

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

Relief from the mid-July heat and humidity arrived in Wisconsin at the start of the week. After thunderstorms with damaging winds, large hail, and torrential downpours of 3-6 inches impacted portions of the state July 18-20, a cold front on Sunday brought dry, pleasant summer weather and an end to the hot spell. Sunshine with comfortable high temperatures in the 70s and lower 80s prevailed, while lows were mainly in the 50s in northern Wisconsin to the lower 60s across the south. The more seasonable temperatures allowed hay baling and other fieldwork to resume following last week's storms, though crop conditions did not improve with the heat and rain. According to the July 21 USDA NASS crop report, the overall condition of the state's corn was rated as 60% good to excellent, unchanged from a week earlier but 23 percentage points below the same time last year. The soybean crop was categorized as 62% good to excellent, down two points from the previous week.

LOOKING AHEAD

WESTERN BEAN CUTWORM: Approximately 25% of this year's moth flight is complete in areas south of Highway 21 and near Eau Claire. This event should occur between July 26-August 1 in the Appleton, Green Bay and Stevens Point areas. The optimal timing of field scouting to esti-

mate egg density is around 2,577 degree days (min base 38°F/max 75°F), when 25% of the moth population has emerged. Egg masses were found on July 24 in Marquette County corn.

CORN EARWORM: Moth migration flights were registered in Dane, Columbia, Dodge, Fond du Lac, Marathon and Rock counties this week. Numbers ranged from 2-19 moths per trap, with the highest capture reported near Ripon in Fond du Lac County. Egg deposition on available corn silks is beginning and will increase as more migrants arrive in August. Routine scouting is recommended for sweet corn with green silks. This pest's broad host range also includes industrial hemp, which should be monitored next month for signs of this pest.

EUROPEAN CORN BORER: Summer moths are appearing in low to moderate numbers in black light traps. Peak flight is forecast for July 28-31 near Beloit, Madison and La Crosse, and from August 1-7 across much of the southern half of the state. The treatment window for second-generation larvae has opened in advanced locations with the accumulation of 1,550 degree days (modified base 50°F).

EUROPEAN CHAFER: This destructive lawn grub has been found in Langlade County. According to UW-Madison Entomologist PJ Liesch, an adult beetle specimen was confirmed by his lab on July 10. The European chafer

has been established since 2013 in Door County, where it has caused extensive lawn damage in Sturgeon Bay and surrounding areas. Many yards have been reduced to patches of dead grass due to a combination of root feeding by the chafer larvae and scavenging by birds, skunks, and other animals. The latest Langlade County detection confirms its Wisconsin distribution has spread beyond the Door Peninsula.

Larvae of the European chafer are considered a more serious pest of home lawns than Japanese beetle because they feed later into the fall and earlier in spring, and may even resume activity during warm periods in winter. Property owners or lawn care companies who suspect European chafer damage are encouraged to send a specimen or photo to PJ Liesch at the UW Insect Diagnostic Lab for verification: <http://labs.russell.wisc.edu/insectlab/contact-us/>



European chafer grubs Annie Deutsch UWEX Door County

SOYBEAN APHID: Surveys indicate aphid pressure remains low. Of the 36 soybean fields examined this week, none had an average density greater than 2.5 aphids per plant (100 aphids on 40 plants examined). Insecticide treatment has not yet been justified for any site sampled by DATCP this season. Scouting to assess soybean aphid densities is advised in the week ahead, with regular sampling continuing through the R5.5 stage in mid-August.

FORAGES & GRAINS

POTATO LEAFHOPPER: Pressure in alfalfa, apple orchards, and other crops has been very high this season. The counts recorded by DATCP during its July surveys

DEGREE DAYS JANUARY 1 - JULY 24

LOCATION	50°F	2018	NORM	40°F
Dubuque, IA	1751	1949	1644	2808
Lone Rock	1588	1742	—	2594
Beloit	1620	1701	1666	2632
Sullivan	1482	1593	1568	2445
Madison	1588	1696	1589	2602
Juneau	1420	1622	—	2363
Racine	1328	1464	—	2273
Waukesha	1446	1517	—	2407
Milwaukee	1378	1519	1462	2331
Hartford	1396	1563	—	2335
Appleton	1374	1637	—	2299
Green Bay	1329	1588	1400	2248
Big Flats	1389	1647	—	2338
Hancock	1331	1528	1541	2257
Port Edwards	1327	1550	1506	2243
La Crosse	1532	1833	1739	2538
Eau Claire	1451	1742	1559	2399
Cumberland	1235	1437	1448	2085
Bayfield	1042	1239	—	1832
Wausau	1160	1407	1416	1998
Medford	1140	1360	1292	1969
Crivitz	1245	1472	—	2110
Crandon	1140	1333	1108	1950

Method: Modified B50; Modified B40 as of January 1, 2019.
 NORMALS based on 30-year average daily temps, 1981-2010.

are the highest in several years. Of the 38 alfalfa fields sampled this week in Dodge, Green, Iowa, Jefferson, Juneau, Lafayette, Marathon, Marquette, Monroe, Portage, Richland, and Sauk counties, 23 or 61% had economic counts of 2.0-5.3 adults and nymphs per sweep, with the largest numbers observed in Sauk County.

JAPANESE BEETLE: Adults are prevalent in alfalfa sweep net collections, especially in southern and western alfalfa fields where counts occasionally average 0.5-0.9 per sweep (50-90 per 100 sweeps). The abundance of beetles signals that heavy egg laying is occurring.

PLANT BUG: Mixed populations of alfalfa and tarnished plant bugs currently average 0.3 per sweep, which is very low in comparison to the 5.0 plant bug per sweep threshold. The week's highest count of 1.4 per sweep was noted in Iowa County.

PEA APHID: Levels of this insect in alfalfa were extremely low at less than 1.5 aphids per sweep (150 aphids per

100 sweeps). The July 18-24 average of only 0.6 per sweep suggests that aphid pressure is generally very low at this time.

CORN

REDHEADED FLEA BEETLE: Significant numbers of this flea beetle were observed by a DATCP surveyor Dane and Marathon County corn. According to the report, the beetles were abundant on corn leaves (<5 per leaf), where they were causing noticeable defoliation. The windowpaning injury resulting from this species is similar to leaf feeding of adult corn rootworm beetles and is usually superficial. Although this beetle is not considered a major threat to field crops, the high populations observed suggest that fruits, vegetables and soybeans could be at risk of damage and should be monitored for flea beetle activity.



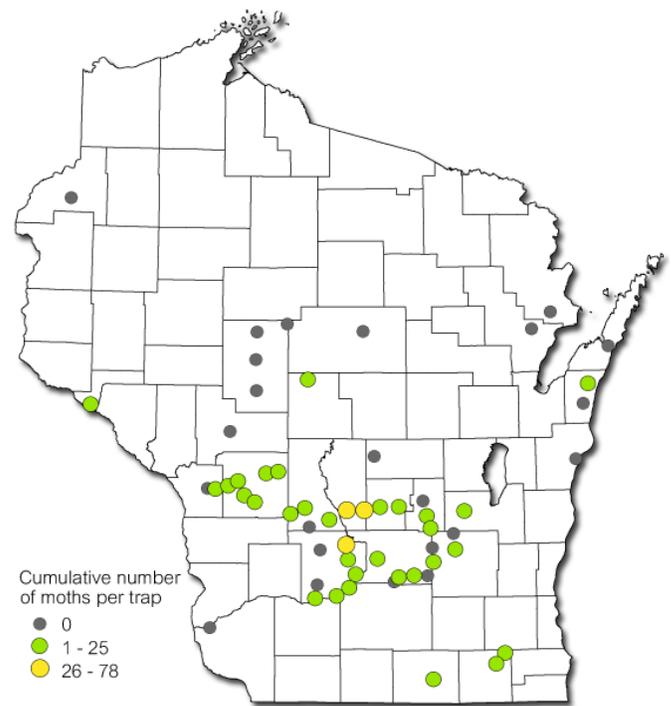
Redheaded flea beetles feeding on corn leaf Randy Wendler DATCP

EUROPEAN CORN BORER: Surveys of corn found one significant infestation affecting 46% of plants in Richland County on July 23. Another field near Hollandale in Iowa County had an estimated infestation rate of 18%, but all others had infestations affecting fewer than 5% of plants. The treatment window for the second-generation larvae has opened near Beloit, La Crosse, Madison and other advanced southern and western locations where 1,550 degree days (modified base 50°F) have accumulated. This window extends longer than the first-generation window and will remain open until 2,100 degree days have been reached.

WESTERN BEAN CUTWORM: Moth emergence accelerated this week. According to the UNL-UMN degree day model for this insect, 25% of the moth flight should be

complete across the southern half of the state with the accumulation of 2,577 degree days (modified base 38°F/max 75°F). The DATCP network of pheromone traps registered a total of 259 moths from July 18-25, compared to 51 moths during the previous week. The current state cumulative count is 314 moths in 57 traps. Scouting to estimate egg density is recommended at this time. If 5% or more of plants are infested and control is warranted, the optimal timing for insecticide treatment is at 90-95% tassel emergence.

Western Bean Cutworm Counts 2019



Wisconsin Department of Agriculture, Trade and Consumer Protection



Western bean cutworm egg cluster

Tracy Schilder DATCP

JAPANESE BEETLE: Beetles are prevalent in low to moderate numbers in corn. DATCP surveys indicate that counts range from 1-25 beetles per 100 plants and are still well below the economic threshold of three or more beetles per ear, when silks are being clipped to ½-inch during pollination. Infestations are generally limited to the field margins. Beetles are expected to grow more numerous and damaging as silks become more widely available. Scouting several areas in the field interior, in addition to field edges where beetles are usually concentrated, is suggested for corn that has reached the silking stage.



Japanese beetles feeding on corn silks

Krista Hamilton DATCP

SOYBEANS

SOYBEAN APHID: Colonies on R1-R3 soybeans remain unusually low. The highest average count in 39 fields sampled from July 18-25 was less than 2.5 aphids per plant and 30 of the sites still had no detectable aphid population. As a reminder, aphid densities typically peak in Wisconsin during the first two weeks of August, and insecticide treatment is not warranted until populations reach 250 aphids per plant on 80% of the plants throughout the field.

JAPANESE BEETLE: This pest continues to cause light to moderate defoliation (5-10%) of soybeans along field margins. Infestations were noted in 10 of the 12 counties surveyed this week, with Marathon and Portage being the exceptions. The economic threshold for Japanese beetle and other leaf feeding soybean pests decreases to 20% defoliation between bloom and pod fill. Limited spot treatment should be adequate to control beetles in fields where severe leaf feeding injury is confined to the perimeter areas.

GREEN CLOVERWORM: Larvae can be found in low numbers in most soybean fields. Defoliation attributed to this caterpillar and other leaf feeding pests has not surpassed the 20% threshold for reproductive soybeans in any field surveyed this month. Green cloverworm larvae are present in Wisconsin soybeans every season, though high populations are uncommon. The last serious cloverworm outbreaks occurred in 2010.



Green cloverworm larva and soybean defoliation Tracy Schilder DATCP

FRUITS

SPOTTED WING DROSOPHILA: Infestations of small fruits are intensifying, and damage has been reported on some fruit farms and in community gardens. Cultural management practices are particularly important for reducing SWD infestation and population buildup at this time. Netted exclusion of the plant canopy, sanitation and orchard/berry floor management, and cooling fruit to 34-38°F immediately after harvest are advised.

Chemical control of SWD is intensive and involves insecticide applications at the onset of adult activity to prevent adult egg laying, short intervals between sprays, and insecticide rotation. For organic operations, the OMRI-approved insecticides PyGanic and Entrust are available. A list of insecticide options for conventional small fruit growers can be found on the UW-Madison SWD website: <http://labs.russell.wisc.edu/swd/management-2/>.

APPLE MAGGOT: Emergence is variable but generally increased slightly this week in Wisconsin orchards. Economic counts of 1-2 flies per unbaited trap and 5-7 flies per baited trap were reported from Columbia, Iowa,

Fond du Lac, Pierce, Racine and Sheboygan counties. Growers should reapply sticky coating to traps and maintain apple maggot controls as long as counts exceed the established economic thresholds of one fly per trap per week on unbaited traps or five flies per trap per week on baited traps.

CODLING MOTH: Most apple orchards are beyond the summer biofix and treatments targeting second-generation larvae have started. Pheromone trap counts at this time can indicate the effectiveness of first-generation control or highlight deficiencies in the current codling moth management program. If using organophosphates (Imidan) for control of the summer generation, growers should replace trap liners before an application to monitor the effectiveness of the material. Moth counts that do not decline to zero or near-zero following treatment suggest resistance issues have developed and use of organophosphate material should be discontinued.

OBLIQUEBANDED LEAFROLLER: Larvae are primarily in the late instars in the southern and western counties. Beyond the first and second instars, this leafroller becomes increasingly difficult to control and much of its feeding damage has already occurred. Emergence of the summer brood of moths is anticipated by early to mid-August.



Obliquebanded leafroller larva

Tracy Schilder DATCP

SPOTTED TENTIFORM LEAFMINER: The second flight has peaked in most southern and central apple orchards and sapfeeder larvae are reappearing. The economic threshold for the third and final generation increases to five mines per leaf.

POTATO LEAFHOPPER: Pressure in orchards is the highest in several years. One- to two-year-old, non-bearing

apple trees are most susceptible to leafhopper feeding and should be monitored for leaf curling and yellowing caused by the adults and nymphs. Treatment is justified at levels of one or more nymphs per leaf when symptoms are evident.

STINK BUG: Surveys in field crops suggest that activity is escalating and stink bugs are likely to start invading orchards in greater numbers. Growers can begin inspecting fruits in the week ahead for dimples or dark, irregular circular depressions typical of stink bug feeding, and should flag sites with multiple depressions on the same fruit or tree. Damage is often limited to specific areas in the orchard and depending on the distribution of the population, spot treatment may be adequate.



Dusky stink bug underside

Hal Wentzel Pleasantview Orchard

JAPANESE BEETLE: Apple orchards in southern and western Wisconsin are reporting heavy beetle populations (especially on 'Honeycrisp'), with significant damage to foliage and the terminal ends of branches along orchard perimeters. If the beetles are causing unacceptable injury and treatment is required, growers can minimize insecticide use by spot treating only the most infested varieties.

Insecticide options for this pest are limited. Growers who prefer a reduced-risk approach can apply a neonicotinoid at the first sign of feeding injury and before large aggregations appear. Neonicotinoids, e.g., Assail (acetamiprid), Actara (thiamethoxam), offer good repellency and mortality within a few days. Additionally, imidacloprid products, e.g., Admire Pro, Alias, and Wrangler, applied for apple maggot, have anti-feeding properties and should also offer some Japanese beetle repellency. If beetle populations are large, applying a "knock-down" or contact insecticide such as PyGanic (pyrethrins) may provide control.

Organic producers have the option of applying PyGanic (pyrethrins) or neem (azadirachtin) oil products, e.g., Azadirect, Neemix, and Trilogy. It is important to be aware that a botanical insecticide such as neem may be phytotoxic if tank-mixed with other pesticides.



Japanese beetles

Tim Allen DATCP

VEGETABLES

COLORADO POTATO BEETLE: Second-generation larvae are appearing on potatoes in the southern and west-central areas. Late-season control of this pest may be warranted if defoliation exceeds 30% during tuber formation. Treatments applied after egg hatch and before the majority of the larval population reaches the destructive fourth-instar stage are most effective. Potato growers who opt to chemically control the larvae should follow CPB resistance management guidelines by avoiding consecutive use of the same insecticide product or of products with similar modes of action.



Colorado potato beetle larvae

Krista Hamilton DATCP

PURPLE CARROT-SEED MOTH: A report from UW Entomologist PJ Liesch notes that sightings of purple carrot seed moth (PSCM) larvae have increased the last two weeks. Confirmed for the first time in Wisconsin last year, this non-native European pest of carrots, dill, and related plants was initially found in Kewaunee County, with additional cases documented throughout the summer in Brown, Columbia, Dodge, Milwaukee, Racine, Sheboygan and Washington counties. New county-level detections in 2019 include Dane, Fond du Lac, Rock, Walworth, and Waukesha counties, bringing the total to 13 counties with verified reports. The greatest impact expected from this insect could be to plants in the carrot family specifically grown for seed, such as coriander, dill, and fennel. Feeding by the larvae can make the umbels unusable for cooking or for sale.



Purple carrot seed moth larva

PJ Liesch UW-Madison

STRIPED CUCUMBER BEETLE: Growers of cucurbits should continue to monitor plants for beetles and signs of bacterial wilt. Symptoms vary by host species, but typically the leaves turn dull green, followed by progressive wilting of the lateral leaves. As the pathogen moves through the main stem, it plugs the vascular tissue, eventually causes wilting and death of entire plants. A diagnostic technique referred to as the "string test" can be useful in confirming the disease. The test involves cutting a wilting stem, pushing the two cut ends together, then slowly pulling the ends apart. If bacterial wilt is present, a string of bacterial ooze should appear between the cut ends.

SQUASH BUG: Economic counts of 1-2 egg clusters per plant were found on squash in two La Crosse County vegetable gardens surveyed this week, along with adults and many nymphs. Handpicking the eggs and all squash bug stages from the undersides of leaves is suggested if

only a few plants are infested, or dusting diatomaceous earth over plants may help reduce numbers. Levels that become intolerable can be spot treated with an organic insecticide or a pyrethroid, but insecticides are generally only effective against the small, newly-hatched nymphs, and thorough coverage is critical. The economic threshold for this pest in one egg cluster per plant when vines are flowering.



Squash bug eggs

Krista Hamilton DATCP

CORN EARWORM: Migrants continued to arrive in the state for the second week. Pheromone traps captured 22 moths from July 11-17 and another 79 moths from July 18-25. Although the total monthly count of 144 moths at 9 of 16 pheromone trap locations signals a relatively low risk of earworm problems as of late July, scouting of silking cornfields should be increased going into August. Trapping network participants are reminded to replace lures on a weekly basis.



Corn earworm moth

B. Cissel UD Cooperative Extension

NURSERY & FOREST

YELLOWHEADED SPRUCE SAWFLY: Light but widespread damage from the larvae of this insect was noted on white spruce trees in Oneida County. The yellow-headed spruce sawfly feeds on any type of spruce, though open-grown, 3 to 5-year-old trees are preferred, making this species a pest of Christmas trees and nursery spruce. Early in summer the larvae feed mainly on new growth, later moving to older growth where they cause noticeable defoliation in the upper branches. Repeated years of severe defoliation can lead to top die-back or even tree mortality.



Yellowheaded spruce sawfly

Timothy Allen DATCP

REDHEADED FLEA BEETLE: These shiny black beetles with prominent reddish heads are abundant in scattered cornfields from Dane to Marathon County. Nurseries are also likely to be impacted given the high numbers observed. Defoliation caused by flea beetle feeding varies by leaf type, appearing as skeletonizing or shredding on thinner leaves and a linear, leafminer-like pattern on the thicker, fleshy leaves of sedum and similar plants. Insecticides directed against the adults can be considered if beetle feeding is impacting the aesthetic quality and marketability of stock. A few cultivars highly susceptible to RHFB damage include Virginia sweetspire 'Little Henry,' hydrangea 'Vanilla Strawberry' and 'Bobo,' red osier dogwood 'Kelsey,' and weigela 'Fine Wine.'

GUIGNARDIA LEAF SPOT: The large, blotchy leaf spots common on buckeye trees are symptoms of this fungal disease, caused by the pathogen *Guignardia aesculi*. The reddish-brown blotches with yellow margins may

lead to early defoliation when infection is severe, particularly during wet summers. Removal and destruction of fallen leaves may help reduce infection in future years. Because this disease is primarily aesthetic and does not threaten the long-term survival of the tree, chemical control is not advised.



Guignardia leaf blotch on buckeye

Liz Meils DATCP

PEAR SAWFLY: Serviceberry shrubs at a nursery grower in Dane County were infested with larval pear sawflies. The black, slug-like larvae feed on the upper surface of leaves of many ornamental and fruit trees such as cherry, cotoneaster, mountain ash and pear, causing leaf skeletonization similar to Japanese beetle damage. Larvae first appear in June, feed for a month, then drop to the soil to pupate. A second generation appears in late August or September. Pear sawfly damage is largely cosmetic, but several control options are available, including manual removal, horticultural oils and insecticidal soaps.



Pear sawfly larvae

Lesley Ingram bugwood.org

PHOMOPSIS TIP BLIGHT: Nursery inspectors report that this evergreen disease was infecting several balsam fir, red pine and spruce trees at a Portage County nursery field. Plants with Phomopsis blight develop yellow spots at the shoot tips of young needles that progress to the stems, causing gradual dieback of new growth and eventual death of the infected branch. The black pycnidia or fruiting bodies that develop on the dead branches are diagnostic. The occurrence of Phomopsis can be reduced by pruning out symptomatic branches and twigs 4-6 inches below the diseased area, and disinfecting pruning shears between cuts. Maintaining adequate spacing and airflow between plantings will also help to prevent its spread.



Phomopsis tip blight on Juniper

Liz Meils DATCP

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 18 - 24

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	DWB ⁵	LPTB ⁶	BMSB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	79	0	2	3	0	7	0	0	2
Bayfield	Oriente	8	0	0	24	41	12	—	—	—
Brown	Oneida	215	20	4	6	33	0	0	0	0
Columbia	Rio	0	20	0	0	5	0	0	2	1
Crawford	Gays Mills	225	56	0	2	1	3	—	—	—
Dane	DeForest	—	—	—	—	—	—	—	—	—
Dane	Mt. Horeb	—	—	—	—	—	—	—	—	—
Dane	Stoughton	35	4	2	3	7	13	—	—	—
Fond du Lac	Campbellsport	90	12	0	9	28	0	0	0	0
Fond du Lac	Malone	20	30	3	2	3	0	0	**5	0
Fond du Lac	Rosendale	34	82	3	4	9	7	0	0	0
Grant	Sinsinawa	77	—	6	—	—	—	—	—	—
Green	Brodhead	—	—	—	—	—	—	—	—	—
Iowa	Mineral Point	35	183	21	7	35	4	0	*2	*0
Jackson	Hixton	13	17	0	1	14	5	0	0	0
Kenosha	Burlington	50	115	1	4	99	12	0	0	0
Marathon	Edgar	1877	45	0	4	90	4	0	0	0
Marinette	Niagara	70	38	0 ^{MD}	1	5	2	0	0	0
Marquette	Montello	122	93	1	0	22	0	0	0	0
Ozaukee	Mequon	50	5	1	1	8	2	0	0	0
Pierce	Beldenville	—	—	—	—	—	—	—	—	—
Pierce	Spring Valley	178	66	0 ^{MD}	1	62	14	0	*2	3
Racine	Raymond	128	26	2	14	40	1	—	0	0
Racine	Rochester	130	124	8	4	23	0	0	*2	0
Richland	Hill Point	126	24	0	0	10	29	0	0	**0
Sheboygan	Plymouth	805	0	0 ^{MD}	3	13	0	0	**7	0
Walworth	East Troy	53	37	0 ^{MD}	4	18	7	0	0	0
Walworth	Elkhorn	65	22	0 ^{MD}	10	4	5	0	0	0
Waukesha	New Berlin	400	41	22	5	24	14	—	0	0

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

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	0	0	0	4	0	0	17	0	2
Columbia	Pardeeville	0	0	0	10	33	6	0	30	0	4
Dodge	Beaver Dam	2	0	2	8	1	1	0	1	0	3
Fond du Lac	Ripon	0	1	0	3	8	0	0	0	0	5
Grant	Prairie du Chien	—	—	—	—	—	—	—	—	—	—
Manitowoc	Manitowoc	—	—	—	—	—	—	—	—	—	—
Marathon	Wausau	2	0	0	2	0	5	0	2	0	0
Monroe	Sparta	0	0	0	0	0	1	0	0	0	2
Rock	Janesville	4	5	2	0	1	8	0	36	1	4
Walworth	East Troy	0	0	0	0	0	1	0	1	0	3
Wood	Marshfield	10	1	0	1	4	5	0	2	3	2

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