

WISCONSIN PEST BULLETIN

Timely crop pest news, forecasts, and growing season conditions for Wisconsin



STATE OF WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE AND CONSUMER PROTECTION PLANT INDUSTRY BUREAU
2811 Agriculture Dr. Madison, WI 53718 • <http://pestbulletin.wisconsin.gov>

WEATHER & PESTS

Humid, summery weather prevailed, favoring late-season planting and accelerating crop development. Afternoon temperatures were the warmest of the year so far, with highs on June 9 exceeding 90°F at Monroe, La Crosse, Mineral Point, Platteville and several other locations. Periods of rain boosted soil moisture supplies, which averaged 91% adequate or surplus statewide at the start of the week, while above-normal temperatures promoted rapid growth of field, fruit and vegetable crops. During the second half of the week, temperatures cooled to the 70s and several rounds of showers and thunderstorms brought heavy rainfall to Wisconsin. Crop prospects generally continued to improve with the heat and precipitation, and the latest USDA NASS report rates 84-95% of the state's corn, oats, potatoes and soybeans in good to excellent condition.

LOOKING AHEAD

TRUE ARMYWORM: Surveys indicate larval populations in corn remain below economically significant levels, but continued scouting for localized infestations is recommended. Some fields have an abundance of grassy weeds favorable for armyworm development and late herbicide treatments at these sites could force the larvae from the grasses onto corn plants.

EUROPEAN CORN BORER: The most advanced corn is now susceptible to infestation by first-generation corn borers. Leaf feeding and small larvae were observed in the past week on 2-6% of plants in Dane, Jackson, La Crosse, Monroe and Sauk counties. Early signs of damage, including leaf pinholes and shot holes, should be noticeable in southern and central Wisconsin fields in the week ahead.

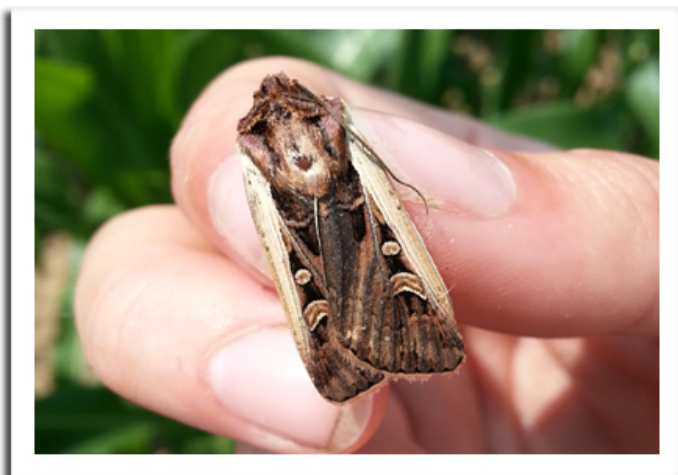
SOYBEAN APHID: Early colonies were observed for the first time this season on June 1 in La Crosse County. Surveys this week detected aphids in only four of 67 fields sampled. Densities were low and ranged from 1-32 per infested plant on 1-6% of plants. The aphids were found in Juneau and La Crosse counties.

POTATO LEAFHOPPER: Nymphs are appearing in alfalfa. Counts of this stage and the adults are still below the economic threshold of one per sweep in 8- to 11-inch fields and two per sweep for alfalfa 12 inches or taller, though reproduction could increase abruptly in response to warm June weather. Regular sampling of second-crop alfalfa is advised.

STALK BORER: Migration of stalk borer larvae from grasses and broadleaf weed hosts into corn is expected to accelerate next week. Spot treatment may be warranted for fields that show 5% of plants with leaf feeding. Damage should become pronounced by late June.

EASTERN TENT CATERPILLAR: Pupation has begun in advanced areas of southern Wisconsin. The first moths may begin appearing at lights and in black light traps in the next two weeks.

WESTERN BEAN CUTWORM: Pheromone traps are now being set in preparation for the annual moth flight. Participants in the western bean cutworm monitoring program are reminded to begin reporting counts to Tracy Schilder at tracy.schilder@wisconsin.gov by June 17 and each Wednesday during the 10-week trapping survey.



Western bean cutworm moth

u.osu.edu

DEGREE DAYS JANUARY 1 - JUNE 10

| LOCATION | 50°F | 2014 | NORM | 48°F | 40°F |
|--------------|------|------|------|------|------|
| Dubuque, IA | 804 | 685 | 719 | 807 | 1309 |
| Lone Rock | 761 | 636 | — | 768 | 1226 |
| Beloit | 793 | 702 | 728 | 792 | 1289 |
| Sullivan | 579 | 504 | 665 | 589 | 984 |
| Madison | 737 | 617 | 691 | 741 | 1185 |
| Juneau | 654 | 547 | — | 666 | 1075 |
| Racine | 518 | 465 | — | 535 | 934 |
| Waukesha | 579 | 504 | — | 589 | 984 |
| Milwaukee | 526 | 472 | 570 | 542 | 936 |
| Hartford | 579 | 504 | — | 589 | 984 |
| Appleton | 599 | 480 | — | 610 | 1015 |
| Green Bay | 521 | 424 | 573 | 547 | 935 |
| Big Flats | 695 | 559 | — | 678 | 1062 |
| Hancock | 695 | 559 | 678 | 678 | 1062 |
| Port Edwards | 665 | 529 | 659 | 661 | 1051 |
| La Crosse | 786 | 627 | 767 | 801 | 1282 |
| Eau Claire | 674 | 530 | 677 | 681 | 1125 |
| Cumberland | 587 | 437 | 605 | 582 | 965 |
| Bayfield | 398 | 291 | — | 376 | 647 |
| Wausau | 567 | 439 | 591 | 562 | 916 |
| Medford | 543 | 417 | 530 | 537 | 891 |
| Crivitz | 483 | 402 | — | 482 | 829 |
| Crandon | 485 | 381 | 473 | 463 | 763 |

Method: ModifiedB50; Sine48; ModifiedB40 as of Jan 1, 2015. NORMALS based on 30-year average daily temps, 1981-2010.

FORAGES & GRAINS

ALFALFA WEEVIL: Larval counts in southern and central Wisconsin have declined due to pupation and harvest of first-crop alfalfa. Carryover of larvae into the second crop is common, although averages in 8- to 16-inch regrowth are below one per sweep and leaf tip damage is generally less than 20%. Most weevils are in the third and fourth instars and should pupate within the next two weeks. Routine scouting is suggested until the second crop is established or the weevil season has passed.

MEADOW SPITTLEBUG: Spittle masses first appeared five weeks ago and late-instar nymphs are now the predominant development stage. Adult spittlebugs should begin collecting in alfalfa sweep nets by late June. A population of one or more nymphs per stem may interfere with harvest operations, but infestations of this level are rare in Wisconsin.

POTATO LEAFHOPPER: Counts for the period of June 4-10 were low and ranged from only 0-0.2 per sweep,

with the highest average found in Lafayette County. Nymphs, which can be an indicator of population increase, were swept from three of the 29 fields sampled.

PLANT BUG: Alfalfa fields across southern Wisconsin are showing low populations of 0.1-0.8 per sweep. The economic threshold is five per sweep. Nymphs are currently more abundant than adults in most fields.

PEA APHID: Numbers in alfalfa have not changed significantly since the last report. Counts in 29 fields surveyed from Grant to Kenosha County ranged from 1-15 per sweep and averaged six per sweep, which is normal for this time of year. Pea aphid populations in alfalfa usually peak by mid-June and then decline in July.

CORN

EUROPEAN CORN BORER: The spring flight of moths has likely peaked across the southwest, south-central and

west-central areas. Black light trap counts have been extremely low since the flight began in late May, with only 2-10 moths collected at Arlington, Janesville, Pardeeville and Ripon during the June 4-10 reporting period. Oviposition is occurring on corn, snap beans, potatoes and weed hosts, and leaf feeding by first instar larvae should be noticeable in the tallest non-Bt corn in the week ahead.

STALK BORER: Larvae varying in size from ½-¾ inch were the cause of light leaf injury to 1-4% of the edge row plants in corn in Dodge, Fond du Lac, Jackson, La Crosse, Monroe and Winnebago counties. Similar levels of infestation were found last week in Richland and Sauk counties. The migration of stalk borers from grass and broadleaf weed hosts into corn is increasing and spot treatment may be warranted by late June for fields showing 5% of plants with damage. As a reminder, most Bt corn hybrids will suppress but not completely control stalk borers, so regular scouting will be necessary through the V7 stage.



Stalk borer leaf feeding

Krista Hamilton DATCP

BLACK CUTWORM: The threat from this early-season pest has largely subsided, but isolated problems could develop in later planted corn. Scouting may be discontinued once plants reach the V5 stage.

TRUE ARMYWORM: Larval infestations ranged from 1-10% in corn surveyed this week. These averages are low in comparison to the economic threshold of 25% of plants infested with two or more small larvae (¾ inch or shorter), but the large flights of 102-289 moths per week documented since mid-May indicate a strong potential for damaging levels of armyworms this month. Continued scouting of corn and small grains is advised.

LEAFROLLER: Minor populations of an unidentified leafroller have been observed or reported on corn in Dunn, Portage, Rusk and Waushara counties since early June. Damage caused by this caterpillar is probably inconsequential and mainly a curiosity, though populations appear to be higher than normal this season.



Leafroller found on corn

Mike Weiss Monsanto

SOYBEANS

SOYBEAN APHID: Surveys of VC-V3 soybeans found aphids in only four of 67 (6%) fields sampled during the week ending June 10. Densities ranged from 1-32 aphids per infested plant on 1-6% of plants based on 100 plants examined. Specific counties in which the aphids were detected were Juneau and La Crosse. Early colonies were also found in Iowa and La Crosse counties last week, suggesting that the aphids are dispersing to soybeans in southern and western Wisconsin.



Soybean aphids

Krista Hamilton DATCP

BEAN LEAF BEETLE: Light defoliation was observed at 63% of sites surveyed in the southern half of the state. Despite the prevalence of feeding injury, less than 10% of soybean plants were affected in the infested fields and very few beetles were found. Treatment specifically for this pest is seldom justifiable, but could be considered in the rare event that defoliation exceeds 30% or for populations of 39 or more beetles per foot of row during the vegetative stages.

DEFOLIATORS: An assortment of minor defoliators can be found at very low levels in many soybean fields. Included in this category are the green fruitworm, grasshopper nymphs and true armyworm, all of which were noted on fewer than 1% of plants examined in fields surveyed this week. Pre-bloom soybean fields with combined defoliation rates of 30% or more may be candidates for treatment, though defoliation in vegetative stages seldom results in yield loss, especially when soil moisture, temperatures and other growing conditions are favorable. Soybeans in the reproductive (bloom) stages are more sensitive to defoliation.



Green fruitworm on soybean

Krista Hamilton DATCP

FRUITS

CODLING MOTH: Many southern and central Wisconsin apple orchards are approaching 250 or more degree days (modified base 50°F) beyond the first biofix, and treatments for first generation larvae are expected to start soon. Early larvicide applications made at the traditional 250 degree-day point coincide with 3% hatch and are appropriate for orchards that register high trap counts (10-15 moths) in the first week after biofix. By contrast, apple orchards with initially low moth counts that

increase later in the flight may benefit from delaying treatment until 350 degree days after biofix, or 15% hatch. Treating at this later window theoretically exposes more newly hatched larvae to the insecticide product.

Apple growers are reminded that reapplication may be necessary if heavy rainfall of two or more inches is received and trap counts are consistently above five moths per trap per week. Applying materials at a higher rate may provide extended protection from rain and a longer reapplication interval, according to Orchard IPM Specialist, John Aue.

REDBANDED LEAFROLLER: Moth counts were extremely low again this week, ranging from 0-22 per trap. The average was only two per trap. The low number of RBLR moths appearing in traps since late May suggests that populations are still primarily in the larval stages or that earlier control was very effective. The second flight is likely to begin in the next two weeks.

GRAPE PHYLLOXERA: First generation phylloxera leaf galls are appearing on foliage in Monroe and Vernon counties, on the varieties Frontenac and Frontenac gris. This observation suggests that monitoring for egg hatch should begin. Control of the first generation is usually ineffective once the galls have formed, but scouting for the mobile crawlers will help to determine the timing and need for management of the second and third generations later this season. A 10x hand lens is required to view the crawlers.



Grape phylloxera galls

Krista Hamilton DATCP

OBLIQUEBANDED LEAFROLLER: The first flight of moths increased this week and is expected to continue through early July. Apple growers who have experienced OBLR

problems in recent years should consider setting additional traps to determine specific blocks or varieties in which to direct sampling and control efforts. Monitoring terminals over the next 2-3 weeks for the second brood of larvae will also indicate the potential for problems later this season.

LESSER PEACHTREE BORER: Counts ranging as high as 20-57 moths per trap per week suggest the first of two flights has peaked. Control of lesser peach tree borers (LPTB) in orchards is based on preventing larval establishment underneath the bark and should be timed just before or to coincide with egg hatch. Once under the bark, chemical control is ineffective. LPTB egg hatch begins about 8-10 days after moth emergence, thus the treatment window is 7-14 days after the first moths are captured in pheromone traps. Directed sprays must be applied uniformly to drench the trunk and scaffold limbs to about eight feet above-ground.

Orchards that record high LPTB trap counts are advised to begin checking for signs of infestation, such as presence of pupal skins, sawdust, and frass produced by feeding borers in the gum in cankered areas. If the gum does not contain frass or sawdust, the injury is probably not caused by borers. LPTB problems are almost always associated with *Cytospora* canker and, to a lesser extent, pruning wounds, winter injury, and mechanical damage. A second and more damaging flight can be expected in late August or September.



Lesser peachtree borer

Stuart Tingley birdingnewbrunswick.ca

PLUM CURCULIO: Continued scouting is recommended for another week and, if late immigration is suspected, a perimeter application may be beneficial. Distinguishing between new and old injury and determining the extent to

which PC has migrated into the orchard interior is particularly important if only perimeter sprays have been used as a barrier. An enlarging crescent-shaped scar or depression is typical of old injury. Organic options include maintaining a protective coating of Surround® WP (kaolin clay) on exposed blocks. The spring PC migration from overwintering sites into orchards is expected to end once 308 degree days (base 50°F) have accumulated from May 15 or McIntosh petal fall.



Plum curculio crescent-shaped oviposition scar

leereich.blogspot.com

SAN JOSE SCALE: Emergence of scale nymphs or “crawlers” is anticipated next week in southern orchard locations. Sampling by taping scaffold branches in blocks with history of damage is advised to determine the relative abundance of scales, the start and end of the hatching period, and if treatments are successful. The tape should be changed every 7-10 days during the period of crawler activity.

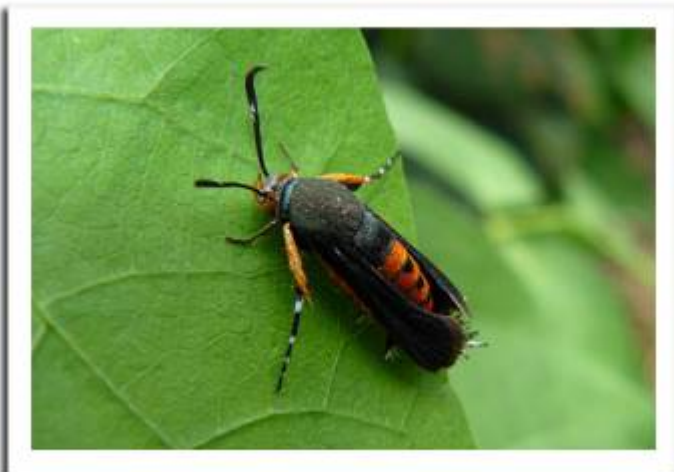
VEGETABLES

COLORADO POTATO BEETLE: Larvae in southern and west-central Wisconsin are primarily in the first and second instars. Bacterial insecticide treatments of *Bacillus thuringiensis* var. *tenebrionis* (Bt) are most effective at this time, while the larvae are very small. Most bacterial products persist only a few days and must be reapplied 2-3 times to effectively control populations. Treatment is recommended when 6-8 inch plants show 20-30% defoliation.

FLEA BEETLE: Damage to beets, leafy greens, potatoes and other vegetables has intensified in home gardens and larger plantings in southern Wisconsin. Treatment

can be considered for young plants when large numbers of beetles are present on all plants and defoliation exceeds 30%.

SQUASH VINE BORER: Moth emergence and egg laying can be expected by June 16 in advanced southern areas, about the time chicory blooms. Pumpkins, squash, gourds and other vine crops should be examined daily for eggs and evidence of larval boring from 900-1,000 degree days (simple base 50°F). Insecticidal controls must be applied to the stems of plants when the adults are first observed, especially while runners are less than two feet long. Repeat applications may be required throughout the three-week oviposition period.



Squash vine borer moth

D. Charvat '10 flickr.com

LATE BLIGHT: Disease severity value accumulations near Grand Marsh, Hancock and Plover have exceeded the late blight risk threshold, indicating environmental conditions are favorable for disease development. Home gardeners, whether conventional or organic, should consider preventative fungicide applications to protect their tomatoes and potatoes. No cases of late blight have been confirmed in Wisconsin as of June 10.

NURSERY & FOREST

AMBROSIA BEETLE: Damage to horse chestnut trees by an unidentified ambrosia beetle species was observed at a garden center in Green County. The inspector who found the infestation was unable to determine if the species involved was native or exotic. Native ambrosia beetles prefer stressed and weakened trees, while non-native species attack both stressed and healthy trees. Evidence of ambrosia beetle infestation is very distinctive

and appears as toothpick-like tubes of frass projecting from the tree trunk. Fungal staining from symbiotic fungi is often noticeable in the wood tissues surrounding the beetle's galleries. DATCP regulations require trees infested with these aggressive, destructive beetles to be removed from sale and destroyed.

APHID PREDATOR MIDGE: This beneficial, aphid-eating insect was found on birchleaf spirea 'Glow Girl' in Washington County. The larvae feed on over 70 aphid species, making them a popular biological control agent in greenhouses. The orange maggot-like larvae feed primarily at night and remain hidden on the undersides of leaves by day. Adult midges feed on aphid honeydew and deposit eggs in aphid colonies. There are three to six generations per year.

SPECKLED GREEN FRUITWORM: Larvae of the speckled species were found to be the cause of moderate to severe defoliation of linden trees in Monroe and Richland counties. Both this species and the humped green fruitworm are particularly abundant this season and have been observed on a variety of trees and shrubs (apple, ash, elm, euonymus, hackberry, maple, oak, peony, rose, serviceberry and spruce), according to the UW-Madison Insect Diagnostic Lab.



Speckled green fruitworm larvae on linden

Krista Hamilton DATCP

PINE SPITTLEBUG: Scotch pines at a nursery stock retailer location in Burnett County were heavily infested with this insect, easily recognized by its frothy, white spittle masses which provide protection for developing nymphs. The pine spittlebug infests conifers of all sizes, causing discoloration of branch tips. Eastern white pine, jack pine and Scotch pines are the preferred hosts.

Although this pest is generally only an aesthetic problem, treatment may be warranted in rare high-population situations. Applications of an appropriate insecticide should be made in late May and early June when the spittle masses are first noticed. The adults can also be targeted around mid-July, after 90% of the spittle masses have been vacated.



Pine spittlebug on Scotch pine

Konnie Jerabek DATCP

TAR SPOT: The pale yellow lesions appearing on maples in Dane, Grant and Rock counties are early symptoms of tar spot, a cosmetic fungal leaf spot disease. Infected foliage will soon develop raised, black, tar-like spots and severely diseased leaves may drop prematurely. Tar spot is an aesthetic disorder best controlled by clearing and destroying infected leaves in fall to prevent the spores from spreading. If treatment is justified, three fungicide applications are necessary for control: one at bud break, one when leaves are half expanded, and one when leaves are fully expanded.



Early symptoms of tar spot on Norway maple

Marcia Wensing DATCP

EMERALD ASH BORER: Adults are emerging across the southern two-thirds of Wisconsin and were observed on June 8 in Dane County. Beetle emergence typically begins when the black locust tree is in full bloom, or around 450 growing degree days (base 50°F). Degree day accumulations as far north as Crandon in Marinette County are beyond this threshold and most confirmed infestations in the state are experiencing initial beetle flight this week. Emerald ash borer adults can be observed feeding on ash leaves, on the bark of the main stem, or in the vicinity of ash trees. The metallic green beetles differ from similar green beetles by having a purple-red abdomen which is visible during flight.



EAB adults emerging from ash tree

Debbie Miller USDA Forest Service

GYPSY MOTH: *Bacillus thuringiensis* var. *kurstaki* (Btk) treatments were applied June 9 to approximately 1,540 acres in Bayfield and Douglas counties, marking the completion of all Btk spraying in the state for the 2015 season. Mating disruption, or pheromone flake treatment, is scheduled to begin before the end of June, with the bulk of treatments to be completed in July. Pheromone flakes reduce population levels by preventing gypsy moths from mating. Larval development has advanced to the sixth instar stage as far north as the Eau Claire area, while larvae in the second instar are still present in the northern counties.

The annual trapping survey is now about 55% complete, with 6,562 of the expected 12,000 traps set as of June 10. All pheromone traps intended for Clark, Columbia, Dodge, Green, Lincoln, Marathon, Marquette, Milwaukee, Pierce, Taylor, Waukesha and Wood counties have been set. The remaining 45% of traps should be in place by the first week of July.

APPLE INSECT & BLACK LIGHT TRAP COUNTS JUNE 4 - 10

| COUNTY | SITE | STLM ¹ | RBLR ² | CM ³ | OBLR ⁴ | APB ⁵ | LPTB ⁶ |
|-------------|---------------|-------------------|-------------------|-----------------|-------------------|------------------|-------------------|
| Bayfield | Keystone | 5 | 0 | 0 | 0 | — | — |
| Bayfield | Orienta | 7 | 0 | — | — | 0 | 0 |
| Brown | Oneida | 0 | 3 | 2 | 3 | 0 | 0 |
| Clark | Greenwood | 10 | 8 | 0 | 15 | — | 7 |
| Columbia | Rio | 31 | 0 | 15 | 12 | 0 | 9 |
| Crawford | Gays Mills | 25 | 0 | 0 | 11 | 0 | 27 |
| Dane | Deerfield | 64 | 0 | 16 | 16 | — | — |
| Dane | DeForest | 0 | 0 | 2 | 6 | 7 | 11 |
| Dane | Edgerton | 43 | 22 | 0 | 0 | 13 | 56 |
| Dane | McFarland | 67 | 0 | 7 | 0 | — | — |
| Dane | Mt. Horeb | 11 | 0 | 1 | 24 | 10 | 55 |
| Dane | Stoughton | 9 | 0 | 19 | 15 | 0 | 45 |
| Dane | West Madison | 40 | 8 | 22 | 32 | — | — |
| Fond du Lac | Campbellsport | 0 | 0 | 0 | 0 | 0 | 27 |
| Fond du Lac | Malone | 5 | 0 | 11 | 6 | 3 | 11 |
| Fond du Lac | Rosendale | 10 | 2 | 0 | 0 | 1 | 0 |
| Grant | Sinsinawa | 83 | 0 | 0 | 2 | — | — |
| Green | Brodhead | 0 | 0 | 1 | 19 | 34 | 21 |
| Iowa | Mineral Point | 81 | 9 | 18 | 31 | 6 | 52 |
| Jackson | Hixton | 1 | 0 | 9 | 11 | 1 | 39 |
| Kenosha | Burlington | 2 | 1 | 3 | 7 | 5 | 34 |
| Marathon | Edgar | 9 | 4 | 5 | 0 | 3 | 26 |
| Marinette | Niagara | 0 | 0 | 2 | 0 | 0 | 7 |
| Marquette | Montello | 35 | 0 | 4 | 14 | — | — |
| Ozaukee | Mequon | 0 | 0 | 6 | 0 | — | 5 |
| Pierce | Beldenville | 0 | 0 | 33 | 5 | 1 | 53 |
| Pierce | Spring Valley | 0 | 2 | 0 | 25 | 2 | 17 |
| Racine | Raymond | 17 | 5 | 6 | 2 | 1 | 32 |
| Racine | Rochester | 0 | 1 | 9 | 17 | 6 | 19 |
| Richland | Hill Point | 170 | 0 | 37 | — | 14 | 57 |
| Sheboygan | Plymouth | 0 | 0 | 5 | 0 | 0 | 20 |
| Walworth | East Troy | — | — | — | — | — | — |
| Walworth | Elkhorn | — | — | — | — | — | — |
| Waukesha | New Berlin | 6 | 0 | 11 | 6 | 6 | 36 |

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵American plum borer; ⁶Lesser peachtree borer.

| COUNTY | SITE | BCW ¹ | CEL ² | CE ³ | DCW ⁴ | ECB ⁵ | FORL ⁶ | SCW ⁷ | TA ⁸ | VCW ⁹ | WBC ¹⁰ |
|-------------|------------------|------------------|------------------|-----------------|------------------|------------------|-------------------|------------------|-----------------|------------------|-------------------|
| Columbia | Arlington | 0 | 4 | 0 | 17 | 2 | 2 | 13 | 3 | 1 | 0 |
| Columbia | Pardeeville | 0 | 5 | 0 | 0 | 10 | 0 | 39 | 5 | 2 | 0 |
| Crawford | Prairie du Chien | — | — | — | — | — | — | — | — | — | — |
| Fond du Lac | Ripon | 0 | 0 | 0 | 0 | 8 | 4 | 0 | 9 | 0 | 0 |
| Manitowoc | Manitowoc | 0 | 0 | 0 | 0 | 0 | 12 | 1 | 3 | 0 | 0 |
| Marathon | Wausau | — | — | — | — | — | — | — | — | — | — |
| Monroe | Sparta | — | — | — | — | — | — | — | — | — | — |
| Rock | Janesville | 0 | 7 | 0 | 0 | 5 | 0 | 3 | 54 | 0 | 0 |
| Walworth | East Troy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wood | Marshfield | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 10 | 0 | 0 |

¹Black cutworm; ²Celery looper; ³Corn earworm; ⁴Dingy cutworm; ⁵European corn borer; ⁶Forage looper; ⁷Spotted cutworm; ⁸True armyworm; ⁹Variegated cutworm; ¹⁰Western bean cutworm.