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# WISCONSIN PEST BULLETIN

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

**Wisconsin Department of Agriculture, Trade and Consumer Protection**
Division of Agricultural Resource Management | Bureau of Plant Industry
2811 Agriculture Dr., Madison, WI 53718 • http://pestbulletin.wisconsin.gov

## WEATHER & PESTS

Cooler weather with lower humidity levels maintained favorable yield prospects for summer crops in Wisconsin. Highs were below normal for early August and ranged from the 60s to lower 80s. Overnight lows on August 4 dropped to the upper 30s across the north-central region with 40s and 50s elsewhere. Aside from a few stray showers and a record rainfall of 4.8 inches set at Milwaukee on August 3 (the old record was 2.8 inches in 1960), much of the state remained dry. Soybeans continued to develop two weeks ahead of last year and 5 days ahead of average, with 63% of the crop setting pods, a 13 percentage point increase over the previous week. Although condition ratings for soybeans decreased by one percentage point, 83% of the crop was rated in the good to excellent categories at the start of the week, 14 points better than the at same time last year. The dry conditions and lack of extreme heat that dominated most of the week ending August 6 supported harvesting of alfalfa, potatoes, small grains and sweet corn, though rain was scarce in the central and western areas, and topsoil moisture is now 23-28% very short or short after the recent dry weather pattern.

## LOOKING AHEAD

CORN ROOTWORM: Beetle counts are mostly low or moderate for early August. Surveys in 61 grain corn fields in the southern, west-central and northwest areas found no detectable beetle population at 29 (46%) of sites. Twenty-one fields (34%) contained low adult rootworm populations ranging from 0.1-0.7 beetles per plant, while 12 (20%) of the sites had above-threshold averages of 0.75 or more beetles per plant. An exceptional field in Marathon County had an extremely high average of 5.6 beetles per plant. The official 2020 corn rootworm survey is now underway.

LILY LEAF BEETLE: Vilas County has been added to the list of Wisconsin counties with confirmed populations of the invasive lily leaf beetle. According to an inspector's report, the beetles were observed on Asiatic lilies near Eagle River on July 30. Lily leaf beetle was also recently detected in Brown, Calumet, Clark, Milwaukee, Outagamie, Vernon, Waukesha, and Waupaca counties, for a total of nine new county records this season. The addition of Vilas County brings the total number of infested Wisconsin counties to 21.

CORN EARWORM: A significant flight of 78 moths was registered at Arlington in Columbia County, while 12 other monitoring sites captured fewer than 10 moths for the week ending August 6. Pheromone traps have captured a cumulative total of 618 moths since migrants began arriving in July. Although the corn earworm flights recorded over the last four weeks have not been especially large (with the exception of the Arlington flights), fresh-

market sweet corn growers should continue to monitor silking sweet corn fields and follow corn earworm flight reports through early September.

Corn earworm larva Krista Hamilton DATCP

SOYBEAN APHID: Densities remain generally low. Although a few soybean fields have developed populations of 50-150 aphids per plant since late July, most fields have average counts below 20 aphids per plant. Final aphid treatments, if required, must be applied before the R5.5 growth stage to provide any economic benefit.

WESTERN BEAN CUTWORM: Trap counts have begun to decline at southern and central locations, signaling the end of the moth flight period. A total of 776 moths were captured July 30-August 5, compared to 1,589 the week before. The cumulative state count is now 3,455 moths in 58 traps, or an average of 60 per trap. Results of the 2020 survey are summarized in the map on page 119.

EUROPEAN CORN BORER: Summer moth emergence has peaked across the southern half of the state. Larval development is variable at this time, with 1st to 4th-instar caterpillars observed in the past week. Controls directed against second-generation larvae must be applied during the period after egg hatch and before the caterpillars bore into corn stalks and ears, prior to the accumulation of 2,100 degree days (modified base 50°F). The treatment window for second-generation larvae will close by August 20 in southern Wisconsin.

## DEGREE DAYS JANUARY 1 - AUG 5

| LOCATION | 50°F | 2019 | NORM | 40°F |
|---|---|---|---|---|
| *Dubuque, IA* | 2073 | 2044 | 1907 | 3269 |
| *Lone Rock* | 1851 | 1856 | — | 3004 |
| *Beloit* | 1938 | 1891 | 1936 | 3113 |
| *Sullivan* | 1785 | 1745 | 1829 | 2910 |
| *Madison* | 1891 | 1867 | 1846 | 3040 |
| *Juneau* | 1703 | 1677 | — | 2790 |
| *Racine* | 1727 | 1584 | — | 2838 |
| *Waukesha* | 1792 | 1713 | — | 2903 |
| *Milwaukee* | 1757 | 1653 | 1731 | 2863 |
| *Hartford* | 1666 | 1649 | — | 2745 |
| *Appleton* | 1745 | 1649 | — | 2814 |
| *Green Bay* | 1700 | 1603 | 1643 | 2746 |
| *Big Flats* | 1714 | 1642 | — | 2801 |
| *Hancock* | 1630 | 1578 | 1791 | 2690 |
| *Port Edwards* | 1637 | 1574 | 1756 | 2701 |
| *La Crosse* | 1874 | 1814 | 2018 | 3017 |
| *Eau Claire* | 1870 | 1721 | 1816 | 2987 |
| *Cumberland* | 1487 | 1457 | 1695 | 2502 |
| *Bayfield* | 1377 | 1263 | — | 2334 |
| *Wausau* | 1431 | 1385 | 1659 | 2431 |
| *Medford* | 1384 | 1356 | 1518 | 2385 |
| *Crivitz* | 1558 | 1497 | — | 2551 |
| *Crandon* | 1388 | 1368 | 1296 | 2344 |

*Method: Modified B50; Modified B40 as of January 1, 2020. NORMALS based on 30-year average daily temps, 1981-2010.*

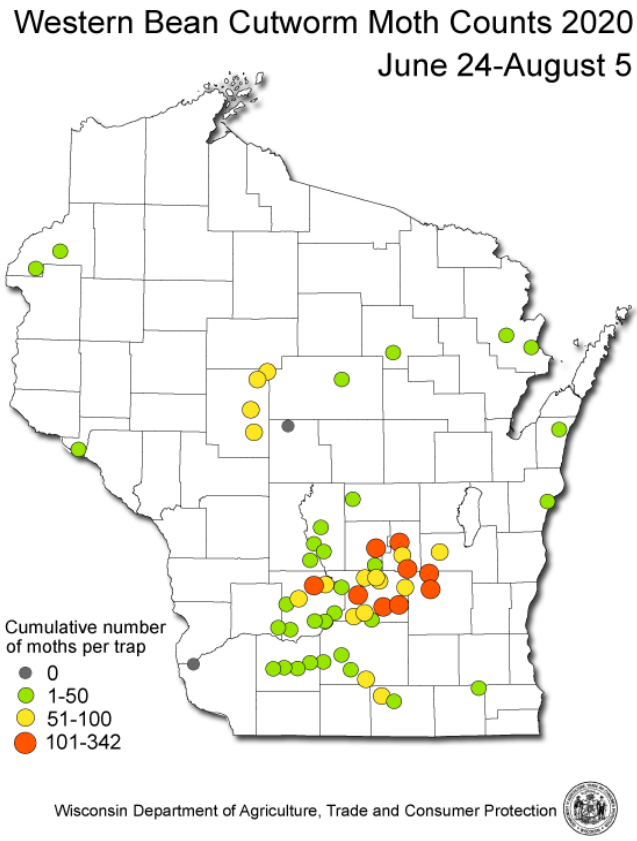
# CORN

CORN ROOTWORM: DATCP's annual beetle survey is now in progress. Counts in the 61 grain corn fields sampled July 30-August 1 were generally low to moderate, with 21 fields (34%) averaging from 0.1-0.7 beetles per plant and 29 (46%) of sites having no detectable beetle population. Above-threshold averages of 0.75 or more beetles per plant were observed at 12 (20%) of the sites, including very high counts of 3.0-5.6 beetles per plant recorded in Dodge, Green Lake and Marathon counties.

Corn producers should be aware of the potential for corn rootworm adults to redistribute from earlier silking fields to later-planted fields as beetle emergence continues. Now is the time to scout to determine this season's beetle pressure and to forecast the risk of larval root injury to continuous corn in 2021.

WESTERN BEAN CUTWORM: Moth counts have declined at southern and central monitoring locations. The trap in Green Lake County that captured 231 moths last week caught 67 this week, and numbers fell at 49 of DATCP's 58 monitoring sites. The network's total weekly capture of

776 moths is a sharp decrease from 1,589 last week when the flight peaked at many locations. As of August 6, the state cumulative total is 3,455 moths in 58 traps (60 per trap average.) The highest individual count for the seven-week monitoring period is 342 moths near Princeton in Green Lake County. Larvae produced by the annual flight were recently observed in Adams, Buffalo, and Trempealeau counties.




EUROPEAN CORN BORER: The treatment window for second-generation larvae will close in two weeks across southern and portions of central Wisconsin. Final inspections should be performed before degree day accumulations surpass 2,100 (modified base 50°F) and larvae begin boring into corn stalks. The predominant larval stages found this week were the 2nd and 3rd instars.

CORN EARWORM: Migration flights continued during the first week of August. The highest pheromone trap count reported was 78 moths at Arlington in Columbia County, while other monitoring sites captured fewer than 10 moths. The earworm caterpillars noted August 3-5 in the west-central and central areas were about ¾-1¼ inches long. Routine scouting for larvae should be underway in fresh market and processing sweet corn.

*Northern corn rootworm* *Tracy Schilder DATCP*

JAPANESE BEETLE: This insect is still common on silks in cornfield margins. The highest beetle pressure noted during recent surveys has been in Crawford, Grant, Green, Lafayette, Dunn and Pepin counties in the southwest and west-central districts. As a reminder, a fieldwide average of three or more beetles per ear is considered high and may be a concern for fields not yet pollinated.

REDHEADED FLEA BEETLE: This flea beetle has been unusually common on a variety of crops and nursery plants this summer. Surveys on July 30 in Marathon County found particularly heavy populations. According to the field specialist's report, the beetles were abundant on corn leaves (<5-8 per leaf), where they were causing noticeable windowpane injury. Leaf feeding by this species is usually not damaging to reproductive corn, but fruits, vegetables and nursery stock in northern and central Wisconsin should be monitored for late-season flea beetle defoliation.

*Redheaded flea beetles feeding on corn leaf* *Randy Wendler DATCP*

# SOYBEANS

SOYBEAN APHID: Surveys conducted from July 20-August 5 found low to moderate aphid densities. Counts in 166 soybean fields ranged from 0-141 aphids per plant, but the vast majority of sites (91%) had averages below 20 aphids per plant. Only seven of the fields, primarily in the west-central counties, showed moderate counts above 50 aphids per plant.

Soybean producers and crop advisors are reminded that insecticide treatment is not warranted until the threshold of 250 aphids per plant on 80% of the plants throughout the field has been exceeded. Although there may be exceptions, fieldwide average counts have not surpassed this level in any soybean field surveyed by DATCP this summer.

Soybean aphids Krista Hamilton DATCP

All soybeans should be examined next week to evaluate aphid densities. Final treatments must be applied before the R5.5 growth stage to provide any economic benefit.

JAPANESE BEETLE: Emergence has peaked for the season, but adult Japanese beetles continue to cause variable damage to soybeans throughout much of the state. Defoliation levels in nearly all fields surveyed since late July have been below the 20% economic threshold for soybeans in the seed-filling stages, but economic defoliation ranging from 20-60% has been observed at a few southwestern sites (Crawford, Grant, Lafayette, and Richland counties), as well as in one Clark County field. Japanese beetles were collected in sweep nets in 133 of the 166 fields sampled (80%) from July 20-August 5, with counts ranging from 1-138 beetles per 100 sweeps. The highest counts were recorded in western Wisconsin soybeans, and in Clark County.

Japanese beetles feeding on soybean leaf Krista Hamilton DATCP

SOYBEAN DEFOLIATORS: Defoliation by grasshoppers, green cloverworms, Japanese beetles, leafrollers, redheaded flea beetles and stink bugs is prevalent, particularly around the perimeters of fields. A combined defoliation rate exceeding 20% for soybeans in the seed-filling stages may justify treatment if the insects are actively feeding and damage is expected to intesify. Defoliation estimates should be based on all parts of the soybean canopy (not just the injured portion) to avoid overestimating leaf injury and thus making unnecessary insecticide applications.

Obliquebanded leafroller Randy Wendler DATCP

TWO-SPOTTED SPIDER MITE: Reports indicate mite populations are increasing in soybeans, orchards and nurseries following the dry weather trend of late July. DATCP surveys have found evidence of mites in soybeans in

scattered areas of the state, and infestations are expected to persist as long as dry conditions continue. Scouting for mites and other soybean pests is suggested through mid-August. As is the case with the soybean aphid, treatment for mites is not beneficial after the R5 to R5.5 or full pod growth stages.

# FRUITS

CODLING MOTH: Significant moth flights continued in several eastern and southern Wisconsin locations. Above-threshold counts exceeding 5 moths per trap were registered in 9 of 25 cooperating orchards during the period ending August 5. Additional late-season spot treatments may be necessary for orchard blocks where this pest remains abundant. Control of second-generation CM is important since the larvae can continue to emerge and damage fruits even after the apples are in storage.

Codling moth damage simplycitysoil.wordpress.com

APPLE MAGGOT: Most monitoring sites captured fewer AM flies compared to the previous week. The high count was reported from Malone in Fond du Lac County where nine flies were trapped on a baited red sphere. Emergence has likely peaked in all but the far northern counties, but Apple maggot controls may need to be maintained through the first week of September if flies are being captured at the rate of one fly per trap per week on unbaited traps or five flies per trap per week on baited traps.

OBLIQUEBANDED LEAFROLLER: Oviposition by the summer flight of moths is underway. In contrast to spring caterpillars that primarily feed on vegetative tissue, late-season larvae are more damaging, as they infest ripening fruit. Effective management of the summer generation in August will reduce the overwintering population and next year's spring brood. Orchard IPM Specialist John Aue recommends a 3-5% fruit injury rate as the treatment threshold and suggests a trapping density of two traps per 20 acres to determine where to direct treatments.

Obliquebanded leafroller larvae Krista Hamilton DATCP

STINK BUG: Late-season activity is increasing. Apple growers should continue to scout fruits for the dimples or dark, irregular circular depressions typical of stink bug feeding, and flag sites with multiple depressions on the same fruit or tree. Spot treatment is usually adequate if damage is light or limited to specific orchard areas of blocks.

BMSB nymphs on blackberries Bernadine Strik Oregon State University

SAN JOSE SCALE: Monitoring for second-generation crawlers is suggested through late August. Damage by this pest can increase exponentially from one generation to the next, and problems may persist through mid-September. As harvest begins, it is recommended that

growers examine fruits for the "black cap stage" adults and maintain tape on infested limbs. A count of 10-15 scale crawlers over a few days or 10 crawlers on one tape may warrant application.

## VEGETABLES

SQUASH BUG: All stages of this pest were observed this week on melons, pumpkins and squash in several community gardens. Most cucurbit crops have matured beyond the critical period of control (seedling and flowering stages), but squash bug feeding will persist through fall, causing aesthetic damage and, in extreme cases, killing plants. Disposing of all cucurbit foliage and plant debris around the garden will eliminate overwintering sites and help reduce next year's population.

*Squash bug nymph* *Krista Hamilton DATCP*

ONION MAGGOT: Emergence of late-summer flies is expected to begin soon in advanced southern Wisconsin locations, following the accumulation of 3,230 degree days (base 40°F). Larvae from this third and final generation will overwinter in cull onions or bulbs left behind in fields. Thorough fall clean-up and rotating to a non-crop host are recommended if onion maggot problems occurred this season. Onion maggot degree days as of August 5 were: Beloit 3,113, Madison 3,040, Eau Claire 2,987, Green Bay 2,746, and Hancock 2,690.

LATE BLIGHT: Regular monitoring of plants for signs of infection and regular treatment of fields on a five- to seven-day schedule is advised in order to prevent this disease from developing in tomato and potato crops as harvest accelerates. No cases of late blight have been confirmed in any Wisconsin potato field or home garden this season, but all potato growing areas in the state have exceeded the threshold for late blight management and fungicidal protection of susceptible tomato and potato crops is recommended by UW at this time.

*Late blight lesions on tomato* *Krista Hamilton DATCP*

CABBAGE LOOPER: Scouting should continue through early September. A 10% infestation rate is the suggested treatment threshold from early heading until harvest to protect the market quality of cabbage. The same threshold applies to broccoli and cauliflower once flowers or curds begin to develop. Larval damage to cole crops appears to be less common this season compared to 2019.

## NURSERY & FOREST

MAGNOLIA SCALE: Adult scales were found on a variety of magnolia trees at nurseries in Racine and Waukesha counties. The mature stage of the scale is becoming more apparent as the wax of the nymphs fade. Late August to early September is the recommended time to treat the newly hatched crawlers; proper timing of the application is critical. If warranted, horticultural oils, systemic insecticides, or insect growth regulators labeled specifically for soft scales should target the crawler stage. Soaps can be effective against the immatures, but usually have little effect on the adults.

DOGWOOD SAWFLY: Larvae were observed on the foliage of redosier dogwoods in La Crosse County. At this time of year, defoliation has usually progressed to the point that most leaf tissue has been fully consumed and only the midvein remains. Chemical control is effective against early-instar larvae (less than ¾ inch), but that treatment window has closed for this season. Varieties

most susceptible to sawfly infestation are the gray and redosier dogwoods.

*Dogwood sawfly larvae on redosier dogwood* *Konnie Jerabek DATCP*

BIRCH LEAFMINER: River birch trees at a nursery grower in Dane County were exhibiting the noticeable blotches associated with this leaf-mining sawfly. The larval stages of the birch leafminer feed between upper and lower leaf surfaces, causing brown blotchy mines to form in the leaves as they mature. Heavy infestations may lead to noticeable defoliation and leaf drop, but the mortality risk is low and chemical control is rarely warranted. Additionally, river birch trees are less susceptible to birch leafminer than are other birch species.

*Birch leafminer* *Shanon Hankin DATCP*

JAPANESE BEETLE: Nursery operators and homeowners continue to report damage to linden trees, roses, and numerous other ornamental plants. Adequate soil moisture levels favored grub survival from last season and may be one of the factors contributing to the localized outbreaks this season. Peak emergence has occurred in most areas and populations should begin to decline by the end of the month.

BROWN MARMORATED STINK BUG: A third-instar nymph was found at a nursery grower on 'Ann' magnolia in Dane County. It was unclear if the nymph was using magnolia as a host, but it is a possibility given BMSB's very broad host range. While BMSB is considered a serious emerging threat to Wisconsin field, fruit and vegetable crops, it's potential to damage nursery stock remains unknown. Nursery managers and homeowners who suspect BMSB are encourage to send a photo or physical sample to PJ Liesch pliesch@wisc.edu at the UW-Madison Insect Diagnostic Lab.

LILY LEAF BEETLE: Nursery inspectors observed larvae of this relatively new invasive pest in Vilas County on Asiatic lily. The adult beetles are bright red and conspicuous, while the larvae can be found by inspecting lily leaves for defoliation. Leaf feeding by LLB larvae may become severe and, without intervention, will eventually kill the plant.

*Lily leaf beetle larva* *Timothy Allen DATCP*

# APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 30 - AUGUST 5

| COUNTY | SITE | STLM[1] | RBLR[2] | CM[3] | OBLR[4] | DWB[5] | LPTB[6] | BMSB[7] | AM RED[8] | YELLOW[9] |
|---|---|---|---|---|---|---|---|---|---|---|
| Bayfield | Keystone | 3 | 4 | 1 | 0 | 7 | 2 | 0 | 0 | 4 |
| Bayfield | Orienta | 15 | 4 | 0 | 10 | 10 | 2 | 0 | 0 | 0 |
| Brown | Oneida | 165 | 29 | 6 | 0 | 37 | 0 | 0 | 0 | 0 |
| Columbia | Rio | 68 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Crawford | Gays Mills | 250 | 9 | 1 MD | 2 | 16 | 5 | — | 2* | 0 |
| Dane | Mt. Horeb | 87 | 48 | 2 | 0 | 5 | 0 | 0 | 0 | 0 |
| Dane | McFarland | 56 | 47 | 2 | — | 19 | 0 | 0 | 0 | 0 |
| Dane | Stoughton | 588 | 40 | 4 | 1 | 9 | 0 | 0 | 0 | 3 |
| Fond du Lac | Campbellsport | 48 | 14 | 0 | 1 | 3 | — | 0 | — | — |
| Fond du Lac | Malone | 75 | 0 | 5 | 3 | 0 | 0 | 1 | 9** | 2** |
| Fond du Lac | Rosendale | 23 | 33 | 3 | 4 | 8 | 2 | 0 | 2 | 4 |
| Green | Brodhead | 19 | 5 | 1 | 0 | 2 | 0 | 0 | 0 | 0 |
| Iowa | Mineral Point | 800 | 0 | 12 MD | 0 MD | 11 | 12 | 0 | 2** | — |
| Jackson | Hixton | 7 | 2 | 0 | 2 | 3 | 5 | 0 | 0 | 1 |
| Kenosha | Burlington | 497 | 6 | 10 | 1 | 52 | 0 | 0 | 5** | — |
| Lafayette | Belmont | 139 | 4 | 0 MD | 1 | 0 | 0 | 0 | 0 | 0 |
| Marathon | Edgar | 821 | 27 | 3 | 0 | 41 | 3 | 0 | 0 | 1 |
| Marinette | Niagara | 38 | 12 | 0 MD | 0 | 11 | 0 | 0 | 0 | 0 |
| Marquette | Montello | 269 | 11 | 0 | 0 | 3 | 7 | 0 | 0 | 0 |
| Ozaukee | Mequon | 0 | 0 | 8 | 0 | 5 | 0 | 0 | 0 | 0 |
| Pierce | Beldenville | 168 | 0 | 4 | 0 | 0 | 1 | — | 0 | 0 |
| Pierce | Spring Valley | 77 | 26 | 0 MD | 1 | 14 | 0 | 0 | 0* | 1 |
| Racine | Raymond | 460 | 4 | 12 | 0 | 2 | 0 | — | 0 | 0 |
| Racine | Rochester | 70 | 4 | 8 | 2 | 1 | 0 | 0 | 7* | 0 |
| Richland | Hill Point | 99 | 12 | 7 | 0 | 19 | 0 | 0 | 3** | 2** |
| Sheboygan | Plymouth | — | — | — | — | — | — | — | — | — |
| Walworth | East Troy | 42 | 5 | 0 MD | 1 | 1 | 0 | 2 | 0 | 0 |
| Walworth | Elkhorn | 38 | 10 | 0 MD | 5 | 0 | 1 | 1 | 1 | 0 |
| Waukesha | New Berlin | 220 | 0 | 5 | 0 | 5 | 1 | — | 0 | 0 |

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller; [5]Dogwood borer; [6]Lesser peachtree borer; [7]Brown marmorated stink bug; [8]Apple maggot red ball; *Unbaited; **Baited; [9]Apple maggot yellow board.

| COUNTY | SITE | BCW[1] | CEL[2] | CE[3] | DCW[4] | ECB[5] | FORL[6] | SCW[7] | TA[8] | VCW[9] | WBC[10] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Columbia | Arlington | 2 | 0 | 0 | 3 | 1 | 0 | 2 | 0 | 0 | 0 |
| Columbia | Pardeeville | 0 | 2 | 0 | 6 | 3 | 1 | 0 | 4 | 0 | 2 |
| Dodge | Beaver Dam | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 10 | 0 | 4 |
| Fond du Lac | Ripon | 0 | 1 | 0 | 9 | 7 | 5 | 1 | 15 | 1 | 24 |
| Grant | Prairie du Chien | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 |
| Langlade | Antigo | 0 | 1 | 0 | 4 | 0 | 15 | 0 | 6 | 0 | 6 |
| Manitowoc | Manitowoc | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| Marathon | Wausau | 1 | 0 | 0 | 10 | 0 | 1 | 0 | 6 | 0 | 9 |
| Monroe | Sparta | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 |
| Rock | Janesville | 0 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 |
| Walworth | East Troy | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 7 |
| Waushara | Hancock | — | — | — | — | — | — | — | — | — | — |
| Wood | Marshfield | 1 | 0 | 0 | 9 | 0 | 6 | 1 | 9 | 0 | 0 |

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