Volume 63 No. 08 June 21, 2018

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

Unsettled weather persisted, temporarily delaying alfalfa harvesting and causing localized flooding. Cloudy skies lingered during the week and several periods of moderate to heavy rain were recorded. Storms in the far northwest brought 5-9 inches of rain to parts of Bayfield and Douglas counties, with Ashland's 3-day rainfall total reaching 7.9 inches from June 15-17. A record-setting 2.7 inches also fell near Wausau on June 15. Meanwhile, extreme weekend heat and humidity with highs reaching 98°F spurred crop growth statewide. Fruit trees, vegetables, and summer crops continued to thrive and develop rapidly. The most advanced corn has reached the eight-leaf (V10) growth stage and soybeans are likely to enter the initial reproductive stages (R1) by the first week of July. The near-record temperatures also stimulated insect development and reproduction, resulting in a noticeable increase in pest pressure in nurseries, orchards and field crops.

LOOKING AHEAD

EUROPEAN CORN BORER: Larvae are primarily in the first and second instars and will begin entering the midribs of corn leaves next week. The treatment window for first-generation corn borers will close by June 28 in the far southern counties and 1-2 weeks later elsewhere, following the accumulation of 1,100 degree days (modified base 50°F).

APPLE MAGGOT: Flies are likely to begin emerging next week. Apple growers concerned about this pest are advised to set a minimum of three traps per 10 acres before the end of the month, increasing the density in July to one trap every 200-300 feet along the orchard perimeter. The traps should be hung at eye-level adjacent to wild hosts and near early-ripening cultivars.

JAPANESE BEETLE: Adults are appearing in the southern counties. Damage to fruit trees, ornamentals, nursery stock and field crops can be expected for the next two months across most of the state, with peak beetle emergence expected by mid- to late July. Soil-applied systemic insecticide treatments must be made 3-4 weeks in advance of beetle emergence and are no longer advised.

SPOTTED WING DROSOPHILA: Emergence of flies has been confirmed in Dane and Sauk counties as of June 21. The appearance of SWD adults should be viewed as an early warning to fruit growers to increase monitoring efforts and make preparations for SWD management.

WESTERN BEAN CUTWORM: The first moths of the season were captured in pheromone traps this week, signaling the start of the annual flight. One was caught near

Ripon in Fond du Lac County and three others were collected near West Salem in La Crosse County. Scouting corn plants for egg masses and small larvae is recommended at 25% moth emergence, predicted for the week of July 8-14 in southern Wisconsin.

CODLING MOTH: Egg hatch has peaked in most apple orchards. First-generation larvae are presently in the early to intermediate growth stages, and now is an opportune time to check fruits for entry holes and frass to assess codling moth control programs. Moth counts in pheromone traps varied widely this week from 1-37 per trap.

TRUE ARMWORM: A significant capture of 214 moths documented in the Janesville black light trap from June 14-20 suggests that egg laying has intensified. More larval armyworms can be expected in corn, wheat and other crops by early to mid-July.

True armyworm larva Krista Hamilton DATCP

DEGREE DAYS JANUARY 1 - JUNE 20

LOCATION	50°F	2017	NORM	40°F
Dubuque, IA	1130	1093	934	1854
Lone Rock	987	969	—	1673
Beloit	961	997	945	1640
Sullivan	869	904	870	1503
Madison	947	949	897	1616
Juneau	893	887	—	1524
Racine	761	836	—	1373
Waukesha	797	860	—	1412
Milwaukee	788	830	763	1408
Hartford	844	849	—	1467
Appleton	863	805	—	1457
Green Bay	828	775	758	1414
Big Flats	912	876	—	1539
Hancock	832	801	875	1413
Port Edwards	840	790	850	1427
La Crosse	1048	979	989	1727
Eau Claire	967	864	876	1579
Cumberland	786	642	789	1327
Bayfield	597	440	—	1058
Wausau	758	676	775	1310
Medford	754	645	699	1297
Crivitz	790	714	—	1337
Crandon	705	579	613	1225

Method: Modified B50; Modified B40 as of January 1, 2018. NORMALS based on 30-year average daily temps, 1981-2010.

FORAGES & GRAINS

PLANT BUG: Surveys conducted in Columbia, Dane, Dodge, Marquette, Waushara and Waupaca counties yielded averages of 0.1-1.5 adults and nymphs per swep, which is still low in comparison to the economic threshold of five per sweep in alfalfa. Both the alfalfa plant bug and tarnished plant bug species are common in sweep net collections.

POTATO LEAFHOPPER: Nymphs are appearing in second-crop alfalfa. Populations remain below economic thresholds, although a few 8-11 inch fields in Waushara and Waupaca counties had averages approaching one per sweep. Counts in other parts of central and southern Wisconsin were generally below 0.4 per sweep. Crop scouts are reminded that potato leafhopper nymphs are seldom recovered in the bottom of the sweep net with the adults, but are instead found around the collar of the net. The neon-green nymphs move sideways when disturbed.

PEA APHID: Counts of this insect remain much the same as previously reported at around one per sweep. Pea aphid levels have increased throughout June in surveyed fields, which is contrary to their usual pattern of peaking by early June and then decreasing sharply before the end of the month. The recent heavy rain will likely lower populations in some areas.

ALFALFA WEEVIL: Larval populations are now less than 0.2 per sweep and pupation is occurring across the southern and central areas of the state. The alfalfa weevil season is expected to end by late June.

CORN

CORN ROOTWORM: Egg hatch has been underway since early June and should peak across much of the state before the end of the month. Corn root pruning assessments can begin about a week after peak egg hatch, or by early to mid-July. Continuous corn and areas with Bt performance issues should be the highest priority for inspection and root ratings.

EUROPEAN CORN BORER: Surveys this week found minor infestations affecting no more than 10% of plants in a few V9-V10 fields. Moths and first-instar larvae were the development stages observed. The larvae appeared to have hatched on June 16 or 17. Chemical and biological insecticides targeting first-generation ECB are only effective for about a week after egg hatch, and must be applied in the next few days in fields where small larvae are emerging. The treatment window is expected to close by June 24 near La Crosse, June 28 at Madison, and around July 4 near Appleton and Hancock.

European corn borer leaf feeding damage *Krista Hamilton DATCP*

WESTERN BEAN CUTWORM: Moth emergence began this week from La Crosse east to Fond du Lac County. Based on projected degree-day accumulations, 25% emergence of the moth population can be expected from July 8-14 in southern Wisconsin and during the week of July 15-21 in the central counties.

A new model developed by UNL and UMN entomologists shows that the optimal method for predicting the western bean cutworm flight uses simple degree-day calculations beginning March 1, with a 38°F lower threshold and a 75°F upper threshold. The new cumulative flight model indicates that 25% of moth flight should be complete when 2,577 degree-days (Fahrenheit) have accumulated. Consultants and field scouts are advised to begin inspecting pre-tassel-stage corn to estimate egg density around 25% moth emergence.

STALK BORER: Larval infestations seldom exceed 5% in most fields. This perimeter pest migrates from perennial grasses and broadleaf weed hosts in June and infests mainly the first 4-6 rows of corn. Significant damage is unlikely once plants have developed past the V7-V8 stages.

Stalk borer larva *Krista Hamilton DATCP*

TRUE ARMYWORM: Non-economic larval infestations affecting 1-4% of corn plants are common, with about 20% of fields surveyed in the last week showing at least a few plants with armyworm leaf-edge feeding damage and/or larvae. Increased vigilance is recommended since black light traps are registering significant flights (214 moths at Janesville from June 14-20) and because field conditions remain very favorable for armyworm problems.

SOYBEANS

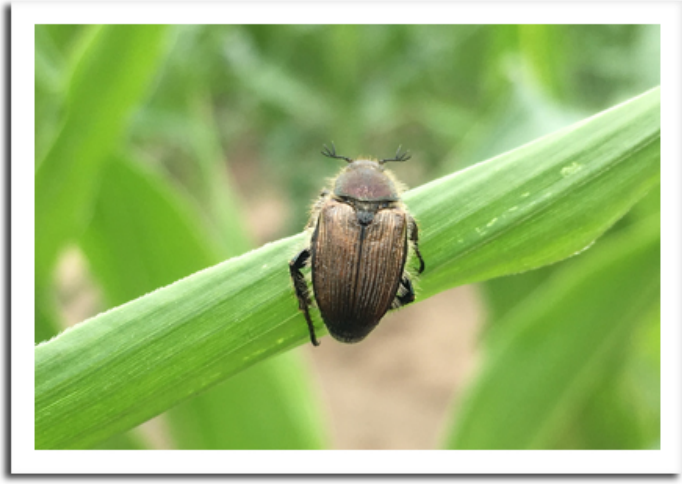
ROSE CHAFER: This insect is common this season, and light damage is noticeable in soybean fields on sandy soils in the southern two-thirds of the state. Defoliation levels have not exceeded the 30% threshold for pre-bloom soybeans in any field checked by DATCP as of June 21.

SOYBEAN APHID: Early colonies have been found in soybeans south of La Crosse County since June 4. Counts remain extremely low in most fields. Of the 25

sites surveyed from June 14-20, five had averages below one aphid per plant and 80% of the fields had no detectable aphid population. Routine monitoring for aphids should begin by early July.

Soybean aphids Krista Hamilton DATCP

SAND CHAFER: Low to moderate populations were encountered in soybeans and corn near Trempealeau on June 18. The adult beetles, notable for their similarity to Japanese beetles and for an attraction to light-colored clothing, are not known to cause economic damage to crops, though damage by the immature grubs to potato tubers has been reported. Only minor leaf feeding was observed in the soybean fields with significant numbers of chafers.



Sand chafer Krista Hamilton DATCP

FRUITS

APPLE MAGGOT: Emergence of adults is anticipated next week. Initial apple maggot treatments should begin 7-10 days after the first fly is captured on a yellow sticky trap and immediately if the fly is found on a red sphere, with later sprays following at 10- to 14-day intervals as long as flies are appearing on traps. A trapping density of one trap every 200-300 feet placed along the perimeter row is suggested. Orchards with past severe AM problems should also place a few traps in the orchard interior. The economic threshold for apple maggot control is one fly per unenhanced trap per week or five flies per enhanced trap per week.

Apple maggot fly Werner Eigelsreiter bugguide.net

CODLING MOTH: The spring flight has peaked in most southern Wisconsin orchards, though trap counts remain high at some sites. Economic captures of five or more moths per trap per week were reported from 13 of 27 cooperating locations (48%) from June 14-20.

Codling moth entries Shawn Steffan Utah State Extension

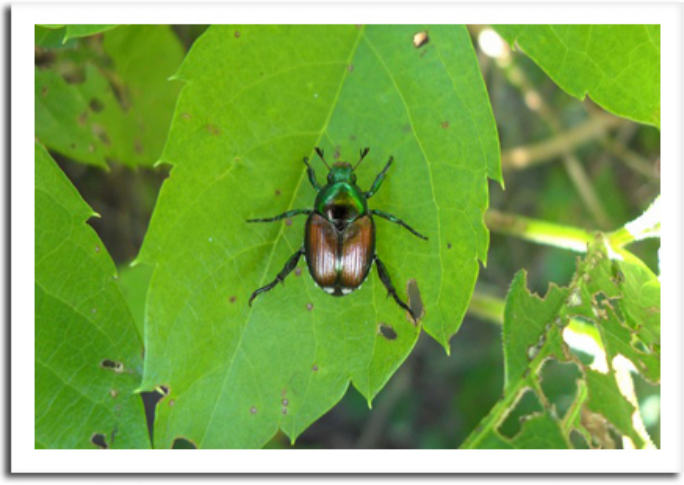
Apple growers are advised to continue monitoring degree days and CM trap counts until 650-700 units (modified

base 50°F) have accumulated from the spring biofix to determine if additional late flights require treatment. Most orchards south of La Crosse have accumulated about 450-600 degree days since May 20-26 when the biofix was set at warmer southern sites. Signs of fruit damage are becoming apparent, and scouting fruits for tiny, circular entry wounds should be underway.

SAN JOSE SCALE: Crawlers are emerging from beneath scales in southern and western Wisconsin orchards. Known "hotspots," or areas of suspected high SJS pressure, can be monitored using black electrical tape on scaffold branches. The tape should be wrapped adhesive side-down, and a thin layer of petroleum jelly applied to the outer side of the tape. Captures of 10-15 crawlers on several taped branches over the course of a few days, or 10 crawlers on one tape with zero on all other tapes, may warrant application. Treatments should be applied once the yellow crawlers are active, but before their white, waxy coverings (white cap stage) start to form on the leaves and branches. Conventional products for summer control include Esteem (pyriproxyfen) or Movento (spirotetramat). Options for organic growers are summer oil and biological control.

San Jose Scale crawler 'white cap phase' blogs.cornell.edu/jentsch/2014

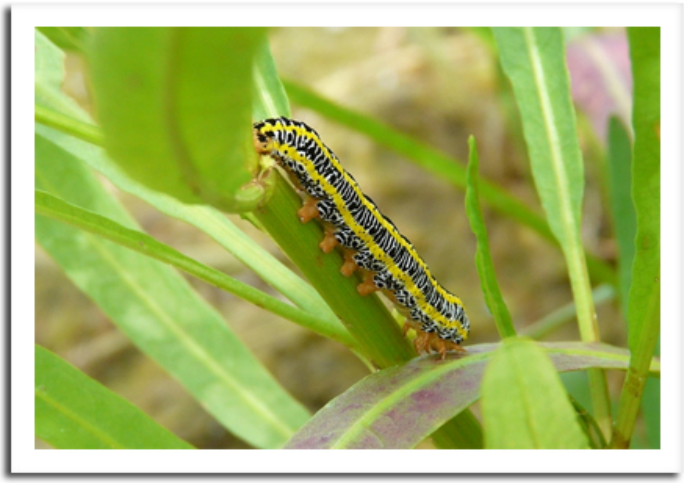
JAPANESE BEETLE: Adults are were observed on ornamentals and in field crops this week, suggesting that Neem oil repellant sprays or neonicotinoids must be applied soon, while populations are low and the beetles are beginning to immigrate into orchards. Neem oil is appropriate for organic systems and effective when applied repeatedly. PyGanic is another organically acceptable method for immediate contact control, but the material dissipates quickly if applied during the day. A third option is Surround WP (kaolin clay) which deters both Japanese beetle and apple maggots, although its efficacy against Japanese beetle is inconsistent.



Japanese beetle dnr.state.mn.us

VEGETABLES

ZEBRA CATERPILLAR: This infrequent pest with prominent black and yellow longitudinal stripes was defoliating kohlrabi leaves at a La Crosse County CSA on June 15. Larvae feed during the day on the foliage of a variety of broadleaf field and vegetable crops, ornamental trees and flowers, causing ragged leaves. The young caterpillars initially feed together in groups, but later separate and feed individually. The zebra caterpillar occurs sporadically in Wisconsin and is generally not considered a serious pest. Manual removal of the larvae is the preferred form of control.



Zebra caterpillar www.toronto-wildlife.com

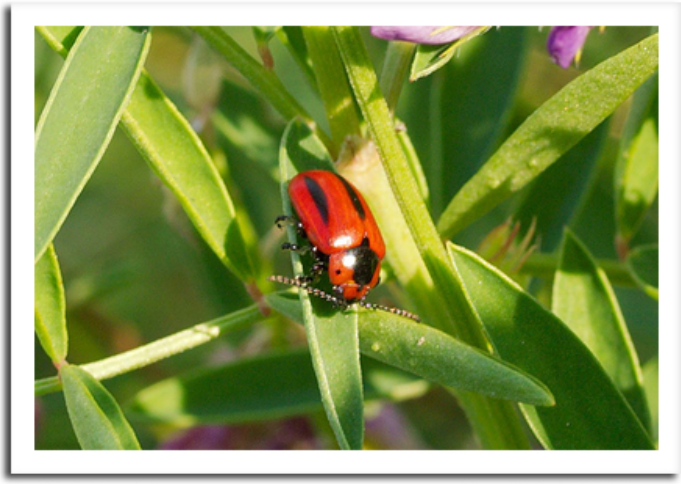
IMPORTED CABBAGEWORM: Damage caused by larger cabbageworms has become very conspicuous, making

the velvety green caterpillars generally easy to find and remove from gardens and smaller plantings. For larger commercial cabbage crops where chemical control may be required, ICW populations should be assessed weekly by examining 25-50 randomly-selected plants (depending on field size) and recording the number of infested plants. A plant is infested if eggs or caterpillars are found. Control decisions should be made based on a threshold of 30% infestation in the transplant to cupping stages; 20% infestation from the cupping to early head stages; and 10% from early heading until harvest. For broccoli and cauliflower between transplant and first flower or curd, the threshold is 50%, decreasing to 10% once flowers or curds begin to develop to maintain quality.

Imported cabbageworm larva *debsgardens.wordpress.com*

POTATO LEAFHOPPER: Development and reproduction has increased with intermittent June heat. Counts thus far have not justified treatment, but numbers are approaching the economic threshold of 1.0 per sweep in 8-11 inch alfalfa and 2.0 per sweep in alfalfa taller than 12 inches. This observation suggests populations are likewise increasing in vegetable hosts such as snap beans and potatoes. A threshold of one nymph per 10 leaves or one adult per sweep indicates control is justified for snap beans. The threshold for potatoes is 2.5 nymphs per 25 leaves or 0.5-1.0 adult per sweep.

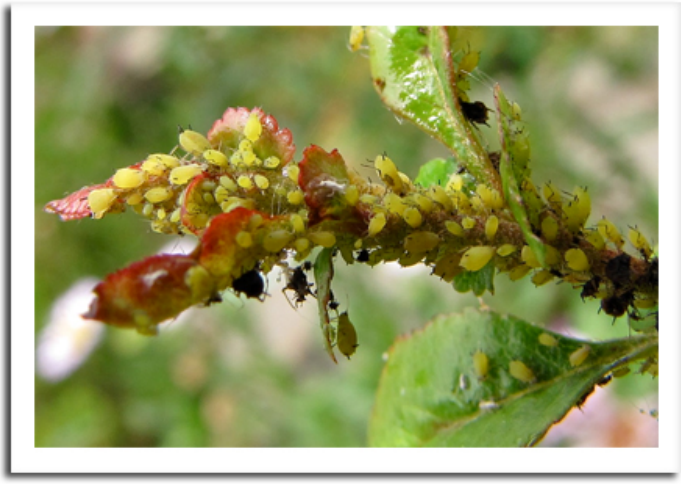
RED TURNIP BEETLE: This red and black beetle has been observed in Waushara County alfalfa in the past two weeks. Red turnip beetle is a sporadic pest in the Central Sands area of the state, feeding on plants in the mustard family. Hosts include broccoli, cabbage, kohlrabi, radish and turnip, but hoary alyssum and yellow rocket are thought to be the primary food plants. Small seedlings and transplants are the most susceptible to red turnip beetle feeding, while established plants can tolerate severe defoliation. Removing the adult beetles by hand is the recommended control. Beetle numbers usually begin to decline by early July.



Red turnip beetle *Doug Waylett flickr.com*

NURSERY & FOREST

APHIDS: A variety of aphids feeding on various herbaceous ornamentals and vegetables have been noted in nurseries and garden centers this month. Most plants are susceptible to aphid feeding, especially when young, and many species are primary vectors of plant diseases. Routine monitoring for aphids should be underway. Control options include dislodging with a forceful spray of water, using commercially available biological controls, or treating aphid problems with insecticidal soaps or oils.



Aphids on quince *Mike slugyard.com*

PHYTOPLASMA: As previously reported, nursery plants testing positive for phytoplasma were recently found in

Walworth County. Additional plants from Eau Claire and Jefferson counties have also tested positive. The infected plant species include Coreopsis, Echinacea, Monarda and Veronica. Phytoplasma symptoms generally include bushy growth with increased branching, yellowing, greening of flowers from loss of pigment (virescense), leaf-like structures in place of flowers (phyllody), and stunting.

SLUGS: Persistent wet conditions are providing favorable conditions for slug activity and damage throughout much of the state. Because slugs are nocturnal feeders, plant damage appears overnight and the cause is usually not apparent. Species such as the grey field slug, *Deroceras reticulatum,* are capable of inflicting substantial crop and garden damage, traveling up to 40 feet in one night.

Slug damage on hosta *gardeningonthego.files.wordpress.com*

Slug activity quickly subsides with drier weather, but if control is warranted, a few options are as follows: sprinkling diatomaceous earth atop the soil beneath high-risk plants; encircling containers and small raised beds with protective copper tape; or trapping slugs by placing wet newspapers beneath boards laid on the ground. Slug baits with an iron phosphate component are often a good solution in mulched perennial beds.

ARMORED SCALE: The armored scale *Duplachionaspis divergens* was found on Japanese silver grass (Miscanthus sinensis) at two nursery dealers in southeastern Wisconsin. This southern U.S. scale insect has not previously been reported in Wisconsin. Nursery inspectors acted quickly to have infested plants removed and destroyed to prevent the pest from spreading. The armored scale has an elongate white cover and can produce multiple generations per year. It is unknown if the insect can survive Wisconsin winters. Any plant suspected of being infested with this scale should be immediately double-bagged and disposed of.

Armored Scale Miscanthus *Marcia Wensing DATCP*

WEED SEEDS: Unidentified weed seeds were common on the leaves of many plantain lily hostas at a nursery dealer in Rock County. Nursery managers and consumers are reminded to make sure plants are clean before selling or buying to eliminate this potential pathway for the spread of unwanted or invasive plant species.

Weed seeds on hosta *Shanon Hankin DATCP*

APPLE INSECT & BLACK LIGHT TRAP COUNTS JUNE 14 - 20

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	DWB[5]	LPTB[6]	BMSB[7]	AM RED[8]	YELLOW[9]
Bayfield	Keystone	0	3	0	0	2	13	0		
Bayfield	Orienta	4	0	0	—	11	1	—		
Brown	Oneida	320	0	6	16	12	3	0		
Columbia	Rio	—	—	—	—	—	—	—		
Crawford	Gays Mills	110	7	1	4	2	35	—		
Dane	DeForest	0	0	5	—	—	4	—		
Dane	Mt. Horeb	26	33	1	22	—	50	0		
Dane	Stoughton	56	39	16	13	1	1	0		
Fond du Lac	Campbellsport	36	0	0	18	3	4	0		
Fond du Lac	Malone	13	5	9	20	18	4	0		
Fond du Lac	Rosendale	3	7	4	4	1	2	0		
Grant	Sinsinawa	38	12	37	21	—	—	—		
Green	Brodhead	32	48	6	28	—	12	—		
Iowa	Mineral Point	165	36	22	34	—	50	0		
Jackson	Hixton	9	2	4	4	3	6	0		
Kenosha	Burlington	150	6	6	15	—	19	0		
Marathon	Edgar	75	0	0	15	—	11	—		
Marinette	Niagara	3	0	0	18	—	11	—		
Marquette	Montello	115	39	1	32	—	8	0		
Ozaukee	Mequon	10	0	10	3	0	5	—		
Pierce	Beldenville	131	0	6	6	—	15	—		
Pierce	Spring Valley	36	1	0 MD	5	29	56	0		
Racine	Raymond	80	3	26	22	29	—	—		
Racine	Rochester	189	11	12	31	1	0	**2**		
Richland	Hill Point	69	58	1	14	—	31	—		
Sheboygan	Plymouth	109	0	0 MD	13	7	30	0		
Walworth	East Troy	22	8	0	11	—	3	0		
Walworth	Elkhorn	30	11	0	20	—	1	0		
Waukesha	New Berlin	27	0	21	35	—	60	—		

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller; [5]Lesser peachtree borer; [6]Dogwood 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	Pardeeville	0	1	1	0	5	0	2	13	1	0
Dodge	Beaver Dam	0	3	0	6	6	0	5	27	0	0
Fond du Lac	Ripon	0	0	0	1	8	0	5	9	0	0
Grant	Prairie du Chien	1	0	0	0	0	0	1	0	0	0
Manitowoc	Manitowoc	0	0	0	0	0	7	22	14	0	0
Marathon	Wausau	0	0	0	0	2	0	0	4	0	0
Monroe	Sparta	0	1	0	0	0	3	1	214	3	0
Rock	Janesville	2	0	0	1	11	0	0	5	0	0
Walworth	East Troy	0	4	0	0	0	0	15	10	0	0
Wood	Marshfield	0	0	0	0	2	0	0	4	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.