the most popularly used soil insecticides suffered significantly at University of Illinois experimental plots in Monmouth and Urbana. Because crop rotation in east-central Illinois failed to afford consistent "rootworm protection" and soil insecticides made a poor showing in 1997, many producers feel their backs are up against the wall.

*What may have gone wrong in 1997 with regard to the generally perceived lack of soil insecticide performance?* To answer this, we present root-rating data (for labeled insecticide rates) from U of I soil insecticide trials collected in DeKalb, Monmouth, and Urbana over the last 10 years (1988 to 1997). Only those experiments in which root injury was near or exceeded a root rating of 5.0 (two nodes of roots destroyed) are discussed. By following this approach, we can begin to observe more clearly how soil insecticides perform under intense rootworm pressure in a great variety of environmental circumstances.

*Does soil moisture make a difference when it comes to soil insecticide performance?* Water solubilities of the most commonly used soil insecticides are Aztec (5.5 ppm), Counter (15 ppm), Dyfonate (13 ppm), Force (2 ppm), Fortress (3 ppm), Furadan (351 ppm), Lorsban (2 ppm), and Thimet (50 ppm). After conducting studies for 5 years, researchers in South Dakota offered the following observations on root ratings and water solubilities of soil insecticides: *Root damage ratings appeared to be inversely related to water solubility of the various insecticides. Higher water solubility may have permitted greater vertical and horizontal movement of insecticides in the root zone. The inherent toxicities* *of these chemicals to larvae in soil did not appear to be related to root damage rating because the two chemicals exhibiting the lowest toxicity to larvae in the same soil had the lowest root ratings.* Additional observations by entomologists in South Dakota suggested that very dry soil conditions, particularly in the upper 1-1/2 inches, contributed to unsatisfactory levels of soil insecticide performance. For soils saturated at the time of egg hatch, observers indicated that larvae would have difficulty in establishing within a root system. Overall, they concluded that soil moisture is a major factor in determining the dynamics of soil insecticide performance and resulting levels of root protection.

*How have soil insecticides performed in Illinois over a wide range of environmental conditions?* Based upon the studies in South Dakota, perhaps we should expect that the driest seasons of the past 10 years should have led to reduced levels of insecticide efficacy in our Illinois trials. In fact, this is precisely what occurred for at least two very water-insoluble compounds (Force and Fortress) in 1988 and 1994, the two driest years (1988 to 1997) from planting to root evaluations, in DeKalb and Urbana, respectively (Table 1). The performance of Force 1.5G and 3G was compromised during each of these very dry seasons when the product was applied in-furrow. Surprisingly, Lorsban 15G, also a very water-insoluble compound, kept root injury below a rating of 3.0 in each of these very dry seasons. The wettest season (planting date to root evaluation date) of the last 10 years occurred in Urbana during 1990. Even though injury in the check plots was severe (average root rating = 5.10), all soil insecticides kept root ratings below 3.0, the so-called economic root-injury index. Nearly 15 inches of rain fell on our experiment in Urbana during 1992 (the second wettest season); in contrast to 1990, Aztec 2.1G, Counter 15G, Counter 20CR, Dyfonate II 20G, Lorsban 15G, and Thimet 20G failed to keep root ratings below 3.0. These root-rating results from two very wet seasons are difficult to decipher. Heat-unit totals from January to May and from January to July are similar for 1990 and 1992 in Urbana (Table 1). In addition, the level of rootworm pressure was similar for each year, even slightly less in 1992. Clearly, soil insecticide performance cannot always be untangled on the basis of water-solubility properties of products and precipitation amounts. However, root ratings were generally lower in years receiving more precipitation, such as 1990 (Urbana), 1991 (DeKalb), 1991 (Urbana), and 1993 (Urbana).

*Can rainfall totals explain the general lack of soil insecticide performance in Illinois during 1997?* Precipitation data collected from Monmouth and Urbana suggests that rainfall was most likely **not** a factor. Rainfall at both locations was well between the wet and dry extremes described previously. Despite moderate precipitation levels, root ratings for many soil insecticides were well above 3.0 and 4.0 at Urbana and Monmouth, respectively, in 1997. Although the importance of precipitation and soil moisture can't be downplayed in understanding the dynamic nature of soil insecticides and root protection, other environmental and biological variables are involved.

*Does the accumulation of heat units during the spring affect soil insecticide performance?* Corn rootworm development is paced by the accumulation of heat units. However, some entomologists have contended that predicting corn rootworm phenology could be accomplished just as effectively with a calendar. Observations during the past several years have led us to believe that corn rootworm egg hatch and root injury are affected profoundly by seasonal temperatures. In 1997, Purdue University entomologists (*Pest and Crop Newsletter*, no. 13) reported that the corn rootworm egg hatch was delayed considerably, the latest in 15 years. They attributed the very late hatch to the exceptionally cool spring temperatures. In 1997, heat-unit accumulations (base 52°F, air temperatures) in Monmouth and Urbana were the lowest for the 10-year period being discussed. Under conditions of moderate rainfall, below-average heat accumulations, and intense rootworm pressure, the stage was set for the very poor performance of most soil insecticides at these two locations in 1997. Conditions in producers' fields similar to these, not unexpectedly, created unpleasant "rootworm experiences."

*Can we generally expect to see soil insecticides lose their "edge" if cooler-than-normal spring temperatures contribute to a delayed egg hatch?* The answer to this question remains somewhat murky. In 1996, another cool spring contributed to an extended larval feeding period. Roots from our Urbana experiment were evaluated on two dates, July 15 and July 29. During this 2-week interval, root injury in the check plots increased from 4.1 to 5.15. For most of the soil insecticides, average ratings remained relatively stable; however, significant increases in the level of injury occurred for in-furrow treatments of Aztec 2.1G and Force 3G (from 2.95 to 3.80 for Aztec, and from 2.65 to 3.65 for Force). In 1995, the performance of Counter 15G at Monmouth was suspect when applied in a band or in-furrow, resulting in root ratings of 3.40 and 3.50, respectively. Monmouth received moderate levels of precipitation during 1995, and the spring was very cool (almost identical to 1997). Overall these data seem to suggest that low to moderate levels of precipitation in a very cool growing season can lead to increased levels of rootworm larval injury. Impressive densities of corn rootworm larvae and early planting would only worsen the severity of economic losses. During 1997, our trials at Monmouth and Urbana were planted on May 13 and May 6, respectively, late by today's standards. Yet, persistence of several compounds was evidently a problem by late July. By planting in mid-April,

**Table 1. Soil insecticide efficacy data[1] for DeKalb, Monmouth, and Urbana, Illinois, 1988–1997**

| | Locations and years | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Soil insecticides* | *D.88[2]* | *D.89[3]* | *U.90[4]* | *D.91[5]* | *M.91[6]* | *U.91[7]* | *M.92[8]* | *U.92[9]* | *U.93[10]* | *U.94[11]* | *M.95[12]* | *U.96[13]* | *M.97[14]* | *U.97[15]* |
| Aztec 2.1G (b) | x.xx[16] | x.xx | 2.50 | 2.40 | 2.10 | 2.40 | 2.40 | 2.85 | 2.25 | 2.70 | 2.30 | 2.90 | **4.30*** | **3.15*** |
| Aztec 2.1G (f) | x.xx | x.xx | x.xx | 2.45 | x.xx | 2.85 | 2.55 | **3.70*** | 2.45 | 2.80 | 2.55 | **3.80*** | **3.80*** | **3.10*** |
| Counter 15G (b) | 2.40 | 2.60 | 1.90 | 2.70 | 2.10 | 2.00 | 2.70 | 2.30 | 1.85 | 2.30 | **3.40*** | x.xx | x.xx | x.xx |
| Counter 15G (f) | 2.30 | 2.80 | 2.00 | 2.75 | 2.35 | 2.15 | 2.33 | **3.10*** | 2.05 | 2.40 | **3.50*** | x.xx | x.xx | x.xx |
| Counter 20CR (b) | x.xx | x.xx | 2.00 | 2.75 | 2.05 | 2.15 | 2.60 | 2.25 | 1.90 | 2.70 | 2.40 | 2.90 | **4.47*** | 2.85 |
| Counter 20CR (f) | x.xx | x.xx | 2.20 | 2.60 | 2.90 | 2.55 | 2.48 | **3.35*** | 2.15 | 2.60 | 2.45 | 2.68 | **3.93*** | 2.85 |
| Dyfonate 20G (b) | 2.85 | x.xx | x.xx | 2.40 | 2.90 | 2.80 | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx |
| Dyfonate II 20G (b) | x.xx | **3.25*** | 2.60 | x.xx | x.xx | x.xx | 2.90 | **3.35*** | 2.25 | x.xx | x.xx | x.xx | x.xx | x.xx |
| Force 1.5G (b) | 2.95 | 2.87 | 2.10 | 2.35 | 2.60 | 2.70 | 2.52 | 2.40 | 2.60 | 2.90 | x.xx | x.xx | x.xx | x.xx |
| Force 1.5G (f) | **3.00*** | **3.05*** | 2.20 | 2.30 | 2.48 | 2.95 | 2.75 | 2.90 | 2.40 | **3.20*** | x.xx | x.xx | x.xx | x.xx |
| Force 3G (b) | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | 2.80 | 2.55 | 2.65 | **3.60*** | **3.45*** |
| Force 3G (f) | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | **3.20*** | 2.60 | **3.65*** | x.xx | x.xx |
| Fortress 2.5G (b) | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | **3.10*** | x.xx | 2.05 | x.xx | x.xx |
| Fortress 5G (b) | x.xx | 2.45 | x.xx | x.xx | x.xx | **3.65*** | x.xx | x.xx | x.xx | x.xx | x.xx | 2.45 | **4.80*** | **3.35*** |
| Fortress 5G (f) | x.xx | 2.55 | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | x.xx | 2.34 | **4.75*** | 2.54 |
| Lorsban 15G (b) | 2.85 | **3.20*** | 2.20 | 2.70 | 2.65 | 2.53 | x.xx | **3.25*** | 2.75 | 2.80 | x.xx | 2.70 | **4.75*** | 2.95 |
| Thimet 20G | **3.15*** | **3.35*** | 2.90 | **3.33*** | **4.60*** | 2.20 | **3.20*** | **3.60*** | **3.15*** | 2.40 | **4.45*** | **3.10*** | x.xx | **3.60*** |
| Check | 5.30 | 4.78 | 5.10 | 5.03 | 5.05 | 5.70 | 4.95 | 4.85 | 5.82 | 5.50 | 5.33 | 5.15 | 5.18 | 5.25 |
| Rainfall (inches)[17] | 2.89 | 5.83 | 18.10 | 10.16 | 4.24 | 12.01 | 7.03 | 14.88 | 11.72 | 3.90 | 8.08 | 12.36 | 7.27 | 7.83 |
| Heat units (base 52°F)[18] | 1863 | 1552 | 1667 | 1836 | 1934 | 2249 | 1449 | 1630 | 1673 | 1849 | 1491 | 1779 | 1429 | 1437 |
| Heat units (base 52°F)[19] | 598 | 490 | 470 | 602 | 585 | 753 | 390 | 475 | 402 | 430 | 249 | 416 | 222 | 224 |

[1] Iowa State University 1-to-6 root-rating scale (Hills and Peters 1971)
[2] Planting date–May 5, 1988; root evaluation date–July 13, 1988, DeKalb, IL
[3] Planting date–May 8, 1989; root evaluation date–July 12, 1989; Fortress 5G applied at 6.1 oz product/1,000 row ft, DeKalb, IL
[4] Planting date–May 8, 1990; root evaluation date–July 12, 1990; Aztec 2.1G applied at 7.0 oz product/1,000 row ft, Urbana, IL
[5] Planting date–May 10, 1991; root evaluation date–July 22, 1991; Aztec 2.1G applied at 7.0 oz product/1,000 row ft, DeKalb, IL
[6] Planting date–May 9, 1991; root evaluation date–July 15, 1991; Aztec 2.1G applied at 7.0 oz product/1,000 row ft, Monmouth, IL
[7] Planting date–May 2, 1991; root evaluation date–July 11, 1991; Aztec 2.1G and Fortress 5G applied at 7.0 oz and 3.0 oz product/1,000 row ft, respectively, Urbana, IL
[8] Planting date–April 30, 1992; root evaluation date–July 13, 1992, Monmouth, IL
[9] Planting date–May 5, 1992; root evaluation date–July 24, 1992, Urbana, IL
[10] Planting date–May 13, 1993; root evaluation date–July 14, 1993, Urbana, IL
[11] Planting date–May 13, 1994; root evaluation date–July 18, 1994, Urbana, IL
[12] Planting date–May 31, 1995; root evaluation date–July 18, 1995, Monmouth, IL
[13] Planting date–May 20, 1996; root evaluation date–August 2, 1996, Urbana, IL
[14] Planting date–May 13, 1997; root evaluation date–August 6, 1997, Monmouth, IL
[15] Planting date–May 6, 1997; root evaluation date–July 24, 1997, Urbana, IL
[16] Root-rating data were not collected.
[17] Rainfall total (inches) from planting date through root evaluation date
[18] Heat-unit accumulation (base 52°F) using air temperatures from January 1 to July 31
[19] Heat-unit accumulation (base 52°F) using air temperatures from January 1 to May 31

producers should continue to expect performance problems under the environmental parameters described previously.

*Are some soil insecticides more consistent performers?* Table 1 reveals that some soil insecticides are more consistent performers than others. Consistency should be interpreted as how often a compound applied during planting keeps root injury below an average rating of 3.0. A rating of 3.0 on the Iowa State root-rating scale is still considered by many entomologists as the economic-injury index. However, depending upon a range of variables (including environmental conditions, planting date, hybrid, cost of an insecticide, and the market price of corn), a rating of 3.0 may or may not lead to economic losses. Troubleshooting costs begin to escalate for sales and technical service representatives for insecticide-manufacturing companies most often when producers notice lodging in their fields. Typically, lodging problems begin to escalate when root ratings for a field average 4.0 (one node of roots destroyed).

*Is the use of certain soil insecticides more likely to result in ratings that range from 3.0 to 4.0?* Counter and Thimet, both manufactured by American Cyanamid Co., Princeton, New Jersey, differ considerably in their consistency of performance. Water solubilities of terbufos (15 ppm) and phorate (50 ppm) are similar. Inherent toxicities of each compound also are in a similar range (acute oral $LD_{50}$ values; terbufos = 4.5 to 9 mg/kg, phorate = 2 to 4 mg/kg), and both products are systemic.

Consistency of performance between these products could not be more different. Formulations of Counter (15G and 20CR) applied in-furrow or as a band (7-inch) kept root injury below a rating of 3.0 in U of I experimental trials 87 percent of the time (40/46; Table 1). In contrast, Thimet 20G maintained acceptable levels of root protection (rating below 3.0) only 23 percent of the time (3/13). Bottom line—insecticide choice does make a difference when it comes to purchasing consistency of performance.

*Is the use of a soil insecticide a "sure thing" when it comes to root protection against corn rootworms?* No. In the real world, the use of a soil insecticide each spring is like a roll of the dice. However, producers realize they throw the dice each season they plant a crop—not much different than an annual trip to Las Vegas.

*Can the odds be improved regarding the performance of a soil insecticide each year?* **Yes**. Although we know that producers will not alter their planting dates to enhance the performance of soil insecticides against corn rootworms, they also need to be aware that delivering a soil insecticide at planting in mid-April increases the odds of a root rating of 3.0 or beyond "rolling out" on the "craps table." **In mid-April, apply a soil insecticide in-furrow, and you're even more likely to roll dice with root ratings of 3.0 or beyond**. The application of a product, as early as mid-April, with a history of persistence problems, would suggest that producers are really beginning to stack the odds in favor of the rootworm. Environmental conditions such as a very cool spring followed by low to moderate rainfall throughout the growing season will only exacerbate performance problems of soil insecticides. Add to this scenario impressive densities of corn rootworms, and you have the 1977 growing season.

Finally, producers should not abandon their use of soil insecticides. Despite the general performance problems associated with 1997, several of the soil insecticides have performed consistently in our trials during the past 10 years. To be sure, none of the products offer a sure thing each season. But producers are inherently aware of the risks involved each season in providing the world with an abundant supply of food. Managing *some* of the risks associated with the use of soil insecticides is under the control of producers; other environmental and biological variables will never be.

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

## *Bt*-Corn and Livestock

I have received a handful of reports about growers concerned that cattle and hogs are not consuming *Bt*-corn, either in feed or as they forage in the fields. During the weeks of April 6 and April 13, several of these reports rolled into my e-mail in-box, and I get the sense that what might have begun as testimonial or rumor has taken on the cloak of "fact." Rick Weinzierl, Extension entomologist in the Department of Crop Sciences, also has received at least one report that cows are not eating *Bt*-corn stalks, and may be eating less ground ear corn, whole shelled corn, or ground shelled corn from hybrids that express the *Bt* endotoxin.

Rick and I both have replied to these questions by stating that none of the scientific literature supports the claim that cattle and hogs will not eat or will eat less *Bt*-corn. Nor has either of us heard this issue discussed at the many meetings we have attended. Not much, if any, *Bt* endotoxin is produced in the grain of *Bt*-corn hybrids. We believe that this issue is based upon rumor and should be given no credence unless scientifically proven otherwise.

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

## Scout for Alfalfa Weevils in the Southern Half of Illinois

As of April 13, at least 200 heat units had accumulated from January 1 above a base temperature of 48°F (Figure 2) in all counties south of a line from southern Adams County on the west side of the state to southern Vermilion County on the east side of the state. An early peak of third-stage larvae from overwintering eggs should have occurred in any area where accumulated heat units have exceeded 325 (probably anywhere south of Salem in Marion County, Figure 2). By April 27, enough heat units will have accumulated from April 13 to exceed 200 statewide (Figure 3). Figure 3 projects accumulated heat units (above 48°F) from April 13 to April 27, 1998, not total heat units accumulated from January 1. To derive the total heat-unit accumulation from January 1, add the numbers in Figure 3 to the numbers in Figure 2.

Reports from entomologists at the University of Kentucky and at Purdue University (southern Indiana) indicate that feeding injury by alfalfa weevil larvae is evident. Reports from Pioneer Hi-Bred International agronomists in southern Illinois also indicate that alfalfa weevils are active in southern counties. Thus far, the level of injury observed has been quite low.

If you have not already done so, scouting for this key pest in alfalfa should commence immediately in any alfalfa field south of I-70. We suggest scouting in a U- or M-shaped pattern, or any other pattern that allows you to obtain a representative sample from the field. To avoid biasing what you find, select alfalfa stems randomly when you are looking for injury and larvae. Selecting only injured plants will not provide an accurate representation of the average level of injury in the field.

Select at least 30 stems along your sampling route, measure the height of

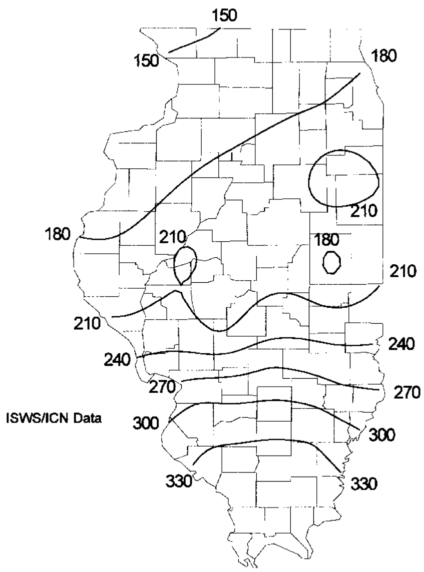


*Figure 2. Actual heat-unit accumulation (base 48°F) January 1 to April 13, 1998.*

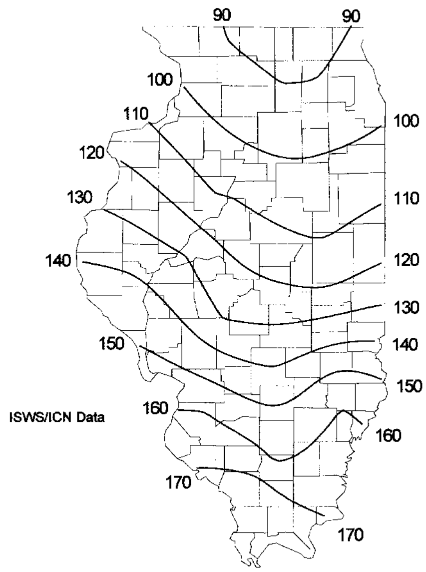


*Figure 3. Projected heat-unit accumulation (base 48°F) April 13 to April 27, 1998.*

the stems, and count the number of alfalfa weevil larvae per stem. An easy way to do this is to break off the selected stems at their base and place them tipside down in a plastic bucket. After all stems have been collected, the weevil larvae can be shaken free by gently beating the stems against the sides of the bucket. Also, a subsample of 10 of the 30 stems can be measured. An insecticide application might be justified if 25 to 50 percent of the tips are being skeletonized and there are three or more larvae per stem. The range in percentage skeletonization is based upon stem height; taller, more rapidly growing alfalfa usually can tolerate more weevil injury than shorter plants with less foliage. A threshold created by a former researcher at Purdue University suggests that a long-residual insecticide would be warranted when 400 heat units have accumulated (from January 1, above a base of 48°F), the alfalfa is 9 or more inches tall, and 50 percent of the stem tips have been fed upon.

Insecticides suggested for control of alfalfa weevil larvae include *Ambush 2E at 12.8 oz per acre, *Baythroid 2 at 1.6 to 2.8 oz per acre, *Furadan 4F at 1/2 to 1 pt per acre, Imidan 70WP at 1-1/3 lb per acre, Lorsban 4E at 1 to 2 pt per acre, *Penncap-M at 2 to 3 pt per acre, *Pounce 3.2EC at 8 oz per acre, and *Warrior 1EC (recently labeled for use on alfalfa) at 2.56 to 3.84 oz per acre. Products preceded with an asterisk are restricted-use insecticides. In our efficacy trial in 1997, Baythroid, Furadan, and Warrior all provided at least 90 percent control for 14 days. If you decide an insecticide is necessary for control of alfalfa weevils, please carefully abide by all label directions and precautions.

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

# WEEDS

## Axiom Receives Label

**Axiom 68DF** received a federal label April 8 for application in corn (field, silage) and soybean-production systems. Axiom is a premix herbicide containing both grass **(fluthiamide, 0.544 lb ai)** and broadleaf **(metribuzin, 0.136 ls ai)** components, which controls mainly annual grass species and some small-seeded broadleaves.

Axiom may be applied preplant (up to 45 days before planting corn or 14 days before planting soybeans), preplant incorporated (up to 14 days prior to planting), and preemergence (before weed or crop emergence). Corn and soybean should be planted a minimum of 1 to 1.5 inches deep. Axiom rates for use in corn are based on soil texture and organic-matter content, as well as application timing, and range from 13 to 23 ounces per acre. Use rates for soybeans range from 7 to 13 ounces. According to the label, the 13-ounce rate will provide full-season control of certain annual grasses and broadleaves in coarse-textured soils but will provide only early season control in medium- and fine-textured soils. Rates less than 13 ounces will provide only early season weed control on all soil textures. Numerous tank-mix partners are labeled for application with Axiom in corn and soybean systems.

**Aaron Hager (hagera@idea.ag.uiuc.edu) and Marshal McGlamery (mmcglame@ uiuc.edu), Department of Crop Sciences, (217)333-4424**

## Select Labeled for Use in Alfalfa

**Select (clethodim) 2EC** from Valent may now be applied to alfalfa (seedling or established) grown for seed, hay, silage, green chop, or direct grazing, to control certain annual grass species. Use rates range from 6 to 8 fluid ounces, and applications should include a crop-oil concentrate at one percent v/v. Do not apply Select within 15 days of grazing, feeding, or harvesting alfalfa for hay or forage, nor plant rotational crops until 30 days after application. Select may be tank-mixed with 2,4-DB for control of certain broadleaf weeds, but this tank mix can result in crop injury. If Select is applied with 2,4-DB, the feeding, grazing, and harvesting restrictions increase to 60 days.

**Aaron Hager (hagera@idea.ag.uiuc.edu) and Marshal McGlamery (mmcglame@ uiuc.edu), Department of Crop Sciences, (217)333-4424**

### Knockdown of Existing Vegetation in No-Tillage Systems

The unusually mild winter has allowed many annual weeds to flourish in untilled areas. Given the delays in early preplant herbicide applications due to wet fields, much of the existing vegetation has attained considerable size. In most situations, producers should plan to control existing vegetation prior to planting no-till corn or soybeans.

Several soil-applied herbicides used in corn and soybeans have both soil and foliar activity. This foliar activity can provide some control of small annual weeds. In corn, products such as atrazine or cyanazine or premixes containing these herbicides can provide control of small weeds. In soybeans, metribuzin (Sencor or Lexone, in Canopy and Turbo), Authority Broadleaf/Canopy XL, and Pursuit all have foliar activity and can be applied prior to planting.

Keep in mind that these herbicides can afford some control of **small** annual weeds, especially when applied with a crop-oil concentrate or liquid nitrogen solution. If existing vegetation is larger than 2 to 3 inches, plan to add another herbicide to improve the knockdown activity. 2,4-D LV ester at one pint per acre can be added to most corn or soybean preplant herbicides if applications are made at least one week before planting. Banvel or Marksman may be applied with other preplant corn herbicides, while Assure II or Matador, Fusion, Poast Plus or Prestige, and Select may be tank-mixed with preplant soybean herbicides to improve annual grass control.

Gramoxone Extra, Roundup Ultra, or Touchdown 5 have foliar activity, but all lack any soil-residual activity. These herbicides are often tank-mixed with corn or soybean preplant herbicides to improve control of existing vegetation.

**Marshal McGlamery (mmcglame@uiuc.edu) and Aaron Hagera(hagers@idea.ag.uiuc.edu), Department of Crop Sciences, (217)333-4424**

### Roundup Ready Corn Available in 1998

Some corn hybrids with resistance to glyphosate will be available in 1998, however, quantities will be limited. For the 1998 growing season, only one postemergence application of glyphosate is allowed by label. This application must be made before corn reaches 24 inches in height or the V-6 stage, and the maximum rate for 1998 is 1 quart per acre.

**Aaron Hager (hagera@idea.ag.uiuc.edu) and Marshal McGlamery (mmcglame@uiuc.edu), Department of Crop Sciences, (217)333-4424**

## PLANT DISEASES

### Septoria Leaf Blight of Wheat

With the return of warmer weather to much of Illinois, farmers are beginning to notice discolorations of the lower leaves on wheat crowns. Many of these changes are normal physiological reactions of the plant to winter weather, but some are due to the presence of the Septoria fungus.

Septoria diseases of wheat are common throughout southern and, in some years, central Illinois. These diseases are typically not an economic problem unless the infections occur on the flag leaf or the leaf directly below the flag. Septoria diseases appear to have overwintered well this year due to lack of cold weather. So it's not unexpected to see plants affected by the disease.

Septoria leaf blight (or blotch) is characterized by light brown, lens-shaped lesions on the older leaves. The centers of these lesions may have dark black specks embedded in them. The specks are the fruiting structures of the fungus. The lesions themselves are usually light yellow in color initially and then turn brown as the lesions age and the tissues die. Some lesions may lie along the leaf edge and appear as long brown streaks.

Control of Septoria leaf blight at this time is not recommended, given the cost and a lack of economic return. Several fungicides are labeled, but their use should be directed toward protecting the flag leaf rather than the early crown leaves. Examine the new growth; if these leaves are green and healthy, no management is needed.

**Walker Kirby (kirbyw@mail.aces.uiuc.edu), Extension Plant Pathology, (217)333-8414**

### Wheat Viruses

We have received very few calls in the past week about wheat virus problems. Traveling through northern Arkansas and southern Missouri and into Illinois about 10 days ago, I did not observe what appeared to be serious virus problems in fields. Some areas of wheat fields in northern Arkansas had discolored areas that could have been soilborne mosaic virus (SBMV), but my Interstate windshield scouting techniques did not permit time to accurately assess the situation in detail.

If soilborne mosaic virus is present, warmer weather will cause the symptoms to disappear. This virus is active in cooler soils and especially in low-lying areas where soils stay wet. The vector of SBMV is a fungus that prefers wet and cool soils. Symptoms are most prevalent during cooler periods and usually disappear when warm weather returns. Symptoms include yellowing or other discoloration of the leaves, and possible stunting of the plants. If warmer weather does not cause a change in the plant's appearance, then some other virus is present and further lab testing may be desirable to determine its identity. If the new growth is green and healthy, then the problem is usually SBMV. However, no control measures are available for viruses, beyond selection of resistant varieties.

**Walker Kirby (kirbyw@mail.aces.uiuc.edu), Extension Plant Pathology, (217)333-8414**

**CES Newsletter Service**
**University of Illinois at Urbana-Champaign**
**69 Mumford Hall**
**1301 West Gregory Drive**
**Urbana, IL 61801**

**Presorted First Class Mail**
**U.S. Postage Paid**
**Permit No. 75**
**Champaign, IL**

**Return Service Requested**

## Gaucho Insecticide for Seed Corn Production

The Illinois Department of Agriculture has declared a crisis exemption under Section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act for the use of Gaucho 480 Flowable Insecticide (imidacloprid) to control Stewart's wilt in inbred corn in Illinois. The effective dates are from 12:01 a.m., April 10, to 11:59 p.m., April 25, 1998. The application rate shall be 8 to 16 fluid ounces per hundredweight of seed prior to planting.

**Walker Kirby (kirbyw@mail.aces.uiuc.edu), Extension Plant Pathology, (217)333-8414**

ACES

*The Pest Management & Crop Development Bulletin* is brought to you
by the Cooperative Extension Service
and Information Technology and Communication Services,
College of Agricultural, Consumer
and Environmental Sciences,
University of Illinois at Urbana-Champaign;
and the Natural History Survey, Urbana, IL.
This newsletter is edited by Mary Overmier
and formatted by Oneda VanDyke,
ACES/ITCS.

Helping You Put Knowledge to Work
State • County • Local Groups
U.S. Department of Agriculture Cooperating