

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

Cool, cloudy weather persisted in Wisconsin during the final week of August. Daytime high temperatures remained primarily in the 70s, while nighttime lows cooled to the 40s and 50s. A storm system on August 28 produced isolated heavy showers of 2-4 inches over portions of the central and southeastern areas, though conditions were generally dry throughout much of the state. Following this month's ongoing cool weather pattern, corn and soybean maturity has fallen behind the five-year average and condition ratings have declined. Overall, 69% of the corn crop was reported in good to excellent condition at the start of the week, two percentage points below last week and 18 points less than the same time last year. Soybean ratings decreased one percentage point to 73% good to excellent, 14 points lower than last year. The early-September forecast calls for a continuation of below-normal temperatures, but most of the state's crops will need more heat, additional moisture, and a late first autumn frost to reach maturity.

LOOKING AHEAD

FALL PESTS: Nuisance insects including the boxelder bug, brown marmorated stink bug, multicolored Asian lady beetle, and western conifer seedbug will begin aggregating on warm southern and western exposures

of buildings later this month in advance of their indoor invasion. Exterior insecticide treatments may temporarily deter these insects from entering homes, but exclusion measures such as sealing cracks around windows, doors, siding and other openings are preferred. Insecticides should be only applied by a licensed pest control technician and considered for severe infestations. Fall nuisance insects do not reproduce inside the home or cause structural damage.

CORN EARWORM: Migrants arrived in significant numbers for the second consecutive week at two monitoring locations, while counts at nine other sites were low. The pheromone traps at Arlington in Columbia County and Beaver Dam in Dodge County captured 156 and 129 moths, respectively, an increase from 111 and 16 moths recorded last week. The August 24-31 count of 351 moths brings the cumulative two-week total to 639 moths in 15 traps since the primary migration began. Sweet corn growers are advised to maintain corn earworm scouting and management programs as long as moth activity persists and green silks are available for oviposition.

CORN ROOTWORM: Beetle pressure has been much lower than anticipated this season. The August survey found a pronounced decrease in the state average beetle count from 0.5 per plant in 2016 to 0.2 per plant in 2017, the lowest populations in the last 46 years. Although this summer's historically low adult rootworm levels indicate

a generally lower threat of larval root damage to continuous corn next summer, survey data represent regional populations and not pressure in individual fields. Producers and consultants are advised to sample beetle populations once more by early September to inform next year's rootworm management decisions and/or planting rotation.



Western corn rootworm beetle Krista Hamilton DATCP

BROWN MARMORATED STINK BUG: This new invasive pest has been trapped in Dane, Door and Rock counties this summer, including a few south-central Wisconsin apple orchard locations. The UW Insect Diagnostic Lab also recently confirmed the identification of second-instar nymphs collected from raspberries in Waukesha County. Similar to the multicolored Asian lady beetle and boxelder bug, BMSB clusters on the exteriors of buildings in autumn in search of protected overwintering sites. Reports from Mid-Atlantic States where BMSB is a severe pest of fruit, field and vegetable crops indicate that BMSB usually develops from a household nuisance into a significant agricultural pest over a period of 5-10 years. To date, there has been no official confirmation of fruit or agronomic crop injury in Wisconsin, but this will likely change in 2018. Any swarms of stink bugs noticed this fall should be reported to the DATCP Pest Survey Program at 1-866-440-7523.

LATE BLIGHT: Development of this disease continues to be reported. The UW has confirmed several cases on to-mato in Dane, Kenosha, Jefferson, Pierce and Waukesha counties as of August 31, as well as on potato in Iowa, Portage and Waushara counties. UW-Extension Vegetable Plant Pathologist Dr. Amanda Gevens is encouraging growers to submit symptomatic plants to her lab or the UW Plant Disease Diagnostic Clinic:

DEGREE DAYS JAN 1 - AUGUST 30

| LOCATION | 50°F | 2016 | NORM | 40°F |
|--------------|------|------|------|------|
| Dubuque, IA | 2570 | 2546 | 2404 | 4086 |
| Lone Rock | 2299 | 2492 | — | 3725 |
| Beloit | 2345 | 2621 | 2445 | 3823 |
| Sullivan | 2204 | 2262 | 2315 | 3633 |
| Madison | 2290 | 2483 | 2329 | 3726 |
| Juneau | 2182 | 2210 | — | 3588 |
| Racine | 2181 | 2431 | — | 3599 |
| Waukesha | 2158 | 2171 | — | 3577 |
| Milwaukee | 2180 | 2458 | 2249 | 3591 |
| Hartford | 2131 | 2176 | — | 3536 |
| Appleton | 2124 | 2166 | — | 3494 |
| Green Bay | 2067 | 2136 | 2095 | 3423 |
| Big Flats | 2163 | 2328 | — | 3525 |
| Hancock | 2010 | 2328 | 2258 | 3343 |
| Port Edwards | 1993 | 2303 | 2213 | 3319 |
| La Crosse | 2377 | 2689 | 2543 | 3823 |
| Eau Claire | 2197 | 2370 | 2294 | 3586 |
| Cumberland | 1696 | 1946 | 2152 | 2999 |
| Bayfield | 1696 | 1765 | — | 2947 |
| Wausau | 1774 | 2116 | 2106 | 3071 |
| Medford | 1694 | 1877 | 1931 | 2977 |
| Crivitz | 1867 | 2010 | — | 3149 |
| Crandon | 1543 | 1883 | 1635 | 2783 |

Method: Modified B50; Modified B40 as of January 1, 2017. NORMALS based on 30-year average daily temps, 1981-2010.

<https://pddc.wisc.edu/sample-collection-and-submission/>. Testing will provide late blight confirmation and pathogen genotyping to guide fungicide selection. Both the US-8 and US-23 genotypes have been detected in Wisconsin this season; the US-8 found in Portage and Waushara counties and is resistant to Ridomil. Plants showing symptoms of late blight cannot be saved and should be disposed of in plastic bags to limit its spread.

FORAGES & GRAINS

PEA APHID: Late-season counts range widely from 0.5-12 per sweep and average four per sweep. One alfalfa field surveyed in Vernon County contained 19 per sweep, the highest population documented since early June.

POTATO LEAFHOPPER: Surveys during the last week of August found very little change in leafhopper populations. Counts were below 0.7 per sweep in all fields sampled. Levels of this insect have been relatively low since peak-

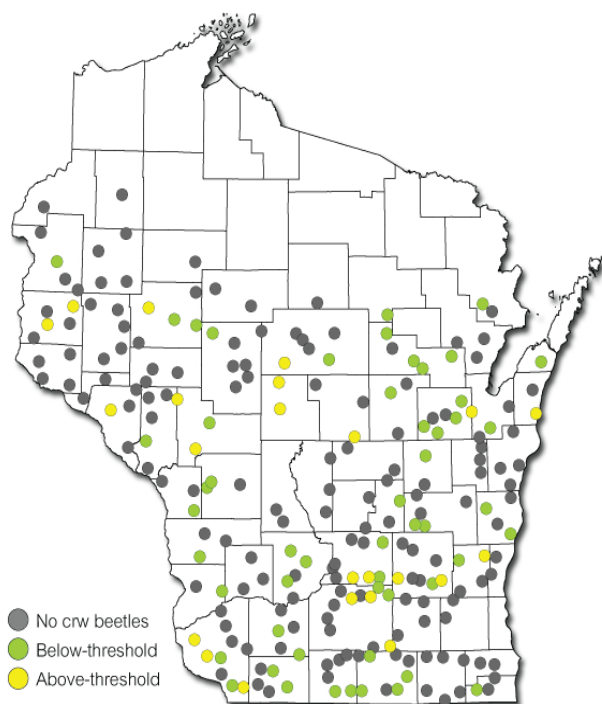
ing around mid-July. Significant population increases are unlikely to occur during the remainder of the growing season.


PLANT BUG: Mixed populations of the tarnished and alfalfa plant bug remain common in alfalfa. Counts vary from 0.1-1.5 per sweep, with an average of 0.5 per sweep. Plant bug nymphs are still appearing in sweep net collections, suggesting that reproduction is likely to continue well into September.

CORN

CORN ROOTWORM: Below is a map summarizing the findings of the 2017 corn rootworm beetle survey, completed two weeks ago. Beetle populations decreased markedly in all nine crop districts as compared to 2016, with district averages ranging from 0.1 to 0.3 per plant. The very low 2017 state average of 0.2 beetle per plant is less than half of last year's average of 0.5 per plant. Only 23 of the 229 (10%) cornfields sampled had above-threshold averages of 0.8-2.9 beetles per plant, while 53 (23%) had below-threshold averages in the range of 0.1-0.7 per plant. No corn rootworm beetles were observed in 153 (67%) of the fields.

Corn Rootworm Beetle Survey Results 2017
State Ave. = 0.2 beetles per plant



Wisconsin Department of Agriculture, Trade and Consumer Protection 

Results of the survey indicate that adult rootworm pressure has been much lower than expected this season. The substantial decrease in beetle abundance may result in fewer eggs being deposited into cornfield soils, and an overall lower risk of larval root damage to continuous corn next summer.

WESTERN BEAN CUTWORM: Larval infestations were noted in Monroe, Richland and Vernon counties in the past week. An exceptional cornfield near Cashton was 10% infested with 1-2 larvae (½-1¼ inches long) per ear, while infestation rates in other fields were lower and ranged from 1-3%. In all instances, the larvae were located in the ear tips where control is virtually impossible. Most larvae were in the late instars and should enter the pre-pupal overwintering stage by early September.



Western bean cutworm larva

Krista Hamilton DATCP

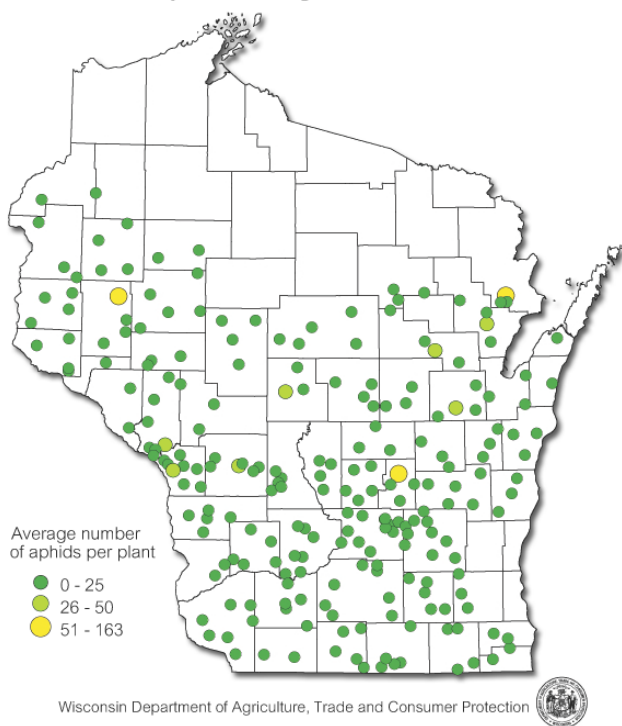
CORN EARWORM: Locally heavy flights were reported from Columbia and Dodge counties, while counts at all other monitoring locations were low. The primary late-season migration first accelerated from August 17-23 with the capture of 288 moths in 15 traps and another 351 migrants arrived this week. Egg laying is expected to continue well into September. All susceptible sweet corn fields should be closely monitored until harvest. Moth counts for the week ending August 31 were: Arlington 156, Beaver Dam 129, Coon Valley 14, Cottage Grove 19, Hancock 0, Janesville 8, Madison airport 2, Marshfield 2, Pardeeville 2, Prairie du Chien 0, Sun Prairie 12, and Watertown 7.

SOYBEANS

SOYBEAN APHID: The annual survey conducted in late July and August found a statewide average count of six

aphids per plant. This record low average compares to eight aphids per plant last year and is the lowest in 17 years of Wisconsin aphid surveys. Two hundred and twenty-eight soybean fields in the R2-R6 growth stages were sampled, with aphids counted on 40 plants per field. Densities were below 163 aphids per plant in all fields, and the majority of sites had average counts of less than 25 per plant. No sites contained above-threshold densities of 250 or more aphids per plant. Results of the survey confirm that aphid populations were low or moderate in most fields this season and widespread treatment for aphid control was not required.

Soybean Aphid Survey Results July 20 - August 29, 2017



JAPANESE BEETLE: Beetles are still apparent in crops, orchards and residential areas, although numbers are decreasing. Defoliation was observed in about 87% of the soybean fields examined during the aphid survey in August, suggesting that Japanese beetles were more prevalent than in recent years and that this invasive pest has become an increasingly significant threat to the state's agronomic crops. Last season, 74% of surveyed fields had some degree of feeding. Although some beetles may persist into September, much of their activity should decline in another two weeks.

WHITE MOLD: Reports indicate this disease is not as severe as expected considering that environmental condi-

tions have been conducive for mold development this season. Soybean producers and consultants are reminded that fields infected with white mold should be harvested last and all harvesting equipment must be thoroughly cleaned between fields to avoid spreading the sclerotia. Rotations of 2-3 years between soybean crops with corn or small grains can also reduce levels of the fungal pathogen in the soil.

FRUITS

BROWN MARMORATED STINK BUG: Fruit growers and homeowners are advised to watch for this pest as the bugs swarm during warm fall days in search of overwintering sites. The brown marmorated stink bug is established in Brown, Dane, Door and Rock counties, and likely in other portions of southern and eastern Wisconsin. Nymphs and adults usually remain active through October or early November. Any swarms of stink bugs noticed this fall should be reported to DATCP at 1-866-440-7523.



Brown marmorated stink bug damage on apple Tracy Leskey USDA ARS

CODLING MOTH: Moderate flights continued in a few southern orchard locations in the past week, but numbers have declined at most sites. The largest captures of 9-20 moths per trap were reported from Iowa, Racine and Waukesha counties. Apple growers are reminded that evaluating second-generation larval damage by early September will help to anticipate first-generation codling moth pressure next season. Orchards that have recorded captures higher than 10 moths per trap per week since the second flight began in July will likely find visible fruit damage at harvest, if the pest population is established in the orchard. If no damage is

observed this fall or less than 1% of fruits are affected, then the source of the moths may be from outside of the orchard.

SPOTTED WING DROSOPHILA: This invasive fruit pest will remain a serious threat to ripening fruit as the fall raspberry season continues, making it important for berry growers to maintain 5-day spray intervals as soon as first berry color change begins. Recent UMN studies have found that sprays applied in the early evening (1.5 hours before or after sunset) are most effective since peak SWD fly activity in raspberry crops occurs between 6:00 and 10:00 pm. Insecticide rotation is necessary for preventing SWD resistance development if short-interval sprays are being used, and pre-harvest interval (PHI) must be followed.



Male spotted wing drosophila fly David Handley extension.umaine.edu

Clean and timely harvests are also especially critical for SWD control. Dropped berries left on the orchard floor permit buildup and re-infestation, with as many as 20 flies emerging from a single fallen raspberry. Daily harvests are required and workers should be careful to harvest all mature raspberries available that day. Cooling fruit to 34-38°F immediately after harvest is advised if the berries are not being delivered to markets the same day. A summary of research updates and control recommendations for open-field berry producers can be found on the UMN FruitEdge SWD website: <https://www.fruitedge.umn.edu/82317swd>.

APPLE MAGGOT: Flies are expected to persist in orchards for several more weeks, or until about 2,800 degree days (modified base 50°F) have been reached. The base 50°F accumulation as of August 30 was 2,377 at La Crosse, 2,290 at Madison, 2,181 at Racine, and

2,067 near Green Bay. Apple maggot pressure has been variable but generally low this season. Continued maintenance of red sphere traps is recommended through September.

YELLOWJACKETS: Significant numbers of yellowjackets could soon begin damaging grapes in many of the state's vineyards. Grape clusters should be promptly harvested as they ripen to discourage yellowjacket feeding. Basic sanitation practices such as removing overripe or damaged fruit are also useful. Commercially available traps can help to reduce numbers and the population buildup that often occurs by late August, but these traps must be deployed early in the season. Insecticides are not effective in managing yellowjackets in vineyards.

SPOTTED TENTIFORM LEAFMINER: The third and last flight of the season has declined in most orchards. A few sites in Iowa, Marquette and Racine counties reported higher counts of 405-915 moths from August 24-31, but captures at all other sites were below 139 moths per trap, which is relatively low for this pest. Moth flights should subside by mid-September.

VEGETABLES

LATE BLIGHT: Potato and tomato growers are advised to continue protective fungicide treatments and monitoring plants for signs of infection. Development of this disease has been confirmed by the UW on tomato in five counties (Dane, Kenosha, Jefferson, Pierce and Waukesha) and on potato in three counties (Iowa, Portage and Waushara), though late blight is likely to be more widespread given favorable weather conditions throughout August.



Late blight on potato

Sue Boyetchko AAFC

SQUASH BUG: Egg deposition is still occurring in home gardens and larger plantings. Several fresh egg masses and many small nymphs were found this week on acorn squash in a La Crosse County, emphasizing the need for thorough fall clean-up of garden debris to reduce populations and eliminate winter hibernation sites. Crop rotation is also suggested if squash bugs have been a problem this summer.



Squash bug nymph

Krista Hamilton DATCP

FALL ARMYWORM: Low numbers of this late-season pest were registered in the Janesville black light trap in the past week. Fall armyworm moths seldom arrive in Wisconsin in damaging numbers, but the larvae occasionally appear in corn where they can be mistaken for the corn earworm. Fall armyworm larvae have a lateral stripe and are usually light brown or black in color, whereas the corn earworm larva may be green, yellow, pink or tan.



Fall armyworm larva

www.cropscience.bayer.com

NURSERY & FOREST

SHOTHOLE BORER: The tiny circular holes evident on the bark of a pear tree in a southeast Wisconsin nursery were determined to be caused by the shothole borer, also known as the fruit tree bark beetle. This beetle lives beneath the bark and its larvae form distinctive galleries as they feed. The shothole borer is a native of Europe but now occurs throughout the U.S. and southern Canada where it attacks injured or stressed apple, cherry, pear and plum trees. Because chemical controls have not proven very successful, the best management approach is to keep trees healthy. Any infested trees or branches should be pruned and destroyed in winter to prevent beetles from emerging the following spring.



Shothole borer damage

Michael Falk DATCP

BOXWOOD PSYLLID: Boxwoods inspected at a nursery grower yard in Kenosha County last week were showing the characteristic leaf cupping symptoms indicative of feeding by boxwood psyllid. The cupped foliage is caused by the psyllid nymphs, which remain protected within the leaves and continue to feed throughout the season. Damage resulting from their feeding is usually minor and treatment is usually not needed.

MAPLE TRUMPET SKELETONIZER: Sugar maples in the Rhinelander area of Oneida County were showing trumpet-like tubes of frass and silk constructed by the maple trumpet skeletonizer. The larvae of this insect create a protective tube inside a folded maple leaf and feed on leaf tissue from mid-summer until fall. Mature caterpillars drop from the tube and form cocoons from pieces of leaves on the ground, eventually emerging as adults the

following summer. The leaf damage caused by this insect appears late in the season and is normally not a threat to tree health. If aesthetics are a concern, affected leaves should be removed and destroyed to reduce the number of reproducing adults in the area the following year.



Maple trumpet skeletonizer leaf injury

Timothy Allen DATCP

LINDEN LEAF GALL MITE: The distinctive nail-shaped galls caused by this eriophyid mite were found on linden foliage in Oneida County. The galls usually form on the shaded, lower leaves and are the result of spring feeding by overwintered mites. Earlier in the season, the galls are greenish yellow, but most begin to turn reddish-brown by fall. The linden leaf gall mite specializes on plants in the genus *Tilia* and occurs on littleleaf linden and basswood trees. Its damage is primarily a cosmetic nuisance and treatment is not required.



Linden leaf gall mite

Tim Allen DATCP

GUIGNARDIA LEAF BLOTCH: Symptoms of this common leaf blight were noticed by DATCP inspectors on horse

chestnut trees last week in Racine and Washington counties. The leaves of affected plants develop large reddish brown blotches surrounded by yellow tissue, often causing the foliage to curl and brown. In severe cases, leaves may fall prematurely in late summer. Since the foliage is usually not seriously damaged until after the tree has completed much of its annual growth, the disease is primarily aesthetic. Disease development can be reduced by disposing of fallen leaves in autumn to decrease inoculum levels.

SEPTORIA LEAF SPOT: This fungal leaf spot disease that commonly develops during the wet summer months has been observed in many nurseries throughout the state this season, particularly on dogwood. Septoria leaf spots are small, dark purple lesions that first appear on lower leaves, but may become so numerous that they cover the leaves by the end of summer. Heavily spotted leaves may be shed early. Promoting good air flow through proper plant spacing is the simplest way to reduce the incidence of this common fungal disorder. Cleaning up and disposing of fallen leaves on the ground and on infected trees or shrubs is also recommended.



Septoria leaf spot on dogwood

DATCP Nursery Program

APPLE INSECT & BLACK LIGHT TRAP COUNTS AUGUST 24 - 30

| COUNTY | SITE | STLM ¹ | RBLR ² | CM ³ | OBLR ⁴ | OFM ⁵ | LPTB ⁶ | DWB ⁷ | AM RED ⁸ | YELLOW ⁹ |
|-------------|---------------|-------------------|-------------------|-----------------|-------------------|------------------|-------------------|------------------|---------------------|---------------------|
| Bayfield | Keystone | 35 | 2 | 1 | 7 | 2 | 0 | 1 | 0 | **0 |
| Bayfield | Orienta | 72 | 1 | 0 | 0 | 0 | 1 | 0 | **0 | **0 |
| Brown | Oneida | — | — | — | — | — | — | — | — | — |
| Columbia | Rio | — | — | 4 | 0 | 15 | 0 | 0 | *4 | **0 |
| Crawford | Gays Mills | — | — | — | — | — | — | — | — | — |
| Dane | DeForest | — | — | — | — | — | — | — | — | — |
| Dane | Mt. Horeb | 14 | 21 | 1 | 3 | 0 | 0 | 0 | 0 | **0 |
| Dane | Stoughton | — | — | — | — | — | — | — | — | — |
| Fond du Lac | Campbellsport | 100 | 25 | 0 | 3 | 0 | 0 | 0 | *0 | **0 |
| Fond du Lac | Malone | — | — | — | — | — | — | — | — | — |
| Fond du Lac | Rosendale | 24 | 11 | 4 | 1 | 0 | 0 | 1 | *2 | **1 |
| Grant | Sinsinawa | — | — | — | — | — | — | — | — | — |
| Green | Brodhead | 34 | 59 | 0 | 4 | — | 0 | — | *0 | **0 |
| Iowa | Mineral Point | 915 | 92 | 20 | 0 | 0 | 0 | 0 | **4 | — |
| Jackson | Hixton | 123 | 42 | 3 | 0 | 0 | 0 | 0 | *1 | **0 |
| Kenosha | Burlington | 100 | 40 | 4 | 2 | 5 | 0 | 1 | 0 | **0 |
| Marathon | Edgar | — | — | — | — | — | — | — | — | — |
| Marinette | Niagara | 92 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | **0 |
| Marquette | Montello | 405 | 41 | 1 | 10 | 0 | 0 | 0 | 0 | **0 |
| Ozaukee | Mequon | — | — | 2 | — | — | — | — | *2 | **0 |
| Pierce | Beldenville | — | — | — | — | — | — | — | — | — |
| Pierce | Spring Valley | 91 | 103 | 0 | 3 | 0 | 0 | 0 | *1 | **0 |
| Racine | Raymond | 139 | 56 | 12 | 5 | 7 | 4 | 1 | *0 | **0 |
| Racine | Rochester | 655 | 7 | 6 | 10 | 0 | 0 | 0 | *1 | **0 |
| Richland | Hill Point | 103 | 143 | 0 | 7 | 0 | 1 | 0 | **1 | **3 |
| Sheboygan | Plymouth | — | — | — | — | — | — | — | — | — |
| Walworth | East Troy | — | — | — | — | — | — | — | — | — |
| Walworth | Elkhorn | — | — | — | — | — | — | — | — | — |
| Waukesha | New Berlin | 92 | 27 | 9 | 10 | 4 | 4 | 5 | *0 | **0 |

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵Oriental fruit moth; ⁶Lesser peachtree borer; ⁷Dogwood borer; ⁸Apple maggot red ball; *Unbaited; **Baited; ⁹Apple maggot yellow board.

| COUNTY | SITE | BCW ¹ | CEL ² | CEW ³ | DCW ⁴ | ECB ⁵ | FORL ⁶ | SCW ⁷ | TA ⁸ | VCW ⁹ | WBC ¹⁰ |
|-------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|------------------|-----------------|------------------|-------------------|
| Columbia | Arlington | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| Columbia | Pardeeville | 0 | 1 | 1 | 66 | 1 | 1 | 1 | 4 | 1 | 1 |
| Dodge | Beaver Dam | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 1 | 0 | 0 |
| Fond du Lac | Ripon | 0 | 0 | 0 | 20 | 21 | 0 | 0 | 0 | 0 | 0 |
| Grant | Prairie du Chien | 0 | 0 | 0 | 8 | 0 | 10 | 0 | 0 | 0 | 0 |
| Manitowoc | Manitowoc | — | — | — | — | — | — | — | — | — | — |
| Marathon | Wausau | — | — | — | — | — | — | — | — | — | — |
| Monroe | Sparta | 0 | 0 | 0 | 15 | 1 | 2 | 12 | 0 | 0 | 0 |
| Rock | Janesville | 0 | 1 | 2 | 1 | 0 | 7 | 0 | 2 | 0 | 0 |
| Walworth | East Troy | 0 | 0 | 0 | 72 | 0 | 5 | 0 | 0 | 0 | 0 |
| Wood | Marshfield | 0 | 0 | 3 | 11 | 2 | 0 | 6 | 0 | 0 | 0 |

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