

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

Unseasonably cold weather with occasional rain and isolated thunderstorms predominated much of the week. Nighttime temperatures were sub-freezing at times and widespread light frosts developed over parts of eastern and northern Wisconsin. Insect activity was not slowed significantly by the cool conditions. Populations of most alfalfa pests, namely weevils, pea aphids and plant bugs, continued to build up in many fields. Alfalfa is rapidly being cut and a large proportion of alfalfa weevil larvae are expected to be decimated by harvest operations. The emergence of corn and soybeans is also proceeding quickly and is ahead of last year and the 5-year average. The Wisconsin Statistical Reporting Service data for the period ending May 31 shows that 71% of the state's corn crop and 40% of the soybean crop has emerged, although warmer temperatures are needed to accelerate plant growth.

LOOKING AHEAD

PEA APHID: A dramatic increase in numbers is evident in alfalfa. Surveys conducted in the south-central and southeastern counties found counts of 25-1,000 per 25 sweeps, with an average of 162 per 25 sweeps. An alfalfa grower near Lake Mills in Jefferson County reported extremely high numbers on his discbine mower

after harvest, apparently "the most aphids he has seen in 40 years". Migration to peas has been noted in the Westfield area of Marquette County and economic populations may develop in some fields in the next week.

EUROPEAN CORN BORER: Female moths are depositing eggs on vegetables and weed hosts in Dane, Grant, Iowa, La Crosse and Rock counties, as well as in other areas where 450 degree days (base 50°F) were recently surpassed. Egg masses should be detectable in the tallest corn fields in the week ahead.

SOYBEAN APHID: No reports or observations regarding this insect were received as of June 4. Initial colonization of soybeans can be anticipated in the next two weeks. Previous first detections occurred on June 18 in 2008, May 24 in 2007, June 7 in 2006, and June 3 in 2005.

STALK BORER: Larvae have begun moving from adjacent grassy areas into corn. Light damage affecting fewer than 5% of plants was detected in the marginal rows of fields in Columbia, Dane and Waushara counties in the past week. Approximately 10% of the larval population will migrate from grasses by 1,400 degree days (base 41°F) and 50% percent will have moved by 1,700 degree days.

WESTERN BEAN CUTWORM: Pheromone traps to monitor the emergence, activity and relative abundance of the adult western bean cutworm will be deployed

beginning Thursday, June 11 and checked weekly through mid-August. Persons interested in participating in the trapping network should email Krista Hamilton at krista.hamilton@wi.gov or call 1-866-440-7523 before June 10. Please supply your name, address, telephone number, and indicate the number of traps to be placed.

ALERTS

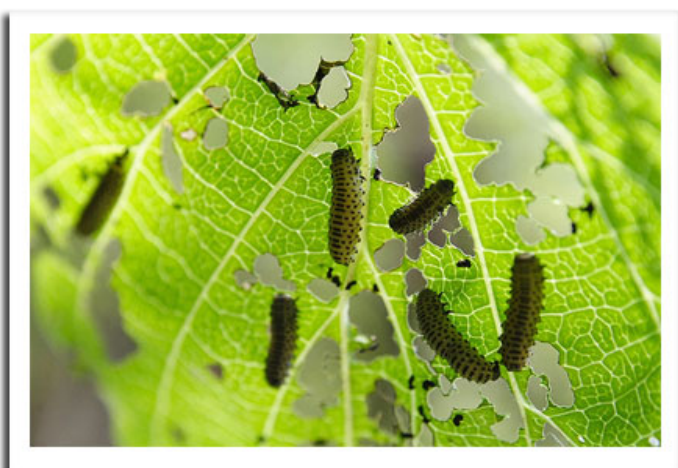
VIBURNUM LEAF BEETLE: The UW-Madison Insect Diagnostics Lab confirmed the identification of viburnum leaf beetle in southern Dane County on May 20. This represents the first discovery of this invasive, European beetle in Wisconsin. Other states with established populations include Maine, New Hampshire, New York, Ohio, Pennsylvania, Vermont and Ontario, Canada. It is speculated that viburnum leaf beetle was introduced into the state on infested nursery plants.

This exotic species is particularly damaging because both the adult and immature forms injure viburnums. Successive feeding by larvae and adults prevents shrubs from re-leafing and may cause plant death after 2-3 years of heavy infestation. Gardeners, landscapers and nursery stock growers and retailers should be alert to the characteristic skeletonization of viburnum leaves caused exclusively by these insects.

DEGREE DAYS JANUARY 1 - JUNE 4

LOCATION	50°F	2008	NORM	48°F	40°F
Dubuque, IA	526	487	—	543	1070
Lone Rock	518	445	—	521	1024
Beloit	531	507	—	549	1076
Madison	493	426	604	508	997
Sullivan	515	476	594	528	1036
Juneau	482	445	—	495	976
Waukesha	484	411	—	502	992
Hartford	462	402	—	480	951
Racine	427	350	—	445	906
Milwaukee	425	348	461	444	900
Appleton	395	372	509	338	828
Green Bay	335	323	486	456	743
Big Flats	466	397	—	430	913
Hancock	457	399	609	435	891
Port Edwards	435	376	564	430	867
La Crosse	512	424	654	493	1018
Eau Claire	483	376	575	475	957
Cumberland	427	319	537	384	833
Bayfield	269	210	371	234	576
Wausau	359	330	506	346	749
Medford	381	304	444	358	784
Crivitz	312	292	—	298	685
Crandon	303	281	433	270	639

Method: ModifiedB50; Sine48; ModifiedB40 as of Jan 1, 2009. NORMALS based on 30-year average daily temps, 1971-2001.



Viburnum leaf beetle larvae

Jennifer Schlick flickr.com

FORAGES

ALFALFA WEEVIL: Surveys show larval numbers and tip feeding have increased over the previous week, principally due to the hatch of spring eggs and the maturation of larvae. Leaf tip injury in southern counties varied from

5-90% and larval populations averaged 34 per 25 sweeps. Exceptional fields in Richland and Sauk counties had counts of 100-132 per 25 sweeps, with 30-90% tip injury. Larval counts in Adams, Marquette and Waushara counties in the central district ranged from 10-29 per 25 sweeps and averaged 18 per 25 sweeps. Although the number of damaging late instar larvae has increased substantially, a second group of small larvae from spring eggs also has become evident in many fields. Tip feeding in first growth alfalfa is mostly below 30% in the southern areas of the state and 10% in the central counties, with a few exceptions.

PLANT BUGS: Numbers generally are below the economic threshold of 5 per sweep, with mixed counts of the alfalfa plant bug and tarnished plant bug ranging from 1-4 per sweep in the alfalfa fields sampled. Nymphs of both species were abundant in sweep net collections, and the immature stages now outnumber the adults in most fields.

POTATO LEAFHOPPER: Low populations can be found in alfalfa in the southern and central areas. Average field counts vary from 1-14 per 25 sweeps, which represents a minor increase over last week's observations. Migrant adults are uniformly distributed over the southern half of the state and have been encountered as far north as Lincoln and Marathon counties. The economic threshold for adults and nymphs combined is 0.2 per sweep in < 3 inch alfalfa, 0.5 per sweep in 3-6 inch alfalfa, 1.0 per sweep in 6-12 inch alfalfa, and 2.0 per sweep in 12-14 inch alfalfa. No nymphs were detected in any field surveyed as of June 4.

MEADOW SPITTLEBUG: Numbers rarely exceed 4 per 10 stems. Development of this insect has progressed rapidly in past weeks and late instar nymphs are common in many southern and central alfalfa fields. These insects are of no consequence at present levels.

ALFALFA BLOTCH LEAFMINER: Leaf mines were observed in every alfalfa field checked in the last reporting period. Surveys found infestations affecting 10-90% of stems in the southern areas and 10-20% of stems in the central areas. The highest rates of leaf mining were noted in Grant, Ozaukee and Washington counties.



Alfalfa blotch leafminer

Krista Hamilton DATCP

CORN

EUROPEAN CORN BORER: The emergence of moths continued for the second week at Arlington, Lancaster and Marshfield, but numbers in black light traps are still very low. Counts of 0-2 moths per trap were registered from May 30-June 4, which is equivalent to the number reported from May 22-28. The first flight of corn borers

should gain momentum in the next 2-3 weeks if favorable weather conditions prevail. The majority of moths are expected to appear in traps by June 14-21 in the southern and central counties, a few days later than last predicted. Since most corn is unsuitable for larval development, higher than normal egg deposition on hosts such as potatoes, peas and native weeds should be anticipated.

BLACK CUTWORM: Larvae from the late April migration of moths are primarily in the 4th and 5th instar cutting stages. At current temperatures, the cutting interval will likely continue for another 1-2 weeks. It should be noted that there is a strong potential for larval outbreaks later this month resulting from secondary surges of migrant adults. Late-planted corn and fields that contained grassy weeds or a small grain cover crop are prime candidates for attack. Growers are advised to monitor their fields over the next several weeks for developing problems. Minor feeding was detected in western Dane County, but no significant injury has been reported as of June 5.

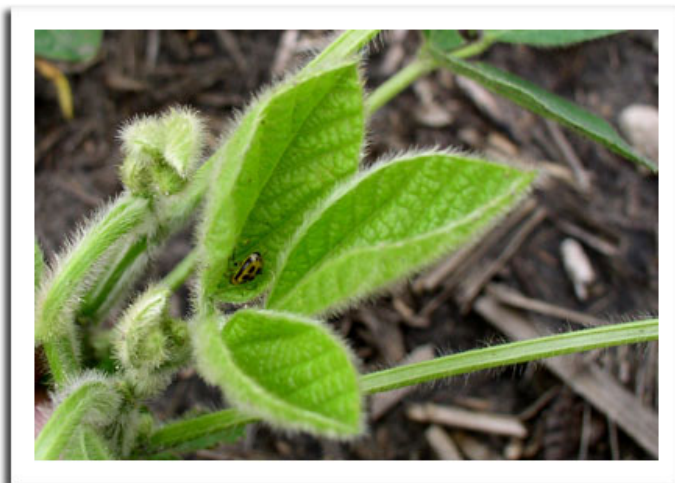
STALK BORER: Light feeding is apparent in the edge rows and scattered throughout a few no-till corn fields. In Columbia and Dane counties, no more than 5% of plants in the marginal rows and 3% of plants in the interior rows show injury by small larvae. Similar levels of infestation were found as far north as Waushara County.

TRUE ARMYWORM: Small first generation larvae were swept from alfalfa fields for the first time this week, signaling that corn and small grains fields should be closely examined for feeding injury by this insect as well as the stalk borer in the next several weeks. Black light traps have registered no more than 18 moths per week at any location this season, but such counts usually are an unreliable criterion for predicting larval outbreaks. Minimum tillage corn fields and fields with early-season grassy weed pressure are more prone to armyworm attack.

SOYBEANS

BEAN LEAF BEETLE: Surveys in first growth alfalfa are incomplete, but continue to indicate low winter survival of this insect. Further sweeping in the southern and central counties yielded just 10 additional beetles since the last report, bringing the survey total to 23 beetles from 143 sites sampled as of June 4. This figure is analogous to

the number collected last season but is very low in comparison to the 486 beetles swept from the same counties when a similar survey was conducted in 2007. Beetles were collected in 13 fields in Fond du Lac, Grant, Jefferson, Lafayette, Rock, Trempealeau, Waukesha, Waushara and Washington counties, with no apparent pattern to their distribution. Preliminary indications are that overwintered beetles are scarce and the risk for substantial defoliation to early emerging soybeans is low. Despite this prediction, emerging soybean fields should be examined for evidence of feeding now that beetles have begun dispersing from alfalfa to soybeans.



Bean leaf beetle feeding on soybean

Krista Hamilton DATCP

FRUITS

CODLING MOTH: Reports indicate that there is extreme variability in codling moth activity between regions of the state. Some orchards have yet to register a single moth, while many of those that set biofix by May 19-20 have observed few moths in subsequent weeks. Cold nights may be suppressing development and flight activity.

GREEN FRUITWORM: Populations in a few apple orchards are unusually high, according to Orchard IPM Specialist John Aue. Larvae have moved from the growing points to the fruit clusters, and this is where growers should look for feeding injury and other evidence of this pest. Sprays applied at petal fall effectively control this fruit moth and other lepidopteran pests.

OBLIQUEBANDED LEAFROLLER: Pupation is underway in the southern and central counties. Orchards that experienced heavy infestations last August but did not treat

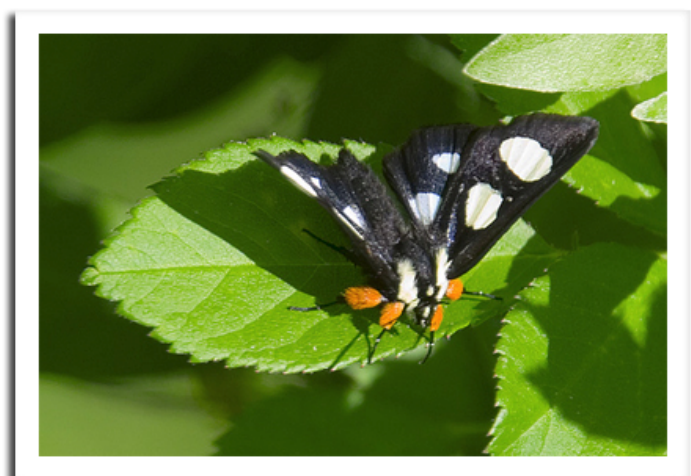
larval populations can expect to see elevated numbers of adults later this month.

PLUM CURCULIO: The migration of adults into orchards began on May 20, but no significant oviposition activity or fruit injury has been reported. Orchards with a history of plum curculio damage should continue to closely monitor fruits for evidence of this pest. Spray applications to prevent egg deposition are warranted when 0.5-1% injury is detected.

REDBANDED LEAFROLLER: Pheromone trap counts decreased for the fourth consecutive week throughout the southern half of the state. Numbers during the May 30-June 4 reporting period ranged from 0-88 moths per trap, with an average of 7 moths captured at 31 sites. This represents a substantial decline from the week of May 1-7 when counts peaked at an average of 71 moths per trap.

SPOTTED TENTIFORM LEAFMINER: The second of three flights is expected to begin next week in the southern areas, once 539-750 degree days (base 50°F) are surpassed. By contrast, counts in Bayfield County orchards should decline as the population transitions into the larval stages.

EIGHT-SPOTTED FORESTER: Adults were observed in Adams and Marquette counties on June 3, indicating that egg deposition is occurring on grape leaves. The larvae of this insect consume grape foliage, leaving behind only the primary veins and petioles. Although light defoliation of vines is not uncommon in most vineyards, large-scale infestations are rare.



Eight-spotted forester moth

J. Gilbert www.flickr.com

CRANBERRY REPORT: Unseasonably cool nights and several frost events have slowed the start of the cranberry growing season. Northern bogs continue to lag behind the central areas in terms of degree days, and are now delayed by as much as two weeks. Accumulations in the central bogs are also several days behind normal. Despite the cold period, cranberry plant growth is progressing well. Most sites show plant uprights transitioning from the elongation stage to the roughneck stage. Flower bud development indicates that bloom can be expected toward the latter part of the month.

VEGETABLES

RED TURNIP BEETLE: This distinctive red and black beetle, which feeds on garden vegetables and weeds in the mustard family, is present in moderate to high numbers in many central Wisconsin alfalfa fields. Counts of 1-4 adults per sweep are not unusual in Adams, Marquette, Portage and Waushara counties. Red turnip beetle is an occasional pest in the Central Sands area of the state. Hosts include broccoli, canola, radish and turnip, but hoary alyssum and yellow rocket are thought to be the primary food plants.



Red turnip beetles in alfalfa

Krista Hamilton DATCP

WEEDS

WEEDS IN CORN: The second annual survey of weeds in corn, a cooperative effort between DATCP and UW-Extension Weed Scientists, is currently underway in 11 southern and central Wisconsin counties. As part of this effort, corn fields are being examined at 3-day intervals to appraise weed pressure and species composition, and

to predict potential yield loss from competition. Following are the preliminary results of surveys conducted this week at 22 sites in Columbia, Dane, Dodge, Jefferson, Fond du Lac, Sheboygan and Washington counties.

COMMON CHICKWEED: Dense populations of newly emerged and flowering common chickweed were found in 50% of corn fields surveyed in Dane and Jefferson counties. In general, plants were less than 4 inches tall and densities varied from 6-100 plants per sq. meter.



Common chickweed

<http://oregonstate.edu>

COMMON LAMBSQUARTERS: Seedlings were found in 82% of corn fields checked as of June 4. Average heights ranged from 1-10 inches, but most plants were less than 2 inches tall. Densities averaged 1-10 plants per sq. meter. This summer annual is one of the most prevalent early-season weeds in row crops. Just one plant per sq. meter in corn can result in 12% yield loss.

GRASSES: Grasses were present at densities of 1-100 plants per sq. meter at 100% of surveyed sites, while at 23% of locations, average densities of 50 plants or more per sq. meter were noted. Average heights ranged from 1-6 inches. Grassy weeds can be particularly difficult to control if management is delayed.

VELVETLEAF: Surveyed fields contained fewer than 100 plants per sq. meter and most plants were less than 2 inches tall. The majority of sites had significantly lower densities, 10 plants or fewer per sq. meter. Due to its prolonged emergence period and ability to grow quickly alongside field crops, velvetleaf poses a serious competitive threat at this point in the growing season.

NURSERY & LANDSCAPE

ANTHRACNOSE: The brown necrotic spots appearing on the leaves of maples in Dane, Iowa, and many other counties since early May have been diagnosed as a combination of anthracnose and *Venturia* leaf blotch by the UW Plant Disease Diagnostic Laboratory. These disorders do not permanently damage trees unless conditions are severe and the diseases are present for several successive years. Pruning to open the canopy and promote air flow, as well as raking fallen leaves, will reduce its development next season. Fungicide treatments are not recommended at this time.



Anthracnose on maple leaves

Liz Meils DATCP

BLACK KNOT: Heavy amounts of this common fungal disease were observed on Canadian red cherry in Brown County. Black knot is easily identified by irregular, black swollen galls or “knots” which form on trunks and branches and vary in size from ½ inch to 1 foot long. Shoots and branches bearing knots should be pruned at least 5 inches beyond the knot during the winter or early in spring, before the fungal spores are released. When knots develop on the trunks of the trees, removal and destruction of the entire tree is required.

APPLE SCAB: Apple and ornamental crabapple trees in Brown and Rock counties were expressing symptoms of this fungal disease. Inspectors found light to moderate amounts of leaf spotting on the foliage of several trees. Infected leaves first develop brown or olive spots that later turn into dark, velvety lesions. Primary infections early in spring produce secondary spores which infect other leaves and fruit during wet periods throughout the season. Under favorably cool and wet weather cond-

itions this disease can develop rapidly on the leaves and substantially reduce growth. Fungicide applications usually are not warranted in nursery settings, except in years when the disease is severe. Scab development can be suppressed by planting resistant varieties and removing fallen leaves in autumn to reduce inoculum levels.

HOSTA VIRUSES: Hostas at a Waukesha greenhouse exhibiting symptoms of Tobacco Rattle Virus (TRV) and Hosta Virus X (HVX) were removed from sale. The variety ‘Undulata’ was especially symptomatic for TRV and displayed the typical ringspots on the foliage. Laboratory testing confirmed the initial diagnosis. While HVX infects only hostas, TRV can infect a wide range of herbaceous and ornamental garden plants, vegetables and field crops, and is the cause of corky ringspot disease in potatoes.

HEUCHERA RUST: This disease, caused by the fungus *Puccinia heucherae*, was found on the coral bells cultivars ‘Georgia Peach’, ‘Little Pearl’, ‘Marmalade’, ‘Midnight Rose’, ‘Obsidian’, ‘Plum Pudding’, ‘Rave On’, and ‘Stoplight’ in a Pierce County nursery. A clear diagnostic indicator is the formation of raised pustules containing dark orange-red spores on the undersides of leaves. Infected plants are not killed by this rust, but the lesions may permanently disfigure foliage. Unlike many types of rust, heuchera rust is autoecious, which means it does not require an alternate host to complete its life cycle. This fungus only affects closely related plants in the genera *Heuchera* and *Saxifraga*. Because the small spores are spread by air movement, it is important for growers to examine incoming plants for symptoms and destroy any that appear to be infected.



Heuchera rust on Heuchera

Konnie Jerabek DATCP

CROWN RUST: This rust disease that also infects oats was observed on fineleaf buckthorn in Rock County. Symptoms initially appear on the upper leaf surfaces, petioles and stems of buckthorn as swollen, yellow-green spots which produce the orange-yellow, powdery rust spores that are wind blown back to the alternate host (oats, ryegrass, brome grass, etc.). The fungus overwinters in grasses and the spores are blown onto buckthorn in the spring where new infections begin. No corrective action is needed.



Crown rust on fineleaf buckthorn

Liz Meils DATCP

FOREST

GYPSY MOTH SPRAY PROGRAM: The last aerial Btk treatments conducted by the DATCP Slow the Spread Program were completed on June 5 in Bayfield and Rusk counties. Other counties that received Btk treatments this season were Chippewa, Clark, Crawford, Eau Claire, Grant, Green, Iowa, Jackson, La Crosse, Monroe and Vernon. All sites in each county received two applications. Mating disruption treatments are scheduled to begin by late June in southern Wisconsin.

The DNR Suppression Program completed its spray season on May 31, treating 10,562 acres in the following counties: Adams, Brown, Columbia, Dane, Fond du Lac, Green Lake, Jefferson, Juneau, Kenosha, Marathon, Marinette, Marquette, Menominee, Milwaukee, Outagamie, Racine, Rock, Sauk, Shawano, Walworth, Washington, Waushara and Winnebago. Treatments of Gypchek, or the gypsy moth nucleopolyhedrosis virus, were applied to 561 acres in Menominee, Sauk and Waushara counties. Property owners and residents in gypsy moth quarantined counties who would like to be

considered for treatment next year should contact their county gypsy moth suppression coordinator by e-mailing dnrfgypsy_moth@wisconsin.gov.

TRAPPING NETWORKS

CABBAGE LOOPER: The first migrant adult was reported from the Bourbonnais, IL trap location on May 29. Populations of this annually introduced pest are typically carried into Wisconsin and the Upper Midwest on southerly winds in mid- to late June. Larvae feed on the leaves of cruciferous plants such as cabbage, broccoli and cauliflower, but also attack beets, celery, lettuce, peas, potatoes, spinach and tomatoes.

CORN EARWORM: A single moth appeared in the Janesville pheromone trap in the past week. Early migrations of corn earworm moths occur in Wisconsin infrequently, while the later and more substantial flight arrives in August.

STRIPED CUCUMBER BEETLE: No beetles were captured for the second week at Poplar Grove, IL where yellow sticky boards are placed to monitor their emergence and activity.

BLACK LIGHT TRAPS: Traps registered a minor increase in moth activity, although counts generally remain fairly low. Insignificant numbers of celery loopers, European corn borers, spotted cutworms and true armyworms were reported from several locations. Light frost near Chippewa Falls and nighttime low temperatures in the 40s throughout the south kept insect activity to a minimum.



Celery looper moth

larsenmorgan/Moths

APPLE INSECT & BLACK LIGHT TRAP COUNTS MAY 29 - JUNE 4

COUNTY	DATE	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	OBLR ⁵	AM RED ⁶	AM YELLOW ⁷
Bayfield	5/29-6/04	Bayfield Apple	39	—	—	—			
Bayfield	5/26-6/01	Orienta	40	0	0	—		0 PC	
Brown	5/29-6/03	Oneida	50	0	0	—			
Chippewa	5/29-6/04	Chippewa Falls 1	35	6	26	0	1		
Chippewa	5/29-6/04	Chippewa Falls 2	300	88	9	—			
Crawford	5/29-6/04	Gays Mills	28	1	23	0			
Dane	5/28-6/04	Deerfield	3	3	1	0			
Dane	5/28-6/04	McFarland	0	0	>30	<5			
Dane	5/29-6/04	Stoughton	2	3	2	0	2		
Dane	5/29-6/04	West Madison	10	0	4	3			
Dodge	5/29-6/04	Brownsville	6	3	0	0			
Fond du Lac	5/29-6/04	Campbellsport	30	5	0	0			
Fond du Lac	5/29-6/04	Malone	43	5	1	0			
Fond du Lac	5/29-6/04	Rosendale	41	14	1	0	0		
Green	5/29-6/04	Brodhead	0	0	1	1			
Iowa	5/29-6/04	Dodgeville	15	0	59	0	0		
Iowa	5/29-6/04	Mineral Point	2	1	1	1		3 PC	
Jackson	5/29-6/04	Hixton	26	1	0	0	0		
Kenosha	5/29-6/04	Burlington	175	0	0	0			
Marinette	5/29-6/04	Niagara	107	1	1	—			
Marquette	5/29-6/04	Montello	204	4	2	0		0 PC	
Ozaukee	5/29-6/04	Mequon	20	2	31	0			
Pierce	5/29-6/4	Beldenville	26	19	6	0	0		
Pierce	5/28-6/04	Spring Valley	64	28	4	0	0		
Racine	5/29-6/04	Raymond	14	2	1	1			
Racine	5/29-6/04	Rochester	20	1	4	0		0 PC	
Richland	5/27-6/02	Hillpoint	26	2	24	6			
Richland	5/29-6/04	Richland Center	60	3	47	0			
Sauk	5/29-6/04	Baraboo	7	0	3	0			
Sheboygan	5/29-6/04	Plymouth	37	7	0	0			
Waukesha	5/29-6/04	New Berlin	11	1	2	0			
Walworth	5/29-6/04	East Troy	10	2	1	1			
Walworth	5/29-6/04	Elkhorn	5	2	2	0			

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller EASTERN; ⁵Oblique-banded leafroller WESTERN; ⁶Apple maggot red ball; ^{*}Unbaited red ball; ^{**}Baited red ball; ⁷Apple maggot yellow board.

COUNTY	DATE	SITE	ECB ¹	TA ²	BCW ³	SCW ⁴	DCW ⁵	CE ⁶	CEL ⁷	WBC ⁸	FORL ⁹	VCW ¹⁰
Chippewa	5/29-6/04	Chipp Falls	0	0	0	0	1	0	4	0	0	0
Columbia	5/29-6/04	Arlington	1	1	0	2	0	0	1	0	1	0
Dane	5/29-6/04	Mazomanie	0	3	0	1	0	0	0	0	0	0
Grant	5/29-6/04	Lancaster	2	1	0	0	0	0	0	0	0	0
Manitowoc	5/29-6/04	Manitowoc	0	8	0	0	0	2	0	0	3	0
Marathon	5/29-6/04	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	5/29-6/04	Sparta	—	—	—	—	—	—	—	—	—	—
Rock	5/29-6/04	Janesville	0	1	0	0	0	0	1	0	0	0
Walworth	5/29-6/04	East Troy	0	0	0	4	0	0	0	0	0	0
Wood	5/29-6/04	Marshfield	2	3	0	2	0	0	6	0	2	5

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