

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

Heat and humidity returned to Wisconsin, accompanied by damaging early-week thunderstorms. After an extended period of dry, settled weather, a line of strong to severe storms developed Monday morning and impacted much of the southern portion of the state. Heavy rainfall, hail, and crop damage were reported. Additional isolated storms also occurred in northeastern Wisconsin. The drier, quiet conditions that followed supported harvesting of alfalfa, potatoes, small grains and vegetables, while the showers benefited crops in the reproductive to filling stages of development. Despite recent storms, growing conditions have been very favorable this season and summer crops are progressing well ahead of the normal pace, with 81-90% of corn, oats, potatoes and soybeans rated as good to excellent. Apple picking has already started in Dane County where one apple grower reported harvesting the early varieties 'Discovery,' 'Lodi,' 'Pristine,' and 'Williams Pride.'

LOOKING AHEAD

CORN ROOTWORM: Preliminary results of the annual beetle survey indicate adult rootworm populations are higher than last year. The current state average based on sampling of 121 grain corn fields is 0.6 beetles per plant, with 30% (36) of fields having populations above the

economic threshold of 0.75 beetle per plant. Last year's state average was 0.3 beetles per plant. The survey includes 229 cornfields and is expected to be complete by August 28.

BROWN MARMORATED STINK BUG: Late-summer populations are increasing in areas of the state where BMSB is established, and it is particularly important for fruit growers and gardeners to remain alert for stink bug activity from now through October. Populations in the southeastern, south-central and east-central regions are large enough that swarming may occur on warm fall days as the stink bugs aggregate prior to moving indoors for the winter. Overwintering sites may include houses with open exposure to the south and west and with agriculture crops nearby.

CORN EARWORM: Late-season migration flights continued this week. The DATCP pheromone trapping network captured 166 moths in 12 traps between August 6 and 12, for a cumulative total of 784 moths since mid-July. The high count for the reporting period was 51 moths at Ripon in Fond du Lac County. The latest activity signals that fresh market and processing sweet corn remains at risk of infestation and should be monitored until harvest.

LATE BLIGHT: The UW confirmed the first case of potato late blight of the season in Adams County on August 10. According to UW-Madison Vegetable Plant Pathologist

Dr. Amanda Gevens, removal and destruction of infected potato and tomato plants, along with application of anti-sporulant fungicides (in both infected and nearby fields) is required to limit development of new infections.



Late blight lesion on tomato leaf

Krista Hamilton DATCP

EUROPEAN CORN BORER: The treatment window for second-generation larvae will close next week across southern Wisconsin. Final inspections of sweet corn for egg masses and small larvae are advised before the 2,100 degree days (modified base 50°F) threshold is reached.

WESTERN BEAN CUTWORM: Counts have declined markedly at most sites as the annual moth flight period ends. A total of 293 moths were captured this week, compared to 776 last week. The cumulative state count as of August 13 is 3,748 moths in 58 traps, or an average of 64 per trap. This season's moderate flight has produced localized damaging larval populations in a few areas. Intermediate-stage larvae were observed this week in Buffalo and Trempealeau counties.

FORAGES & GRAINS

POTATO LEAFHOPPER: Early August surveys in alfalfa found moderate to high counts of 0.5-3.0 leafhoppers per sweep, with an average of 1.8 per sweep. Pressure from this insect has generally been lower than last year when spring weather patterns brought large migrations into the state, but a few very dry fields in western Wisconsin fields sampled in the past week contained high averages of 2.1-3.0 leafhoppers per sweep. As a reminder, the threshold for leafhoppers in alfalfa 12 inches and taller is 2.0 adults and nymphs per sweep.

DEGREE DAYS JANUARY 1 - AUG 12

LOCATION	50°F	2019	NORM	40°F
Dubuque, IA	2237	2200	2051	3503
Lone Rock	1999	1995	—	3222
Beloit	2090	2036	2083	3334
Sullivan	1933	1886	1969	3128
Madison	2045	2013	1985	3264
Juneau	1849	1815	—	3006
Racine	1876	1735	—	3057
Waukesha	1946	1860	—	3127
Milwaukee	1917	1809	1880	3093
Hartford	1812	1783	—	2961
Appleton	1906	1797	—	3045
Green Bay	1861	1747	1776	2977
Big Flats	1858	1777	—	3015
Hancock	1773	1706	1926	2902
Port Edwards	1776	1703	1891	2910
La Crosse	2028	1963	2171	3242
Eau Claire	2022	1867	1957	3209
Cumberland	1607	1576	1832	2692
Bayfield	1516	1367	—	2543
Wausau	1556	1499	1792	2626
Medford	1501	1465	1641	2568
Crivitz	1701	1627	—	2765
Crandon	1518	1482	13998	2545

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

GRASSHOPPER: Late-season grasshopper activity has increased in alfalfa and other crops. Grasshopper damage to forage crops can be serious at this time of year, especially in new alfalfa seedings and when dry weather slows plant regrowth after harvest. Insecticide use is justified only if populations reach 20 grasshoppers per square yard at the margins or eight per square yard within an alfalfa field. Spot treatment is acceptable when the defoliation is concentrated at the field edges.

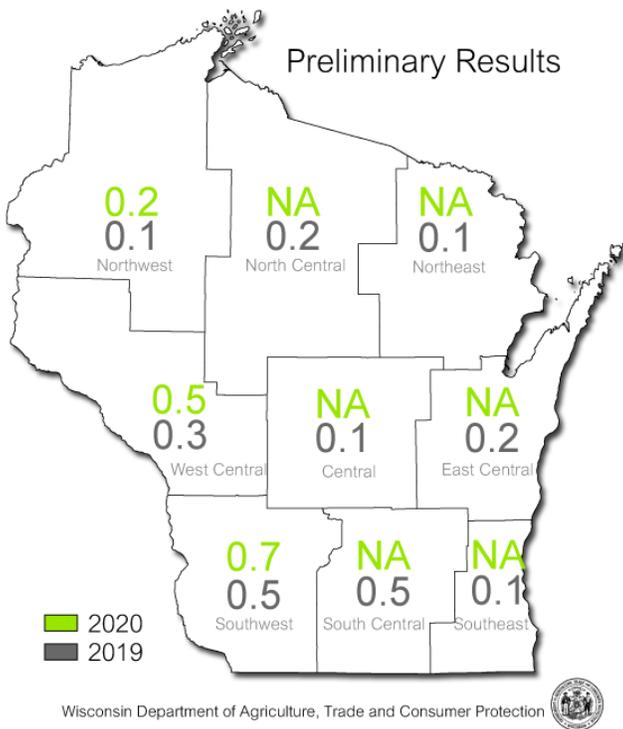
PEA APHID: Populations of this forage pest are still low. Most fields sampled from August 6-13 contained fewer than 1.2 per sweep (120 per 100 sweeps).

CORN

CORN ROOTWORM: DATCP's annual beetle survey is now in progress. Preliminary results from July 30-August 13 indicate populations have increased in all three western districts (northwest, west-central and southwest).

Above-threshold averages of 0.75 or more beetles per plant have been found in 36 of the 121 fields (30%) sampled to date, with the heaviest pressure recorded in southwestern fields. 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 peaks. 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.

District Average Number of Corn Rootworm Beetles per Plant



EUROPEAN CORN BORER: The treatment window for second-generation larvae has closed near Beloit, Lancaster, and Platteville, but will remain open for one more week in parts of southern and 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.

CORN EARWORM: Locally significant flights of 25-51 moths per trap were reported from the Arlington, Bristol, Mayville, and Ripon monitoring locations, while the 14 other sites collected no more than 10 moths per trap during the week. A cumulative total of 784 moths have been captured in 18 pheromone traps to date. Sweet corn growers should continue to follow CEW migration reports and maintain treatments as long as moth activity

persists and green silks are available for oviposition. Counts for the week ending August 12 were: Arlington 3, Arlington North 27, Bristol 33, Coon Valley 10, Cottage Grove 4, Madison North (airport) 2, Manitowoc 3, Mayville 25, Ripon 51, Sun Prairie 5, Sun Prairie North 1 and Watertown 2.



Corn earworm larva

Krista Hamilton DATCP

CORN LEAF APHID: Colonies of this aphid are appearing on corn ears and leaves in southern and western Wisconsin. Corn leaf aphids usually do not interfere with pollination unless they develop early and populations grow rapidly, and a large percentage of corn tassels become saturated with aphids and their honeydew secretions.



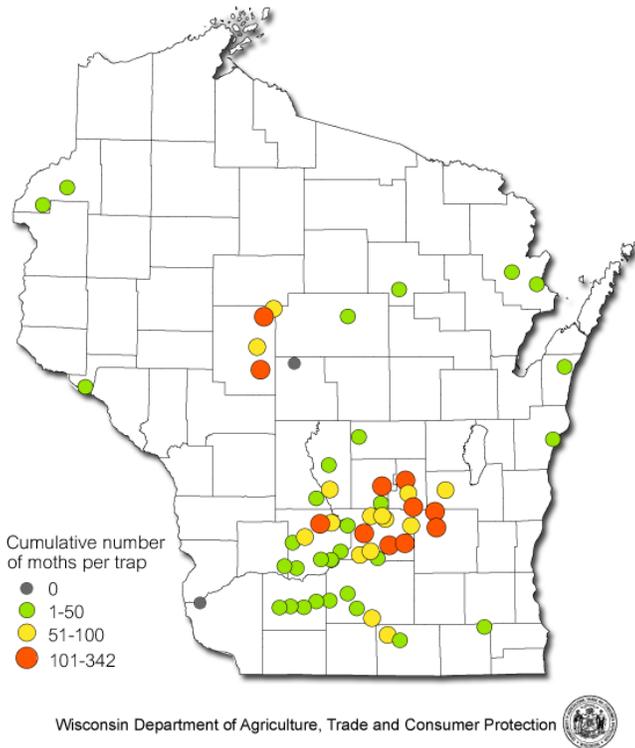
Corn leaf aphids

Krista Hamilton DATCP

WESTERN BEAN CUTWORM: Moth counts have declined at most monitoring locations. Three traps in Clark and Green Lake counties continued to register moderate captures of 25-55 moths per trap this week, while counts at nearly all other sites fell below 10 moths for the reporting

period. As of August 13, the state cumulative total is 3,748 moths in 58 traps (64 per trap average). The highest individual count for the 10-week monitoring period is 382 moths near Princeton in Green Lake County.

Western Bean Cutworm Moth Counts June 24 - August 12



above-threshold populations of 250 aphids per plant. For comparison, the 2019 survey found a state average of six aphids per plant, the 2018 average was 14 aphids per plant, and averages from 2010-2017 ranged from 6-55 aphids per plant. This season's state average is a two-fold increase from last season's average, but still very low overall. Although some localized fields have presumably developed economic populations >250 aphids per plant (based on sprayer tracks), survey results suggest that aphid control has generally not been required for most soybean acres this summer.



Soybean aphids

Krista Hamilton DATCP

SOYBEANS

JAPANESE BEETLE: Defoliation has been observed in 80% of the soybean fields sampled by DATCP since July 20. Last season at this time, 75% of fields checked had some degree of Japanese beetle feeding. Counts taken during the aphid survey ranged from 1-138 beetles per 100 sweeps, with a state average of 17 per 100 sweeps (14 per sweep in 2019). The highest counts of 100 or more beetles per 100 sweeps were recorded in Clark, Crawford and Lafayette counties. Although Japanese beetle perimeter defoliation is prevalent in soybeans throughout the state again this season, the degree of injury in most fields is not severe enough to justify treatment.

SOYBEAN APHID: Densities recorded during the annual aphid survey have been low, aside from a few moderately infested fields in western Wisconsin. The state average count in 171 fields sampled from July 20-August 13 is only 13 aphids per plant, with no surveyed fields showing

FRUITS

OBLIQUEBANDED LEAFROLLER: DATCP cooperators are reminded to maintain pheromone traps for this insect well into September. Second-generation larvae occasionally cause severe fruit damage late in the growing season and moth counts in late August and September can be a predictor of damage potential of the overwintered larval population next spring.

CODLING MOTH: Moderate to high counts were reported from nine of 24 cooperating orchard locations in the past week. The largest captures of 16-17 moths per trap were in Marathon and Oneida counties. Approximately 90% of second-flight adults will have emerged once 1,700 degree days (modified base 50°F) have accumulated from the first biofix, and pheromone trap checks may be discontinued at the end of the month.

BROWN MARMORATED STINK BUG: Adults have been captured on survey traps in Dane, Fond du Lac, Racine and Walworth counties in the past 3-4 weeks, signaling

the potential for fruit injury in apple orchards prior to harvest. Late-summer populations are increasing in areas of the state where BMSB is established, and it will be important for fruit and vegetable growers to remain alert for stink bug activity through October.



Brown marmorated stink bugs

macgardens.org

APPLE MAGGOT: Peak emergence of flies has occurred across southern and central Wisconsin and activity is generally decreasing, with a few exceptions. The external depressions and brown, internal larval tunnels indicative of AM infestation are beginning to appear on apples in orchards where AM flies have been more abundant since mid-July. Growers should continue to monitor AM traps through the first week of September.



Apple maggot damage

simplicitysoil.wordpress.com

SPOTTED TENTIFORM LEAFMINER: The third and last flight of the season continued this week, with counts ranging widely from 10-625 moths at 24 monitoring locations. Most orchards registered lower weekly captures of

fewer than 150 moths. Moth activity is expected to subside by mid-September.

VEGETABLES

LATE BLIGHT: The late blight pathogen *Phytophthora infestans* was confirmed by the UW in an Adams County potato field on August 10. The type was identified as US-23, which can be controlled with the fungicide Ridomil. UW-Madison Vegetable Plant Pathologist Dr. Amanda Gevens is advising potato and tomato growers in the Adams County area to increase scouting for late blight symptoms, remove and destroy any infected plants, and maintain weekly treatments with an antispore fungicide for infected fields and surrounding fields.

Gardeners are advised to monitor plants for signs of infection, including brownish-black water soaked leaf lesions, dark stem lesions or sunken golden- to dark brown spots with distinct rings on the fruit surface. Removal and destruction of infected plants is required if lesions are noticed. Composting will not generate sufficient heat to kill the pathogen and is not recommended.



Late blight on tomato fruits

Krista Hamilton DATCP

Registered fungicides for potato late blight in Wisconsin are provided in the following link: <https://cdn.shopify.com/s/files/1/0145/8808/4272/files/A3422-2020.pdf>. As a reminder, the UW Plant Disease Diagnostic Clinic processes late blight samples (tomato and potato) free of charge: <https://pddc.wisc.edu/>.

CUCURBIT DOWNY MILDEW: The UW reports that downy mildew has not been identified on cucurbit crops in Wisconsin as of August 13. In contrast, powdery mil-

dew has been favored by recent hot, dry weather and is beginning to appear southern and central Wisconsin. Fungicide information is available in the Vegetable Crop Update newsletter: <https://cdn.shopify.com/s/files/1/0145/8808/4272/files/A3422-2020.pdf>



Powdery mildew on squash

Krista Hamilton DATCP

SQUASH BUG: Egg deposition is still occurring on squash in home gardens. Adults and nymphs are likely to continue feeding on ripening vine crops throughout fall. Chemical control of squash bugs becomes less useful as fruits mature, whereas cultural controls such as removing plant debris around the garden gain importance and will be critical for eliminating winter hibernation sites. Crop rotation is also suggested to reduce habitat for the overwintering adult population, which can survive the winter months under plant debris and cause damage to transplants and seedlings next spring.



Squash bug damage

Krista Hamilton DATCP

TOMATO FRUITWORM: Tomatoes are at increased risk of egg deposition and larval infestation by this pest as

more of the state's sweet corn matures beyond the green silk stage and no longer provides attractive egg laying sites. The female moths lay eggs near green fruits and the larvae rapidly enter tomatoes from the stem end, consuming the interior and leaving a cavity filled with fluid and droppings. Fruits are inedible after fruitworm infestation and should be removed and discarded.



Tomato fruitworm larva

growbetterveggies.com

NURSERY & FOREST

VENTURIA LEAF AND SHOOT BLIGHT: Nursery inspectors observed late-season symptoms of Venturia blight in landscape and woodland quaking aspen trees in Jackson County. This disease infects the leaves and shoots of aspen and poplars and is favored by wet spring conditions. Leaf symptoms first become evident in May as irregular brown or black spots that cause leaves to appear deformed. Infected shoots turn black, brittle, and curl to resemble a "shepherd's crook." Only young shoots and leaves are susceptible.

Death of shoots reduces height growth and can deform small trees by causing bends in the stems. Repeated infection weakens trees and increases susceptibility to secondary attack by other organisms. The fungus overwinters in infected shoots. Fungal spores are rain-splashed from shoots blighted the previous season to the newly emerging shoots and leaves. Trees in crowded plantings where humidity is trapped near the ground are more often severely impacted.

Fungicides labeled specifically for this disease are not available. If practical, winter pruning of blighted shoots, cutting at a junction well below the margin between

healthy and diseased tissue, is recommended. Raking fallen leaves is also helpful. Trees less than 10 feet tall are at greatest risk. Once trees are over 15 feet in height the damage becomes negligible.



Venturia shoot blight on aspen

DATCP Nursery Program

FIREBLIGHT: Recent warm, humid weather has favored the development of fire blight bacterium in southwestern and central Wisconsin nurseries and orchards. Last week's inspections found substantial fire blight infections in Cortland, Honeycrisp, Johnathon, and State Fair landscape apple trees, as well as in Parker, Patten, and Semi-Dwarf Anjou ornamental pear trees.



Branch or 'strike' infected with fire blight

M. Allen treexperts.mb.co

These pathogenic bacteria multiply on the edge of cankers formed during the previous year and are disseminated by insects, wind, and rain splash. Fire blight symptoms include cankered twigs and branches with blackened, drooping foliage that often appears to have been scorched. Prompt removal of cankered

branches or "strikes" 12 inches up from the diseased area can help reduce the problem. Sterilizing tools with a 10% bleach solution between cuts is essential when pruning out fire blight.

OYSTERSHELL SCALE: Damaging infestations of these armored scales were noted in eastern Marathon County on dogwood and lilac landscape shrubs. Oystershell scales feed on plant tissue and may completely coat branches when populations are high, causing dieback and branch death. Management can include any combination of pruning infested branches, carefully scraping off scale covers from overwintering scales, applying horticultural oil before bud break (to suffocate eggs laid on the plant), and spraying insecticide when the crawlers are active. At this time of year, pruning heavily infested branches (if practical) is the only control option.



Oystershell scale on dogwood

Timothy Allen DATCP

CROWN GALL: Azalea 'Golden Lights' at a central Wisconsin grower were diagnosed with crown gall. Caused by the pathogen *Agrobacterium tumefaciens*, this bacterial disease causes host plants to produce galls on the crown, roots, or branches, and often—as in this case—near the soil line or graft union. The galls are soft and round at initial formation, but later develop an irregular corky surface with a woody interior that darkens with age. Infected plants become stunted, discolored, and begin to die back from insufficient nutrient uptake. Young plants eventually wilt and die, while older plants may survive in a weakened condition.

Bacterial entry is usually through a natural opening such as a lenticel or a fresh wound that is less than 24 hours old. Once introduced, the crown-gall bacterium survives in diseased tissue and in the soil, where it can persist as

a saprophyte in organic debris for several years. The bacterium is spread in soil runoff, by rain splash or by machinery, and may opportunistically infect new plants.

Diseased plants should be removed and destroyed along with their soil if they are potted. Prevention practices include avoiding plant wounds or injury, sterilizing pruning tools, and not replanting in a previously infested area with susceptible species for five years. Planting only certified clean stock is always advised.

EMERALD ASH BORER: Larvae have been collected from beneath the bark of infested ash trees for the first time in the following four Wisconsin counties: Dunn (Town of Rock Creek), Oconto (Town of Little Suamico), Pepin (Towns of Lima and Waterville), and Shawano (City of Shawano). These are the first new county detections for 2020. In addition, DATCP continues to track new EAB detections within infested counties, and 31 new municipal detections have been confirmed so far this year. EAB has been found in 56 of Wisconsin's 72 counties since 2008.

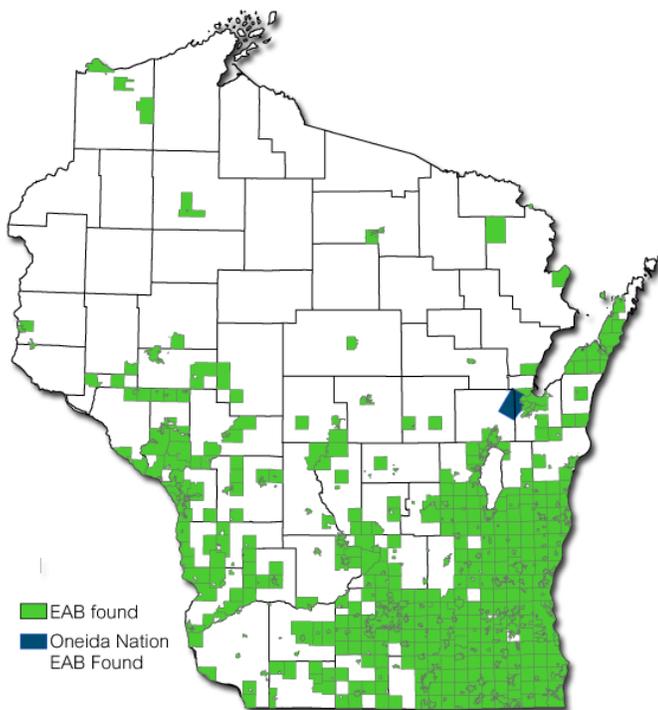
feeding and egg laying mostly occurs in the upper canopy of ash trees.



Emerald ash borer

www.ipm.illinois.edu

Emerald Ash Borer Detections 2008-2020



■ EAB found
 ■ Oneida Nation EAB Found

Wisconsin Department of Agriculture, Trade and Consumer Protection



Emergence of EAB adults is currently peaking in the northern half of the state and has just peaked in the south. The metallic green beetles are rarely observed since

APPLE INSECT & BLACK LIGHT TRAP COUNTS AUGUST 6 - 12

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	DWB ⁵	LPTB ⁶	BMSB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	10	0	0	0	2	0	0	3	2
Bayfield	Oriente	20	2	0	0	10	1	0	0	0
Brown	Oneida	400	15	17	12	25	0	0	2	0
Columbia	Rio	167	58	2	0	0	7	0	1	0
Crawford	Gays Mills	—	8	7 MD	2	—	4	—	3*	0
Dane	Mt. Horeb	69	81	3	2	0	0	1	0	0
Dane	McFarland	71	52	2	1	5	0	0	0	0
Dane	Stoughton	236	86	11	1	1	1	0	1	2
Fond du Lac	Campbellsport	52	17	0	1	0	0	0	—	—
Fond du Lac	Malone	93	1	8	9	9	9	1	6**	1**
Fond du Lac	Rosendale	134	5	3	3	1	7	0	2	1
Green	Brodhead	—	—	—	—	—	—	—	—	—
Iowa	Mineral Point	625	5	12 MD	0 MD	0	3	0	2**	—
Jackson	Hixton	97	7	2	0	1	0	0	0	1
Kenosha	Burlington	225	22	8	9	34	0	0	13**	—
Lafayette	Belmont	12	11	0 MD	0	0	0	0	0	0
Marathon	Edgar	497	8	16	0	34	0	0	0	1
Marinette	Niagara	82	0	0 MO	0	3	0	0	0	0
Marquette	Montello	324	42	1	0	2	5	0	0	0
Ozaukee	Mequon	30	0	10	0	3	0	0	1	—
Pierce	Beldenville	—	—	—	—	—	—	—	—	—
Pierce	Spring Valley	152	27	0 MD	0	21	3	0	0*	1
Racine	Raymond	309	9	11	0	1	0	0	0	0
Racine	Rochester	124	19	5	0	3	0	2	4*	0
Richland	Hill Point	51	3	—	0	5	8	0	2**	2**
Sheboygan	Plymouth	—	—	—	—	—	—	—	—	—
Walworth	East Troy	—	—	—	—	—	—	—	0	0
Walworth	Elkhorn	—	—	—	—	—	—	—	—	—
Waukesha	New Berlin	100	4	3	0	0	0	0	0	0

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵Dogwood borer; ⁶Lesser peachtree borer; ⁷Brown marmorated stink bug; ⁸Apple maggot red ball; *Unbaited; **Baited; ⁹Apple 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	0	0	0	0	0	0	1	9	0	0
Columbia	Pardeeville	0	2	0	14	11	5	4	14	2	1
Dodge	Beaver Dam	0	0	0	7	3	1	0	0	0	1
Fond du Lac	Ripon	0	2	0	39	11	1	3	8	0	4
Grant	Prairie du Chien	1	0	0	0	0	1	0	0	0	0
Langlade	Antigo	0	1	0	7	0	4	0	6	0	6
Manitowoc	Manitowoc	0	0	0	0	0	0	1	3	0	0
Marathon	Wausau	0	0	0	25	0	0	25	5	0	1
Monroe	Sparta	0	0	0	0	6	0	0	0	0	3
Rock	Janesville	0	0	0	5	0	0	0	0	0	0
Walworth	East Troy	1	0	1	7	0	1	0	2	0	4
Waushara	Hancock	—	—	—	—	—	—	—	—	—	—
Wood	Marshfield	1	1	5	13	0	1	16	2	1	1

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