Volume 58 No. 17 August 29, 2013

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

Late-summer heat and dryness intensified during the last week of August. Temperatures exceeded 90°F across the southern half of the state, stressing crops and further degrading pasture conditions. High dew points contributed to heat index values of 95-110°F in the central and southern counties and a heat advisory was issued from August 25-27. Several temperature records were set during this period, including a warmest minimum temperature of 79°F on August 27 in La Crosse. Meanwhile, a passing cold front early in the week generated moderate to heavy rainfall (1-3 inches) across the central and northern areas, but the precipitation bypassed western Wisconsin where deficits now range from 2-6 inches and abnormally dry conditions have developed since July. After a drier-than-normal summer and a second week of extreme heat, crop conditions are rapidly deteriorating and many acres of late-planted corn and soybeans could fail without significant rainfall soon.

LOOKING AHEAD

CORN EARWORM: Counts in pheromone traps during the last month have been substantial, with reports of 200 or more moths per trap per week from locations in Dane, Fond du Lac and Green Lake counties. Larvae in all stages of development are present in moderate to high numbers in corn across much of the state. A surge in moth counts at Byron and Green Lake from 78-272 per trap last week to 428-613 per trap this week should ensure that larval populations persist well into September.

CORN ROOTWORM: The statewide beetle survey is complete in all but the north-central and northeast areas. Preliminary review of the field data indicates that counts are generally lower than last year across southern and central Wisconsin. Beetle counts in the northwest counties are somewhat higher. Results of the survey are summarized on page 103.

EUROPEAN CORN BORER: Egg deposition is expected to continue for another two weeks. The treatment window for second generation larvae has closed near Beloit, Madison, La Crosse and Sullivan, and remains open only a few more days in the southeast and central districts. Final inspections for egg masses and small larvae should be conducted before 2,100 degree days (base 50°F) are surpassed. Larvae in the southern areas are predominantly in the second and third instars.

SOYBEAN APHID: Densities have increased to moderate levels in most fields. According to the annual survey finalized earlier this week, the state average aphid count increased from 18 per plant during the July portion of the survey to 55 per plant in August. The August average is

the highest in the last five years. Many soybean fields are approaching R5.5-R6, the growth stages at which no yield benefit is gained by insecticide treatment. Final aphid assessments should be made in the week ahead.

FALL PESTS: The fall invasion of Wisconsin's resident nuisance pest insects is imminent. Boxelder bugs, multicolored Asian lady beetles, western conifer seedbugs and potentially brown marmorated stink bugs are likely to aggregate on the sides of homes and buildings next month as they migrate indoors for the winter. Problems associated with boxelder bugs in particular may be accentuated this year by the dry weather, which inhibits the spread of a fungal disease that regulates populations.

Mechanical exclusion by sealing cracks around windows, doors, siding and other openings is advised to prevent these insects from entering residences. Exterior applications of insecticides may offer temporary control of infestations when completely sealing the exterior is difficult or impossible. Applications should consist of a synthetic pyrethroid applied by a licensed pest control operator in September or early October, just prior to insect aggregation. Under no circumstance should chemical insecticides be used indoors.

Boxelder bugs *Bridget Roussy onewhowaits.ca*

LATE BLIGHT: Continued development on tomato and potato has been reported, including one new case of the disease on tomato in Milwaukee County. Protective treatments of green vines with a late blight-specific fungicide on a 5- to 7-day schedule should be maintained. Potato tubers remain susceptible to infection even when very little foliage is present.

DEGREE DAYS JANUARY 1 - AUG 28

LOCATION	50°F	2012	NORM	48°F	40°F
Dubuque, IA	2222	2806	2367	2246	3535
Lone Rock	2166	2748	—	2156	3471
Beloit	2346	2898	2407	2290	3687
Madison	2165	2773	2294	2185	3462
Sullivan	2134	2746	2280	2160	3429
Juneau	2023	2263	—	2111	3292
Waukesha	1938	2531	—	2018	3193
Hartford	1903	2511	—	1984	3146
Racine	1930	2529	—	2026	3189
Milwaukee	1888	2483	2211	1981	3131
Appleton	1909	2489	2218	1971	3126
Green Bay	1822	2395	2063	1915	3032
Big Flats	1915	2491	—	1918	3129
Hancock	1933	2517	2224	1961	3150
Port Edwards	1875	2438	2180	1923	3064
La Crosse	2144	2719	2504	2096	3427
Eau Claire	2015	2519	2127	2051	3226
Cumberland	1797	2193	2119	1847	2931
Bayfield	1372	1871	—	1425	2377
Wausau	1727	2212	2075	1788	2853
Medford	1763	2204	1901	1848	2887
Crivitz	1699	2211	—	1779	2851
Crandon	1583	1963	1611	1632	2631

Method: ModifiedB50; Sine48; ModifiedB40 as of Jan 1, 2013. NORMALS based on 30-year average daily temps, 1981-2010.

FORAGES

POTATO LEAFHOPPER: Surveys conducted in Buffalo, Juneau, La Crosse, Monroe and Trempealeau counties during the last week of August found non-economic populations. Counts were below 1.9 per sweep in all fields sampled and the average was 0.6 per sweep. Nymphs are appearing less frequently in sweep net collections and significant population increases are unlikely to occur during the remainder of the season.

PEA APHID: Densities have escalated in individual fields. One alfalfa field surveyed in Buffalo County and two in Monroe County contained 9-19 per sweep, the highest populations documented in several weeks. Other sites had fewer than four per sweep. Pea aphids have been of minor importance this year.

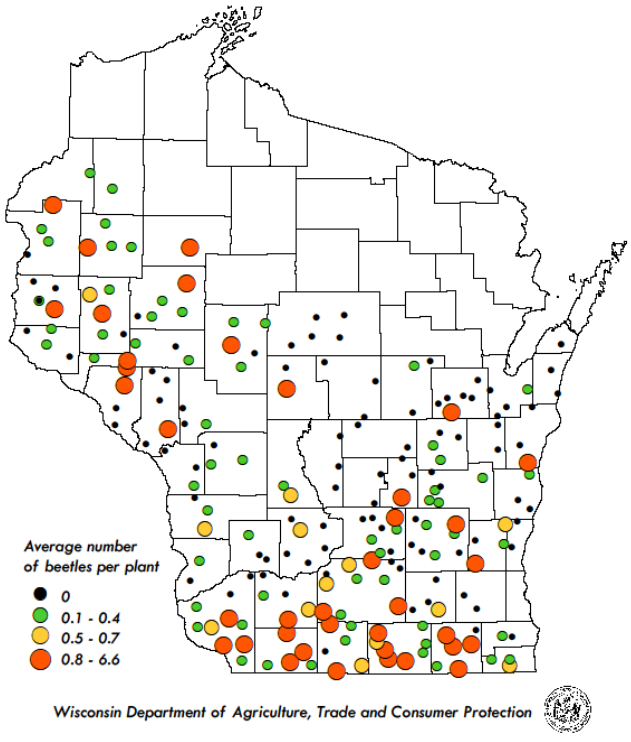
GRASSHOPPER: This pest remains abundant in the grassy areas adjacent to alfalfa, but minimal feeding

injury is evident beyond the field margins. Alfalfa fields with counts in excess of 2-3 per sweep are unusual in the west-central area of the state.

CORN

CORN ROOTWORM: Results of the statewide beetle survey indicate populations are lower than last year in the southern and central crop reporting districts and higher in the northwest region. District averages across the southern and central areas ranged from 0.2-0.8 per plant and compare to averages of 0.4-0.9 per plant last year. The most significant decrease was documented in the central counties where the average decline from 0.5 to 0.2 per plant, while the average in the northwest increased from 0.5 to 0.7 per plant. As of August 29, economic counts of 0.75 or more beetle per plant have been found in 38 of 213 (18%) fields surveyed, which is lower than the five-year average of 25%. Final survey results will be published in the November summary issue of the Bulletin or may be requested earlier by emailing krista.hamilton@wisconsin.gov.

2013 Corn Rootworm Beetle Survey Results



WESTERN BEAN CUTWORM: Damage to corn was noted this week in Buffalo, Chippewa and Clark counties, where an estimated 2-6% of ear tips were infested with late-instar larvae. Most of the population is advanced and should enter the pre-pupal stage by early September. A few late moths are still appearing in traps but the flight has basically ended. The 2013 trapping survey documented the smallest flight in in the nine-year history of the program, collecting only 655 moths in 117 traps (average of six moths per trap).

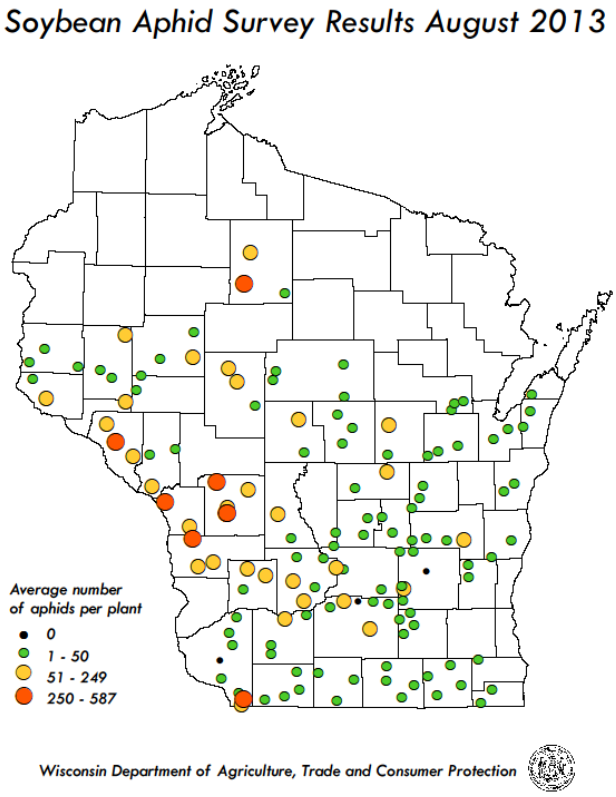
CORN EARWORM: A major migration of corn earworm moths is in progress. Counts at the Byron and Green Lake trapping sites increased to 428 and 613 moths per trap in the past week, while counts of 93-227 per trap were registered at sites in Dane and Chippewa counties. Larvae of various maturities can be found statewide. Surveys of corn in Buffalo, Chippewa, Clark, Dunn and Waupaca counties found moderate to severe infestations of 10-31% in a few fields. Most earworms were in the intermediate to late instars, although a few were very small. Sweet corn growers should continue to monitor fields for egg laying as long as moth activity persists and green silks are present. Counts this week were: Byron 428, Chippewa Falls 93, Coon Valley 12, Cottage Grove N 19, Green Lake 613, Janesville 0, Marshfield 0, Mazomanie 4, McFarland 214, Ripon 125, Sun Prairie N 310, Sun Prairie W 22, Wausau 2, and Watertown 93.

Corn earworm larva *Kevin Meyer DATCP*

EUROPEAN CORN BORER: Second generation larvae range from second- to fifth-instar in the southern and west-central counties. Larval infestations affecting 10-23% of the ears have been reported in a few late-planted sweet corn fields, but most sites appear to have had adequate control. Nearly all of the older larvae present by mid-August will enter diapause and will not pupate until next spring.

SOYBEANS

SOYBEAN APHID: The second half of the annual survey documented the highest densities since 2008. Examination of 139 soybean fields, once in July and again in August, found a state average of 18 aphids per plant during the July survey and a significantly higher count of 55 per plant this month. State average densities from 2010-2012 were extremely low at 7-16 aphids per plant and the state average in 2008 was 72 per plant. Approximately 6% of the sites sampled from August 6-28 contained economic populations of 250-587 per plant, 22% had moderate averages of 50-249 per plant, and 72% had lower counts of less than 49 per plant. Populations in 30% of fields decreased from July to August, suggesting that approximately one-third of the survey sites required aphid control this season.



Many acres of late-planted soybeans now have moderate populations near the 250 aphid per plant threshold. These fields should be evaluated one last time in the next few days since control measures may be justified and foliar treatment is not economical for soybeans beyond the R5.5 growth stage.

GREEN CLOVERWORM: Larvae of various maturities are still causing light defoliation of soybeans in the southern and west-central counties. The damage observed in the past week was minor. Populations have been low since the first larvae appeared in mid-July.

Green cloverworm larva *Krista Hamilton DATCP*

JAPANESE BEETLE: Adults continue to be active and fairly common in soybeans. Defoliation has not exceeded economic thresholds and control has been unjustified for most fields this summer. The heaviest infestations in soybeans were noted in Chippewa, Eau Claire and Monroe counties earlier this month.

FRUITS

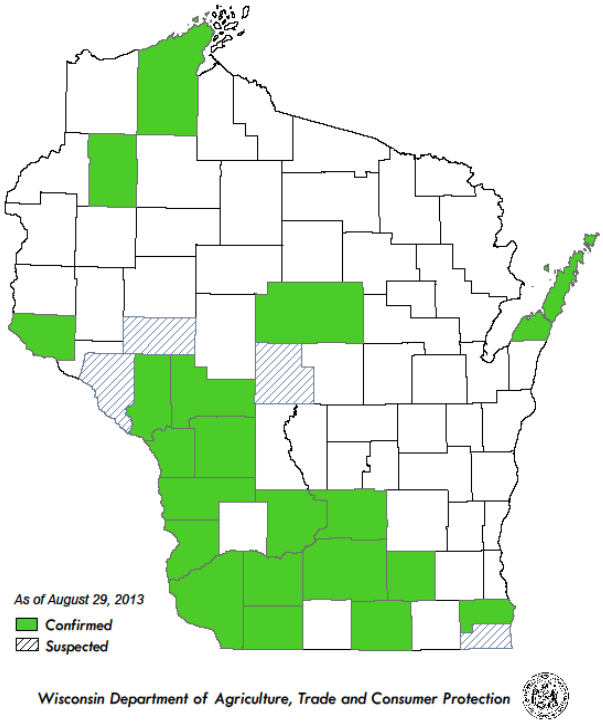
SPOTTED TENTIFORM LEAFMINER: The third and last flight of the season has peaked and is now declining at most orchards. Moth numbers have been very high at some locations during this flight, with counts of 700-1,359 moth registered in Iowa, Racine and Richland counties since mid-August. Another larval generation should be anticipated in September based on the trap counts registered in the last two weeks. Apple growers experiencing large numbers of third brood moths may assess infestations by monitoring orchard perimeters for leaf mines.

APPLE MAGGOT: Fly activity has generally decreased with the dry weather, but enough adults are still present to cause problems in late cultivars. Counts varied from 1-5 per trap for the period of August 22-28 with the weekly high count registered in Dane County.

SPOTTED WING DROSPHILA: Larvae and/or adults have been confirmed in 20 Wisconsin counties as of August 28. This insect poses a serious risk to ripening fruit this

year, making it imperative for growers with SWD infestations to continue treatments every 4- to 5-days through harvest. A list of insecticide options can be found on the UW-Madison SWD website at http://labs.russell.wisc.edu/swd/management-2/. For organic operations, the OMFI-approved insecticides PyGanic and Entrust are available for SWD control.

2013 Spotted Wing Drosophila Infestations



JAPANESE BEETLE: Reports of continued feeding on apples, grapes and raspberries were received in the past week. Levels in orchards currently vary by region of the state and the effectiveness of the control measures applied earlier this month. At most sites, earlier sprays effectively reduced beetle populations.

CODLING MOTH: Counts remain unusually high for late August. The weekly average based on reports from 19 orchards was 15 moths per trap, with an exceptional count of 63 moths registered near Turtle Lake in Polk County. As stated last week, the peak of the second flight has occurred at most locations, but additional treatments may be necessary before harvest if the moths remain numerous.

STINK BUG: An orchardist in Trempealeau County reports that these insects have been the primary cause of surface damage to apples and peaches this season. Feeding and probing by the nymphs and adults results in visible injury, posing an economic risk to maturing fruits. A single adult or nymph can potentially damage many apples. If the feeding occurs just prior to harvest, depressions on the fruit surface may not develop until after a period of time in storage, which was the case in Trempealeau County. Scouting is strongly recommended at this time. The highest numbers usually occur on the edges of orchards bordering woods or agronomic crops.

Stink bug damage to apples *Maryland Dept of Agriculture*

OBLIQUEBANDED LEAFROLLER: Orchardists are reminded to maintain pheromone traps for this insect throughout September. Second generation larvae occasionally cause significant fruit damage late in the growing season and moth counts in late August and September can be an indication of damage potential by first brood larvae appearing next spring.

BROWN MARMORATED STINK BUG: Fruit growers are advised to watch for this pest next month and in October as the bugs swarm on warm fall days in search of protected, overwintering sites. Brown marmorated stink bug is thought to be established at very low levels in Dane and Jefferson counties, although it has never been detected in any fruit, vegetable or field crop anywhere in the state. Similar to the multicolored Asian lady beetle and boxelder bug, BMSB aggregates on the exteriors of buildings on warm fall days in search of protected, overwintering sites. Any swarms of stink bugs noticed this fall should be reported to DATCP at 1-866-440-7523.

VEGETABLES

SQUASH BUG: Growers of melons, pumpkins and squash should continue to inspect plants for squash bugs

as fruits ripen next month. Most plantings have matured beyond the critical period of control (seedling and flowering stages), but the adults and nymphs are likely to feed on fruits throughout fall, causing aesthetic damage and, in extreme cases, fruit drop. Late-season control consists of disposing of cucurbit foliage and plant debris around the garden to reduce the number of overwintering sites.

Squash bug nymphs *www.gardensimply.com*

TOMATO FRUITWORM: Tomatoes are at increased risk of egg deposition and larval infestation by this pest as most of the state's sweet corn fields mature beyond the green silk stage and no longer provide 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.

LATE BLIGHT: Environmental conditions remain favorable for late blight development. Monitoring plants for signs of infection and regular treatment of infected fields on a 5- to 7-day schedule will be critical for preventing this disease from spreading to other tomato and potato crops as harvest continues. Confirmed cases of late blight have been identified in Adams, Brown, Dunn, Juneau, Langlade, Milwaukee, Portage, Racine, Sauk and Waushara counties to date.

FALL ARMYWORM: Moths are arriving in low numbers in southwestern and south-central Wisconsin and depositing eggs in late-maturing corn. The larvae appear late in the season, from mid-July through harvest, and are typically found damaging corn in patches throughout a cornfield. Fall armyworms are similar in appearance to the corn earworm larva but can be differentiated by a conspicuous white, inverted Y-shaped suture on the head capsule between the eyes. Corn normally can sustain considerable damage from this pest before control is required.

ONION MAGGOT: Third-generation maggots are feeding on cull onions and bulbs left behind in fields. Onion growers should remove all cull piles and thoroughly clean fields to reduce overwintering populations. Rotation to a non-host crop is recommended for fields with a history of onion maggot problems.

NURSERY & FOREST

ASPEN BLOTCHMINER: Damage to aspens is reported over an extensive area in northeastern Wisconsin, including portions of Marinette, Oconto, Oneida and Vilas counties. Numerous acres are moderately to heavily infested. Larvae of this insect feed between the leaf surfaces, forming large, circular blotches and brown discoloration. Severely infested trees appear green in the upper crown and brown below. Significant, long-term damage is not expected.

Aspen blotchminer leaf mines *Linda Williams DNR*

FOLIAR NEMATODE: Several hosta cultivars at a Chippewa County nursery were showing necrotic leaf streaks indicative of foliar nematode infestation. The leaf streaks form as these microscopic roundworms feed on the leaf tissues between the veins. Leaf discoloration initially appears in June becomes more noticeable by late summer. Foliar nematodes spread by water splash and in vegetatively propagated plant material, and as a result, have become an increasingly common pest in the nursery trade. Some infested plants may be symptom-

less until nematode populations are very high, causing serious problems in hosta display plantings and for potted hosta sellers. Although they rarely kill their host, foliar nematodes reduce the plant's vigor and the symptoms are unsightly. Chemicals are not readily available for controlling foliar nematodes. Instead, systematic removal of infected plants is recommended to decrease the spread from infected to healthy plants.

Foliar nematode symptoms on hosta *Konnie Jerabek DATCP*

GYPSY MOTH: Examination of 14% of the 18,513 pheromone traps in Wisconsin has yielded a total male moth count of 73,241 as of August 28. This figure is considerably lower than the 115,013 moths reported at the same time last year. The adult flight period has ended in the southern counties, although activity is still being registered in the north. According to DNR aerial surveys, only 600 defoliated acres were observed statewide this season, in contrast to more than 14,000 acres last year. Larval mortality from the *Entomophaga* fungus was very high this year and few problems are anticipated in 2014.

PALES WEEVIL: Damage by this conifer pest was observed on eastern white pine in Dodge County. Pales weevil is a recurrent problem in Christmas tree plantations where periodic harvests leave many pine stumps suitable for weevil breeding. The adults feed on terminal shoots, causing girdling of the shoots and eventual flagging of branches. The greatest damage is usually inflicted in fall, from September to mid-October. Because the adult females lay their eggs on the roots of pine stumps, removing and destroying stumps or treating stumps before adults become active in the spring are the most effective controls.

Flagging on Douglas fir caused by pales weevil *Jill O'Donnell, MSUE*

WHITE PINE BLISTER RUST: Austrian pines in Washington County were lightly infected with blister rust, a disease caused by the fungus *Cronartium ribicola*. The rust fungus requires white pine and the alternate host Ribes spp. (currants or gooseberries) to complete its life cycle, and spreads from Ribes to pine (and not pine to pine) from mid-July through late fall. Since the fungus cannot spread to pine if currants or gooseberries are removed, eliminating all susceptible Ribes nearby is an effective control. Removing branches with cankers is required for blister rust control, but of the cankers develop on the trunk, control is futile and the tree should be removed.

White pine blister rust *www.extension.umn.edu*

APPLE INSECT & BLACK LIGHT TRAP COUNTS AUGUST 22 - 28

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	AM RED[5]	YELLOW[6]
Bayfield	Keystone	12	8	1	4	2	3
Bayfield	Orienta	153	33	0	6	0	0
Brown	Oneida	—	—	—	—	—	—
Columbia	Rio	—	—	—	—	—	—
Crawford	Gays Mills	—	—	—	—	—	—
Dane	Deerfield	—	—	—	—	—	—
Dane	McFarland	—	—	0	—	5	—
Dane	Mt. Horeb	165	74	8	6	0	0
Dane	Stoughton	98	64	28	0	0	2
Dane	West Madison	94	58	6	2	2	0
Fond du Lac	Campbellsport	400	35	0	45	2	—
Fond du Lac	Rosendale	160	43	7	4	0	0
Grant	Sinsinawa	—	—	—	—	—	—
Green	Brodhead	—	—	—	—	—	—
Iowa	Mineral Point	580	91	35	9	—	—
Jackson	Hixton	260	0	0	3	0	0
Kenosha	Burlington	600	35	8	7	0	0
Marathon	Edgar	—	—	—	—	—	—
Marinette	Niagara	—	—	—	—	—	—
Marquette	Montello	37	7	0	0	0	0
Ozaukee	Mequon	150	15	9	8	*1	—
Pierce	Beldenville	—	—	—	—	—	—
Pierce	Spring Valley	42	5	9	4	**1	0
Polk	Turtle Lake	588	0	63	0	*0	0
Racine	Raymond	1359	28	20	15	0	0
Racine	Rochester	685	81	15	5	0	0
Richland	Hillpoint	580	16	7	0	3	0
Sheboygan	Plymouth	—	—	—	—	—	—
Walworth	East Troy	—	—	—	—	—	—
Walworth	Elkhorn	—	—	—	—	—	—
Waukesha	New Berlin	159	19	19	8	0	0

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller; [5]Apple maggot red ball; *Unbaited AM trap; **Baited AM trap; [6]Apple maggot yellow board.

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	15	0	6	0	0	0	0	7	0	0
Columbia	Arlington	—	—	—	—	—	—	—	—	—	—
Crawford	Prairie du Chien	5	0	0	0	51	4	1	0	44	0
Dane	Mazomanie	5	10	2	0	64	0	1	0	3	1
Fond du Lac	Ripon	2	0	0	0	0	14	0	0	0	0
Manitowoc	Manitowoc	—	—	—	—	—	—	—	—	—	—
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	0	0	0	61	52	0	0	0	0	0
Rock	Janesville	2	0	0	0	4	0	1	0	1	0
Walworth	East Troy	0	0	1	0	83	0	5	0	6	0
Wood	Marshfield	1	0	1	2	6	0	3	2	1	0

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