

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

A cold front brought cooler and less humid air into the state at the start of the week, providing relief from the historic early-July heat wave. Maximum temperatures during the period of July 1-7 reached the high 90s-106°F, while heat indices soared to 100-115°F. Numerous daily record maximum and minimum temperatures were tied or broken. The extreme heat and scarcity of rainfall placed tremendous stress on already drought-affected pastures and summer crops, causing row crop conditions to plummet for a sixth consecutive week. Alfalfa and soybean growth has halted in parts of the south, and 57% of the state's field corn is now rated as very poor to fair. An area including all or portions of 14 southern Wisconsin counties has been declared a moderate drought zone, according to the latest U.S. Drought Monitor. All or portions of 23 counties are categorized as abnormally dry. Although weather models forecast a chance of rain over the weekend and later next week, much of the crop damage is irreversible.

LOOKING AHEAD

WESTERN BEAN CUTWORM: Moth emergence continued at very high levels in the last week and has peaked in most areas. The Wisconsin network of 124 pheromone traps has registered a cumulative total of 2,044 moths thus far, which compares to only 29 at the same time last

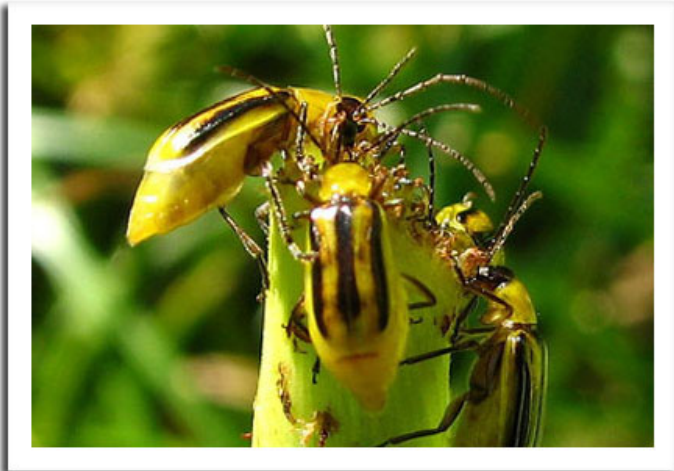
year when the flight was 10-25% complete statewide. According to the degree day model for this insect, 75% of the adult population has emerged in the south-central and southwestern counties, 50% has emerged in the southeast and central counties, and about 25% has emerged in the northern areas. Moth activity is expected to decline to low levels before the end of the month.

SOYBEAN APHID: Densities are still extremely low. Of the 95 fields examined since the last report, only one field in Jackson County had an average count above 100 aphids per 20 plants. All other sites had populations of less than 23 per 20 plants, and 86% had no aphids. Economic populations have not been detected in any soybean field surveyed by DATCP as of July 11.

EUROPEAN CORN BORER: Moths are appearing in low numbers in black light traps. The peak of summer moth activity is projected for 1,733 degree days (base 50°F), or July 9-23 in the southern and central areas and July 28-August 5 in the northern areas. The optimal treatment window for second generation larvae has opened in parts of southern and central Wisconsin.

CORN ROOTWORM: Beetles have become very abundant across southern and central Wisconsin. Peak emergence of the adult population is anticipated in the next 2-3 weeks. Corn acreage that has not been pollinated by late July will be at increased risk of silk clipping,

reduced pollination and poor kernel set. A rescue treatment may be considered for infestations of five or more beetles per plant when the silks have been clipped to less than ½ inch and pollination is incomplete. Scouting should begin before 70% of plants are silking.



Western corn rootworm beetles

k_d arvin flickr.com

TWO-SPOTTED SPIDER MITE: Conditions remain suitable for outbreaks of this pest. Growers of apples, corn, soybeans and nursery plants are advised to monitor crops every 4-5 days for surging mite populations, particularly in the southern and central counties where soil moisture conditions are now short to very short for 95-100% of crop lands. Early detection and control is imperative.

FORAGES

POTATO LEAFHOPPER: Counts in alfalfa continue to be variable, with some fields yielding as many as 2.1-4.5 per sweep and others less than 1.0 per sweep. Surveys in 57 fields during the period of July 1-11 found 32% of sites showed economic populations, while 21% appeared to have been treated. The remaining 47% of fields had low to moderate counts of 0.3-1.9 per sweep. Routine monitoring is critical this month since populations are comparatively high and the effects of leafhopper feeding are more pronounced during periods of drought stress. Treatment decisions must be made on a field-by-field basis, only after alfalfa has been systematically sampled to determine if the economic threshold has been exceeded.

PEA APHID: After several weeks of declining populations, scattered alfalfa fields are again showing moderate to high numbers of aphids. Counts of 7.5-15 aphids per

DEGREE DAYS JANUARY 1 - JULY 11

LOCATION	50°F	2011	NORM	48°F	40°F
Dubuque, IA	1754	1355	1355	1616	2875
Lone Rock	1732	1305	—	1554	2819
Beloit	1806	1365	1372	1606	2947
Madison	1721	1240	1306	1553	2817
Sullivan	1699	1235	1284	1514	2794
Juneau	1639	—	—	1474	2702
Waukesha	1526	1169	—	1405	2554
Hartford	1511	1061	—	1399	2532
Racine	1480	1052	—	1413	2500
Milwaukee	1453	974	1171	1362	2465
Appleton	1497	969	1224	1399	2503
Green Bay	1407	1031	1136	1352	2392
Big Flats	1545	1090	—	1385	2549
Hancock	1547	1093	1270	1386	2563
Port Edwards	1488	1062	1237	1382	2475
La Crosse	1702	1257	1433	1550	2783
Eau Claire	1531	1136	1280	1431	2553
Cumberland	1306	1004	1178	1279	2267
Bayfield	1050	733	—	1083	1868
Wausau	1329	971	1151	1286	2260
Medford	1320	998	1048	1320	2263
Crivitz	1299	884	—	1269	2236
Crandon	1178	872	905	1168	2053

Method: ModifiedB50; Sine48; ModifiedB40 as of Jan 1, 2012.
 NORMALS based on 30-year average daily temps, 1981-2010.

sweep were found at sites in Dane, Grant, Jefferson and Sauk counties in the past week, although averages in most fields ranged from 1-3 per sweep. Pea aphid populations reached the highest levels of the season (20-29 per sweep) during the first two weeks of May and have generally been low since then. Their resurgence in some fields suggests that aphid fungal pathogens, which often limit population growth under moist, humid conditions, are not effectively reducing populations in dry areas of the state.

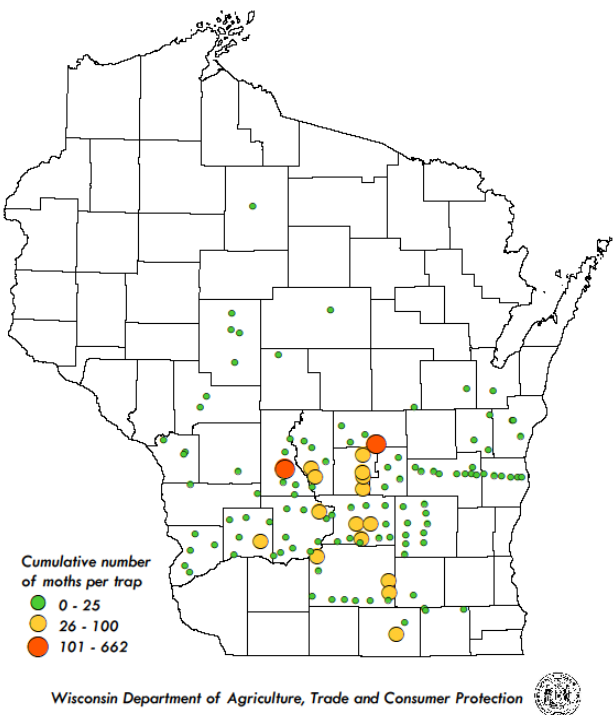
GRASSHOPPER: Moderate to high populations exist in fields on sandy soils in the central area. Average counts in Adams, Juneau, Monroe, Portage, Waupaca and Waushara counties varied from 1-6 per sweep, but exceptional fields contained as many as 9-10 per sweep. Grasshoppers, like pea aphids, have become abundant in recent weeks because the bacteria and fungi that normally provide natural control are not as effective under hot, dry conditions. Alfalfa growers are advised to

monitor the edges of fields for initial signs of grasshopper activity. Problems usually begin in the field margins and extensive damage can occur quickly, before the grasshoppers are noticed.

CORN

WESTERN BEAN CUTWORM: Larvae from the current flight are primarily in the early to intermediate instars and should be detectable on corn tassels and in silks. Surveys conducted in Jackson, Monroe and Trempealeau counties found infestations of 2-8% in 4 of 22 fields checked. Moth activity has peaked or is expected to peak soon in most areas of the state. To date, the Wisconsin network of 124 pheromone traps has reported a cumulative total of 2,044 moths, while black light traps have registered another 970 moths. Oviposition should diminish as the annual flight subsides by late July or early August. High counts in the past week were 529 moths in the black light trap near Sparta and 238 moths in the Wautoma pheromone trap.

2012 Western Bean Cutworm Trap Counts



EUROPEAN CORN BORER: The second flight accelerated slightly in the last reporting period with the capture of 1-18 moths from Janesville to Chippewa Falls. The appearance of summer moths signals that eggs are being deposited on corn and other hosts. At current tempera-

tures, black light traps could register peak emergence by July 23 in the southern and central districts and by August 5 in the northern districts. The treatment window for second generation larvae extends from 1,550-2,100 degree days (base 50°F).



European corn borer moth

www.sequella.co.uk

CORN LEAF APHID: Light colonies consisting of 10-20 aphids per plant were found on corn in Jackson, Monroe and Sauk counties. Colonies of 50 or more aphids per plant on 50% of the plants can interfere with pollination and may require treatment.

CORN ROOTWORM: Beetles are now very prevalent in corn and emergence is far from complete. Examination of fields in the southern and central counties found counts of 0.1-4.2 per plant from July 5-11, with economic counts of 0.75 or more beetle per plant at 45% of sites. Peak emergence remains about 2-3 weeks away. Corn fields with fresh silks are at high risk of silk pruning and should be inspected to determine if pollination is being impaired.

SOYBEANS

SOYBEAN APHID: Surveys show densities remain very low throughout the state. Only one of 95 fields examined from June 28-July 11 had an average count above 100 aphids per 20 plants, while the others contained fewer than 23 per 20 plants. The vast majority of fields, 86%, still had no apparent population. The unprecedented high temperatures of last week appear to have had a suppressive effect on populations.

JAPANESE BEETLE: Defoliation has increased in soybeans and other field crops. Beetles were observed in 14% of

fields examined in the southern and central areas in the past week and leaf injury ranged from 2-16% field-wide. Circumstances thus far have not justified treatment, but defoliation levels at some sites are approaching the 20% economic threshold for early reproductive (R1-R2) soybeans.



Japanese beetle defoliation

Krista Hamilton DATCP

TWO-SPOTTED SPIDER MITE: Continued hot and dry conditions are expected to exacerbate developing mite problems. Mite infestations have already been reported or observed in Grant, Lafayette, Rock, Sauk and Vernon counties. Consultants and growers should monitor soybeans at 4- to 5-day intervals for bronzing, stippling and webbing on the lower leaf surfaces. Many drought-stressed fields in the southern half of the state are unlikely to receive appreciable rainfall in the next 5-6 days and would qualify for treatment if 10-15% of leaves show discoloration and mite infestations are confirmed.

FRUITS

SPOTTED TENTIFORM LEAFMINER: The third flight has begun in southern and central apple orchards where 1,479-1,523 degree days (base 50°F) were surpassed as of July 11. The economic threshold for the third and final generation increases to five mines per leaf.

APPLE MAGGOT: Emergence and oviposition continued for the fifth consecutive week, although fly activity may have peaked in the south-central, southwest and west-central areas. One half of the apple maggot population is expected to appear by 1,600 heat units (base 50°F), which would place 50% emergence from July 3-19 in the southern half of the state and July 20-August 9 north of

Green Bay. Trap counts have been low since emergence began and most monitoring sites have not reported any flies. The highest weekly count as of July 11 was 19 flies on a baited red sphere at Plymouth in Sheboygan County. Apple maggot flies are likely to persist in orchards through late August, so continued maintenance of red sphere traps is recommended.

CODLING MOTH: Most apple orchards are 250 or more degree days (base 50°F) beyond the second biofix and treatment for second generation larvae has begun. An increase in moth counts from the spring to summer flight suggests that some degree of fruit injury is probable later this month and fruits should be closely inspected for damage. Apple growers are reminded to rotate insecticides between generations to prevent resistance to chemical materials. Selective larvicide applications are an acceptable alternative to orchard-wide treatment for sites with variable larval pressure between cultivars or blocks.



Codling moth

themothman.blogspot.com

VEGETABLES

SQUASH VINE BORER: Moths are still very active in Sauk County and at other locations. Growers of pumpkins, zucchini and squash should continue checking susceptible plants for flat, brown eggs deposited at the base of stems as long as the moths are present.

CORN EARWORM: Significant flights of 41-194 moths were registered at two Ripon pheromone trap sites during the last reporting period. Sweet corn growers in the south-central and central counties can expect corn earworm infestations by late July if silking fields are not

monitored and treated punctually. Control is advised for counts of 5-10 moths in three consecutive nights and should be applied every 2-5 days until silks turn brown. The economic threshold for tomatoes is seven moths per trap per week.

BACTERIAL WILT: This insect-transmitted disease is developing on cucumbers across the state. Bacterial wilt is vectored by the striped cucumber beetle, an insect mentioned in previous bulletin issues. The most effective control against this pathogen is control of the beetle vector. In addition, removal of symptomatic plants from garden or larger field plantings is advised to reduce inoculum sources and to suppress disease spread. Treatment is justified for infestations of 4-5 beetles per 50 plants.



Bacterial wilt of cucumber

missouribotanicalgarden.org

IMPORTED CABBAGEWORM: Defoliation has become more prevalent and pronounced in cole crop plantings since late June. The larger larvae (approx. one inch in length) noted in Dane and La Crosse counties this week are capable of consuming more leaf area, causing larger holes in the leaves and producing more frass (fecal matter). The worms usually can be found on leaf undersides and inside the developing heads or growing points of plants. Treatment thresholds for this pest range from 10-75%, depending on whether the crop is intended for fresh market sale or processing.

PICNIC BEETLE: A report from Rochelle, Illinois indicates that picnic beetles are feeding in European corn borer tunnels and may be reducing larval numbers. Beetles were also noted in sweet corn fields near Coon Valley in Vernon County. These insects enter the corn borer tunnels to feed on plant sap, and often act as control

agents by injuring the larvae inside or forcing them from the tunnels.



Picnic beetles in European corn borer tunnel

Krista Hamilton DATCP

WEEDS

VELVETLEAF: Plants are entering the reproductive stages of development in southern areas, an event that ordinarily does not occur until late July or early August in a typical season when temperatures are closer to average and moisture levels are adequate. Control measures such as spot herbicide treatment or manual removal of plants in the next 1-2 weeks will prevent new additions to the seedbank. Management programs must be implemented for several consecutive years to deplete the seedbank since velvetleaf seeds persist in the soil and can germinate after 20 years.



Velvetleaf

toronto-wildlife.com

WILD PARSNIP: Seed maturation has progressed rapidly and mowing to reduce populations is no longer recomm-

ended. Mowing after the seeds have matured will function as a dispersal mechanism rather than a weed control tactic. Mechanical removal of parsnip plants remains a viable control option, as long as all plant materials are bagged and disposed of in a landfill.

SPOTTED KNAPWEED: Plants are currently flowering in the southern two-thirds of the state. Collection and redistribution of knapweed biocontrol agents such as the seedhead weevils, *Larinus minutus* and *Larinus obtusus*, and the root boring weevil, *Cyphocleonus achates*, should occur at this time. However, a State of Wisconsin permit is required prior to releasing any of these organisms and may be obtained by contacting Clarissa Hammond at clarissa.hammond@wisconsin.gov.



Spotted knapweed

Rob Routledge Sault College

TEASEL: Mowing plants to prevent seed formation is suggested before the end of the month, while cut-leaved and common teasel plants are in the early flowering stages. A more effective control is to apply herbicide to the rosettes in spring or fall. Since teasel plants commonly resprout and may flower after mowing, repeated cutting is often required.

NURSERY & FOREST

TAR SPOT: The pale yellow lesions appearing on Norway maple leaves in Dane and Jefferson counties are early symptoms of tar spot, a cosmetic fungal leaf spot disease. Severely infected foliage will soon develop raised, black, tar-like spots and may drop prematurely. Tar spot is an aesthetic disease best controlled by clearing and destroying infected leaves in fall to prevent the spores from spreading. If treatment is warranted,

three fungicide applications are necessary for control: one at bud break, one when leaves are half expanded, and one when leaves are fully expanded.



Early symptoms of tar spot on Norway maple

Marcia Wensing DATCP

SPIDER MITES: Deciduous trees and shrubs, conifers, ornamental plants and agricultural crops across the state are developing spider mite infestations. Affected foliage initially has a speckled or stippled appearance, later having a reddish or bronze cast and dull look, with webbing apparent and eventual desiccation and death occurring. Climatic conditions which favor this pest include low moisture and prolonged high temperatures. Outbreaks are associated with drought conditions.



Leaf stippling cause by spider mites

Liz Meils DATCP

A number of options are available for control of spider mites, including dormant horticultural spray oils, registered miticides, introducing predacious mites, and dislodging mites using a forceful spray of water. Mite populations should be monitored closely prior to applying

control measures. Several applications may be needed if heavy populations persist.

FALL WEBWORM: Webs constructed by the larvae of this pest are beginning to appear on apple trees and other hosts statewide. Fall webworm is a native species that feeds on a wide range of deciduous forest, shade, fruit, and ornamental trees. Its characteristic webs appear at this time of year, later than nests made by other web- and tent-making species found in Wisconsin.



Fall webworm nest

lawnamerica.com

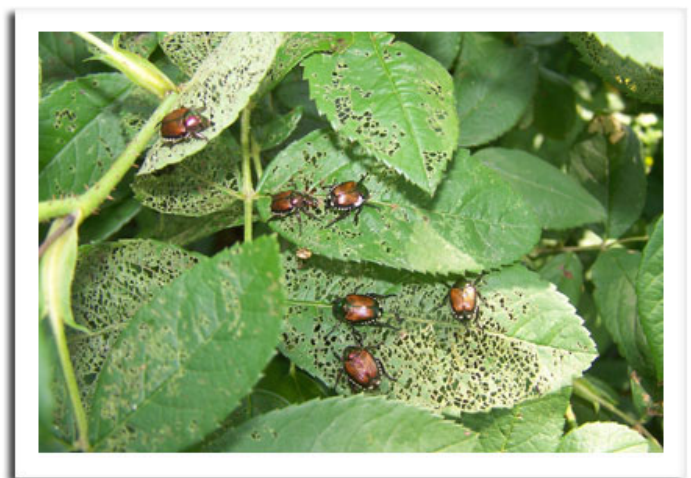
This pest is primarily a cosmetic problem that can be controlled by removing and destroying the web. Insecticides or *Bacillus thuringiensis* (Bt) products are also effective against small larvae. Fall webworm feeding rarely results in severe damage and populations are usually regulated by more than 50 different species of parasites and 36 species of predators.

GYPSY MOTH SURVEY: The annual moth flight began on July 3 and is underway as far north as Marathon County. The DATCP Gypsy Moth Trapping Program has set 18,271 traps thus far, or 95% of the expected total of 19,000 traps. As of July 11, the male moth count was 363. Counts are expected to increase significantly in the next 7-10 days as the flight peaks in the southern counties. Peak emergence should occur by early August in the north. The adult flight period extends for approximately 2-4 weeks.

EMERALD ASH BORER: Emerald ash borer (EAB) has been confirmed in the following locations since early June: Green Bay (Brown County), Richard Bong State Recreation Area (Racine County), Janesville (Rock County), Port Washington (Sheboygan County), Lake

Geneva, Fontana (Walworth County), and Mukwonago (Waukesha County). As a result of these detections, Rock and Walworth counties will soon be added to the EAB quarantine area, bringing the total to 14 Wisconsin counties. Two counties, Fond du Lac and Sheboygan, were quarantined in 2008 due to their proximity to the Newburg infestation, although EAB has not been found in either county.

JAPANESE BEETLE: Damage to linden trees, roses and numerous ornamental plants continues to be observed by DATCP Nursery inspectors. Repeated spot treatment of individual trees or plants may be required throughout July for nurseries that experience high numbers of beetles.



Japanese beetles feeding on rose

Marcia Wensing DATCP

GYPSY MOTH TREATMENT: The gypsy moth aerial spray season ended on June 28 in Douglas County where planes made their last treatment of pheromone flakes. This completion date breaks the June 30 record set in 2007. Last year, treatments continued through July 19. In all, the Wisconsin Slow the Spread Program treated approximately 41,264 acres with Btk, 3,606 acres with NPV and 145,034 acres with mating disruptant in 22 counties this year. The DNR's Suppression Program treated approximately 196 acres in Marinette County.

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 5 - 11

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	OBLR ⁵	AM RED ⁶	YELLOW ⁷	GDD 50°F
Bayfield	Keystone	21	33	6	7		0	0	
Bayfield	Orienta	54	0	0	18		—	—	
Brown	Oneida	315	33	7	9		0	0	
Chippewa	Chippewa Falls	0	8	17	0		*1	0	
Dane	Deerfield	3	60	0	—		*5	0	
Dane	McFarland	220	43	1	—		1	0	
Dane	Mt. Horeb	47	27	23	2		—	—	
Dane	Stoughton	68	9	10	1		0	0	
Dane	West Madison	*40	37	6	3		0	0	
Fond du Lac	Campbellsport	150	170	0	13		—	—	
Fond du Lac	Malone	*45	*152	*25	*7		0	0	
Fond du Lac	Rosendale	17	6	2	1		0	0	
Grant	Sinsinawa	28	3	4	—		—	—	
Jackson	Hixton	14	0	1	1		0	0	
Kenosha	Burlington	160	18	0	5		—	—	
Marathon	Edgar	—	—	—	—		—	—	
Marinette	Niagara	228	14	0	10		0	0	
Marquette	Montello	2	25	3	0		—	—	
Ozaukee	Mequon	20	17	2	0		*0	0	
Pierce	Beldenville	1100	252	51	18		0	0	
Pierce	Spring Valley	32	49	1	0		0	0	
Polk	Turtle Lake	102	75	1	4		0	0	
Racine	Raymond	—	—	—	—		—	—	
Racine	Rochester	50	92	19	2		0	0	
Richland	Hillpoint	348	75	15	3		0	**0	
Sheboygan	Plymouth	55	85	5	0		**12	0	
Walworth	East Troy	—	—	—	—		—	—	
Walworth	Elkhorn	0	10	0	0		—	—	
Waukesha	New Berlin	—	—	—	—		—	—	

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

COUNTY	SITE	ECB ¹	TA ²	BCW ³	SCW ⁴	DCW ⁵	CE ⁶	CEL ⁷	WBC ⁸	FORL ⁹	VCW ¹⁰
Chippewa	Chippewa Falls	18	0	0	0	0	0	5	0	0	0
Columbia	Arlington	6	0	0	0	0	0	1	1	18	0
Crawford	Prairie du Chien	0	0	0	0	0	0	0	0	3	0
Dane	Mazomanie	3	0	1	0	0	0	1	10	5	0
Fond du Lac	Ripon	14	0	0	0	0	0	0	0	0	0
Manitowoc	Manitowoc	0	30	9	2	1	0	1	2	27	0
Marathon	Wausau	4	4	8	9	0	5	4	0	148	0
Monroe	Sparta	0	0	0	0	0	0	0	529	0	0
Portage	Plover	1	0	0	0	0	0	0	1	9	0
Rock	Janesville	4	0	0	0	1	0	0	0	13	0
Vernon	Coon Valley	9	0	2	0	0	0	0	3	5	0
Walworth	East Troy	0	0	5	0	0	0	0	10	5	0
Wood	Marshfield	5	0	6	0	1	4	13	2	0	0

¹European corn borer; ²True armyworm; ³Black cutworm; ⁴Spotted cutworm; ⁵Dingy cutworm; ⁶Corn earworm; ⁷Celery looper;

⁸Western bean cutworm; ⁹Forage looper; ¹⁰Variegated cutworm.