

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

Seasonable, mild weather maintained favorable conditions for summer crop development in Wisconsin. Temperatures were near normal for late July, with highs in the 70s and 80s and lows ranging from the upper 40s to mid-60s. Aside from occasional rain in the eastern half of the state, mainly dry, sunny conditions prevailed during the week. The sunny, breezy weather allowed for timely harvesting of winter wheat and third-crop alfalfa, reported as 10% complete, or five days ahead of last year and seven days ahead of average, at the start of the week. Corn and soybean development also continued to outpace last year's rates and the 5-year averages, with corn silking progress advancing 23 points during the week to 53% complete, and 26% of soybeans setting pods. The latest USDA NASS report ranks 81-87% of alfalfa, corn, oats, potatoes, soybeans, and wheat in good to excellent condition, far better than last year's ratings of 70-79%.

LOOKING AHEAD

TRUE ARMYWORM: Damaging populations have been observed in Columbia, Eau Claire, Marquette, Rusk, and Vernon counties since the last report. According to one account from Marquette County, masses of caterpillars migrated across roadways from alfalfa into corn on July 16, where they stripped leaves to the midribs on more

than 50% of the plants. Other reports indicate the infestations are localized and range in severity from light to severe. Armyworm outbreaks occur in an irregular geographical pattern and are difficult to accurately predict, making early detection imperative. Crop scouts and growers should remain alert in the week ahead for developing problems.

CORN EARWORM: Migrants arrived in low numbers for the third week. Although the monthly total count of only 73 moths at 14 pheromone trap locations signals a low risk of earworm infestation as of late July, scouting of silking cornfields should be increased. Trapping network participants are reminded to replace lures on a weekly basis.

WESTERN BEAN CUTWORM: Moth counts have peaked at most southern and central monitoring sites. The cumulative state total as of July 26 is 310 moths in 55 pheromone traps, which is far lower than last year's count of 924 moths in 70 traps and the second lowest late July count since WBCW trapping surveys began in Wisconsin in 2005. Captures are expected to peak next week near Wausau across the northern counties. Preliminary results of the 2018 annual trapping survey are summarized in the map on page 94.

JAPANESE BEETLE: Reports suggest that these beetles are abundant and significant damage is occurring in

some apple orchards, nurseries and vineyards. Continued weekly scouting is advised in August for apples, corn, grapes, soybeans, and all other susceptible crops, as long as the beetles are present.



Japanese beetles

www.planetnatural.com

SOYBEAN APHID: Monitoring is especially critical as more fields enter the reproductive stages. DATCP surveys indicate average densities are low at fewer than 10 aphids per plant, though aphid pressure usually intensifies at this time of year, and individual fields could require treatment early next month. Control is not recommended until soybean fields have been thoroughly sampled to determine if the established threshold of 250 aphids per plant on 80% of the plants has been exceeded. Field-wide average counts have not surpassed this level in any soybean field surveyed by DATCP this season.

FORAGES & GRAINS

POTATO LEAFHOPPER: Populations of this alfalfa pest have been low to moderate throughout July. Surveys from July 19-25 found counts of 0.2-1.1 per sweep in 12 to 32-inch fields, with an average of 0.4 per sweep. Continued monitoring of third- and fourth-crop alfalfa throughout August is recommended.

ALFALFA CATERPILLAR: This insect continues to be common in southern and western Wisconsin. Counts vary considerably from field to field, but the average is about 12 per 100 sweeps. As noted last week, adults are also prevalent, and an increase in larvae and feeding injury should be anticipated early next month. Significant damage is rare but can develop if heavy egg laying occurs in recently-cut fields and larvae defoliate the regrowth.

DEGREE DAYS JANUARY 1 - JULY 25

LOCATION	50°F	2017	NORM	40°F
Dubuque, IA	1974	1868	1688	3033
Lone Rock	1762	1666	—	2783
Beloit	1722	1703	1711	2736
Sullivan	1614	1574	1612	2584
Madison	1718	1647	1633	2722
Juneau	1643	1556	—	2609
Racine	1489	1519	—	2435
Waukesha	1539	1521	—	2490
Milwaukee	1542	1509	1507	2498
Hartford	1584	1507	—	2541
Appleton	1660	1486	—	2588
Green Bay	1610	1444	1441	2532
Big Flats	1666	1536	—	2628
Hancock	1548	1421	1584	2464
Port Edwards	1568	1411	1549	2491
La Crosse	1856	1690	1786	2870
Eau Claire	1765	1556	1602	2712
Cumberland	1452	1190	1489	2328
Bayfield	1220	916	—	2029
Wausau	1422	1250	1457	2308
Medford	1373	1190	1329	2249
Crivitz	1491	1310	—	2372
Crandon	1348	1088	1139	2198

*Method: Modified B50; Modified B40 as of January 1, 2018.
NORMALS based on 30-year average daily temps, 1981-2010.*

PLANT BUG: Counts are similar to last week at 0.1-1.2 adults and nymphs per sweep. Most fields contain 0.5 plant bugs or fewer per sweep, a fraction of the economic threshold of five per sweep. Nymphs remain more abundant than adults in alfalfa, indicating that populations may build.

PEA APHID: Levels have decreased to 1-3 per sweep in alfalfa fields surveyed in central and western Wisconsin.

CORN

TRUE ARMYWORM: Locally heavy populations are developing in corn, barley and wheat. The infestations reported in the last two weeks have been scattered and varied in terms of severity, but many accounts indicate that larvae of all sizes are present, which may complicate control decisions. Any decision to treat armyworms should be based on the size and abundance of the

larvae, and not the extent of the current damage. Sampling five sets of 20 plants (100 total) for armyworms and signs of feeding is required. Spot treatment is acceptable for infestations of two or more armyworms (3/4 to 1 inch or smaller) per plant on 25% of the plants, or one worm per plant on 75% of the plants. Treating small grains is suggested for levels of three or more armyworms per square foot, though much of the small grains acreage is reaching full maturity. Producers and advisors are reminded to cross check PHIs to make sure that the insecticide align with harvest plans.



Corn plants defoliated by armyworms

Krista Hamilton DATCP

CORN ROOTWORM: Surveys this week found low average counts of 0.1-0.3 beetles per plant, with no beetles observed in 86% of cornfields sampled. In fact, very few rootworm adults have been noted so far this season. Although the risk of reduced pollination from beetle silk clipping appears low, scouting is suggested for corn with fresh silks to assess beetle levels and to determine if pollination is being impaired. Corn sites with an average count above five beetles per plant and silks clipped to less than ½ inch before pollination is complete are appropriate for treatment. The UW protocol for sampling adult rootworms is to count the number of western and northern beetles on 50 plants, examining 10 plants selected at random in each of five areas in the field. Three scouting sessions at 7 to 10-day intervals are recommended from late July through August.

EUROPEAN CORN BORER: Moths of the second flight continue to appear in black light traps, signaling that eggs are being deposited on corn and other hosts. Summer moth activity will likely peak across the southern two-thirds of Wisconsin by August 5. Sweet corn and non-Bt field corn should be inspected for egg masses and larvae

before 2,100 degree days (modified base 50°F) are surpassed and the treatment window for second generation corn borers closes.



European corn borer moth

Steven House farm4.static.flickr.com

CORN EARWORM: Moth counts remain low, with pheromone traps in Arlington, Beaver Dam, Marshfield and Ripon registering weekly captures of 1-5 migrants per trap. Eight other monitoring location captured no moths during the week. Protective treatment of sweet corn fields with green silks is not recommended until pheromone traps register 5-10 moths per night for three consecutive nights.



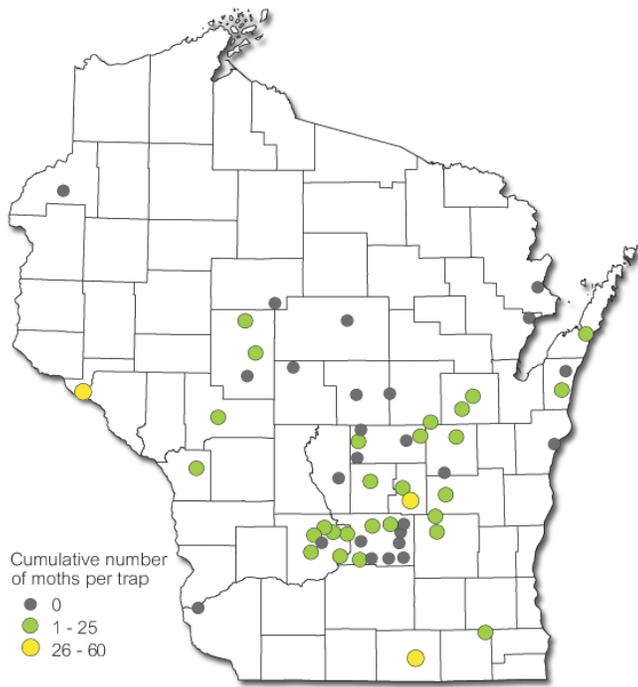
Corn earworm larva

Krista Hamilton DATCP

WESTERN BEAN CUTWORM: The western bean cutworm degree day model indicates that 75% or more of the moth population has emerged near Beloit, Madison, La Crosse, Spring Green and other advanced southern locations. Emergence is about 50% complete in the southeast and central counties where the flight likely peaked in the past

week. The high count for the period of July 20-26 was 43 moths in the pheromone trap near Kingston in Green Lake County. The cumulative state count to date is 310 moths in 55 pheromone traps, which is the second lowest late July total (after 2015) since surveys for this pest began in 2005.

Western Bean Cutworm Counts 2018



Wisconsin Department of Agriculture, Trade and Consumer Protection 

JAPANESE BEETLE: Low to moderate infestations of 3-50 beetles per 100 plants have been observed since early July in Wisconsin corn. The greatest threat to fields at this time of year is when large numbers of beetles converge on the silks, potentially impairing pollination. Control is warranted when populations exceed three beetles per ear when pollination is occurring.

SOYBEANS

AMERICAN PAINTED LADY: Larvae of the American painted lady butterfly, also known as thistle caterpillars, have been observed at low levels in soybean fields this month. Large populations develop in some years, but treatment is discouraged since the mortality rates generally are high and the solitary caterpillars, which construct a messy silken web between the leaves, seldom cause significant defoliation. The larvae observed in the

past week were full-grown and likely to pupate soon. Adult butterflies should begin emerging by early August.



Thistle caterpillar

Erin Hodgson Iowa State University

SOYBEAN APHID: Observations from the annual aphid survey currently underway suggest populations are increasing but remain low for late July. Only two of 53 fields sampled this week had an average count greater than 20 aphids per plant on 100% of the plants. The highest count documented as of July 25 was 72 aphids per plant in a Waupaca County field. All other sites had averages below 10 aphids per plant.



Soybean aphids on soybean stem

Krista Hamilton DATCP

Although surveys indicate populations are low, soybean aphids can reproduce rapidly under the mild, dry weather pattern forecast for early August, with the greatest population growth occurring at temperatures of 70-80°F. Soybean producers are reminded that insecticide treatment is not advised until the threshold of 250 aphids per plant on 80% of the plants throughout the field has been

exceeded. Insecticide treatment, if required, is most effective when applied during the R2-R4 (full bloom to full pod) stages.

JAPANESE BEETLE: Light to moderate defoliation is widespread in soybeans, though surveys have found no fields with above threshold injury during the three-week period from July 9-26. The economic threshold for Japanese beetle and other leaf feeding soybean pests is 20% defoliation between bloom and pod fill. Spot treatment is an acceptable form of control for fields with the heaviest injury occurring in the margins.

FRUITS

STINK BUG: Surveys in field crops suggest that activity is escalating and stink bugs are likely to start invading orchards in greater numbers. Growers can begin inspecting fruits in the week ahead for dimples or dark, irregular circular depressions typical of stink bug feeding, and should flag sites with multiple depressions on the same fruit or tree. Damage is often limited to specific areas in the orchard and depending on the distribution of the population, spot treatment may be adequate.



Brown marmorated stink bug damage

www.carrollcountytimes.com

CODLING MOTH: The second flight is well underway. Regular trap checks should continue in August to determine if the economic threshold of five moths per trap per week is exceeded. The need for treatment of the second larval generation is less consistent than with the first generation, and depends upon the success of spring CM controls and whether pressure is coming from wild trees outside the orchard. Spot treatment is usually an effective approach for managing second-generation larvae.

The high count for the last reporting period was 20 moths in Racine County, where a significant flight was recorded overnight on July 19.

JAPANESE BEETLE: Apple orchards in southern and western Wisconsin are reporting heavy beetle populations, with significant damage to foliage and the terminal ends of branches along orchard perimeters. If the beetles are causing unacceptable injury and treatment is required, growers can minimize insecticide use by spot treating only the most-infested varieties. Because sprayed trees can be reinvaded, infested orchard blocks should be inspected weekly as long as beetles are present. Never spray when bees are foraging.



Japanese beetles

[foggychan flickr.com](https://www.flickr.com/photos/foggychan/)

APPLE MAGGOT: Captures of flies on red spheres and yellow sticky traps have increased at several sites, indicating adult emergence may have peaked in southern and central Wisconsin. The development model for AM predicts peak fly emergence for 1,600 degree days (base 50°F). The Milwaukee-Racine area should accumulate 1,600 GDD next week, while the areas north of Wausau can expect to reach this point during the second week of August. Heavy oviposition on apples is expected to continue for another 2-3 weeks.

WHITE APPLE LEAFHOPPER: Peak egg laying has occurred over much of the southern half of the state with the accumulation of 1,750 degree days (base 48°F), and second-generation eggs are beginning to hatch. Apple growers who observed damage caused by the first generation several weeks ago should scout for stippling and whitish spots on leaves in the interior of tree canopies. The summer nymphs feed well into September and can cause significant chlorophyll loss. Ordinarily, control

should target first-generation nymphs, but if justified, treatments for the second generation are also effective.



White apple leafhoppers

utahpests.usu.edu

VEGETABLES

SQUASH BUG: Home gardeners are reporting increasing squash bug populations on cucumber, summer squash and zucchini. The simplest control is to remove the bugs (eggs, nymphs, and adults) from plants and submerge the bugs in a bucket of soapy water. Growers are also advised to dispose of all dead foliage and other plant material that can harbor large numbers of nymphs.



Squash bug eggs and nymphs

Krista Hamilton DATCP

STRIPED CUCUMBER BEETLE: Adults were observed this week at the low rate of 2-5 per 20 plants on Dane and Rock County vegetable farms. This insect has been scarce this season, but growers of cucurbits should continue to monitor plants for beetles and signs of bacterial wilt, as populations are likely to increase next month.

Control is justified for infestations of one beetle per plant in cucumbers and young pumpkins, and five beetles per plant in watermelon and squash.

SEPTORIA LEAF SPOT: Tomato plants in Dane and Pierce counties were recently diagnosed by the UW Plant Disease Clinic with this common fungal disease. Symptoms are small, circular yellow spots that first appear on the undersides of older, lower leaves after fruit set. As the spots mature, they turn brown or gray and enlarge to about 1/4 inch in diameter. In the center of the spots are many black fruiting bodies called pycnidia, which cause secondary infections, generally progressing upward on the plant. Heavily infected leaves turn yellow and drop prematurely, leaving fruits exposed and more susceptible to sunscald.

Cultural controls include a one-year rotation out of tomato, staking plants to promote air flow, applying mulch around the base of plants to minimize water splash, and eliminating sources of inoculum in the field by removing or destroying tomato debris by deep plowing immediately after harvest.



Septoria leaf spot on tomato

missouribotanicalgarden.org

BLOSSOM END ROT: This relatively common garden problem is appearing as tomatoes ripen. The dark, water-soaked spot that starts at the blossom end of the fruit and enlarges around the fruit surface is caused by calcium imbalance and fluctuations in soil moisture. Blossom-end rot is most common when the growing season begins wet and later becomes dry when fruit is setting. Fungicides and insecticides are not an effective control for this physiological disorder. Maintaining consistent soil moisture levels throughout the growing season is important for reducing its occurrence. During periods of dry weather,

watering thoroughly once or twice each week to moisten the soil to a depth of six inches is advised.



Blossom end rot on tomato

Krista Hamilton DATCP

IMPORTED CABBAGEWORM: Moths are still very common around home gardens, indicating the potential for damaging larval populations in August. Egg deposition on cole crops is expected to intensify in the next 1-2 weeks. Scouting is recommended through harvest.



Imported cabbageworm larvae

www.insectpod.com

CORN EARWORM: Counts have been very low at less than 13 moths per trap per week since migrants began arriving in the state during the first week of July. This suggests that the primary migration has not yet begun.

JAPANESE BEETLE: Surveys of vegetable gardens and farms in Columbia, Dane and Rock counties found beetles 1-35 per 20 plants, with an average of 12 beetles per 20 plants. As is the case for squash bugs and many other garden pest, physical removal of Japanese beetles

is the preferred option for small gardens and plantings. The best time to handpick beetles is in the evening and early morning, when the beetles are less active. Pheromone traps attract beetles more beetles than they catch and should not be used as a form of control.

SQUASH VINE BORER: Damage to the stems of pumpkins and squash has become more pronounced as larvae approach maturity. Squash vine borer (SVB) larvae in the La Crosse area of western Wisconsin are full grown and will likely pupate by early August. Cultural control advised for SVB include destroying vines after harvest to prevent borers still in the larval stage from completing development. Fields that have been attacked in the past are most likely to have SVB problems in the future.

NURSERY & FOREST

VIBURNUM CROWN BORER: Nursery inspectors determined that highbush cranberry shrubs in Oneida County showing branch flagging were infested with the viburnum crown borer. The larvae of this clearwing moth attack the base of viburnum shrubs, tunneling in the cambium just under the bark from below the soil line to about 18 inches high. Initial symptoms include wilting, sparse foliage and early fall color. Younger plants, those that have just been transplanted, and plants under stress appear to be more susceptible to infestation.



Viburnum crown borer larva

Timothy Allen DATCP

Maintaining healthy viburnum plants by watering, mulching, and preventing wounds can reduce the risk of attack. Protecting susceptible viburnums with an insecticide sprayed on the bark of the plant from the soil line to 18 above ground may also be considered, though timing is

critical. Treatments must be made while adult moths are active beginning in June. The use of pheromone traps is advised to determine the male moth flight period.

JUMPING WORMS: Invasive “jumping worms” were recently found by inspectors in the growing area of a Columbia County nursery. This damaging Asian pest, named for its unusual thrashing behavior when disturbed, was first detected in the state in 2013. The term ‘jumping worms’ refers to multiple species, all in the genus *Amyntas*.

Jumping worms reproduce asexually and infest soil in high densities, altering soil texture and composition. Their feeding strips nutrients, kills plants, and increases erosion. A single worm can start a new population. Human-assisted dispersal by moving potted plants, soil, compost, mulch and fishing bait is a leading contributor to the spread of jumping worms. Actions recommended to reduce their spread include cleaning soil and debris from vehicles, equipment, gardening tools, and shoes before moving to and from a work site or recreational area. Gardeners and property owners who suspect they have jumping worms should keep any potentially infested plant, soil and mulch on site. These materials should not be sold, transplanted, or shared.



Jumping worm

Josef Görres, University of Vermont

The 1.5 to 8-inch long worms can be identified by the smooth, whitish non-segmented band around the body (clitellum). Other common worm species have a raised band.

More information can be found on the DNR website at <https://dnr.wi.gov/topic/Invasives/fact/jumpingworm/index.html>. Sightings of jumping worms can be reported to the

Wisconsin DNR by emailing invasive.species@wi.gov or uploading a photo to the First Detector’s Network, fyi.uwex.edu/wifdn/get-involved/report-invasive-species.

FALL WEBWORM: The characteristic nests constructed by fall webworm larvae are appearing in southern and central Wisconsin. This native species feeds on over 120 different species of deciduous forest, shade, fruit, and ornamental trees, but avoids conifers. Its nests or webs appear in trees later in the season than nests made by other web- and tent-making species found in Wisconsin.



Fall webworm larvae

Marcia Wensing DATCP

The larvae inside the nests are pale yellow with blackish lateral spots. Mature caterpillars develop tufts of silky hairs and are about one-inch long. Products containing Bt are effective against young caterpillars if the material penetrates the webbing, but manual removal or disruption of the webs is the preferred form of control. Pruning infested branches is not warranted, however, and causes unnecessary harm to the host plants.

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 19 - 25

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	DWB ⁵	LPTB ⁶	BMSB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	29	5	0	3	23	2	0	0	3
Bayfield	Oriente	129	0	0	34	4	4	0	—	—
Brown	Oneida	250	44	10	5	62	1	0	0	0
Columbia	Rio	21	25	4	3	2	0	0	0	0
Crawford	Gays Mills	15	24	1	3	0	4	—	10	—
Dane	DeForest	—	—	—	—	—	—	—	—	—
Dane	Mt. Horeb	35	18	2	1	3	3	0	**1	1
Dane	Stoughton	39	5	6	4	0	2	0	3	3
Fond du Lac	Campbellsport	39	43	0	0	26	1	0	0	0
Fond du Lac	Malone	10	11	14	19	2	0	0	**2	0
Fond du Lac	Rosendale	56	73	4	6	7	2	0	0	2
Grant	Sinsinawa	5	—	5	10	—	—	—	—	—
Green	Brodhead	63	54	9	3	5	3	—	0	0
Iowa	Mineral Point	280	21	45	1	37	5	0	**2	*0
Jackson	Hixton	38	22	0	1	33	0	0	0	1
Kenosha	Burlington	100	22	6	0	123	1	0	1	0
Marathon	Edgar	—	—	—	—	—	—	—	—	—
Marinette	Niagara	279	38	0	4	12	8	—	2	0
Marquette	Montello	211	67	4	0	0	7	0	0	0
Ozaukee	Mequon	175	23	5	5	2	0	—	*2	—
Pierce	Beldenville	—	—	—	—	—	—	—	—	—
Pierce	Spring Valley	21	55	0 ^{MD}	4	68	6	0	2	1
Racine	Raymond	94	7	17	0	13	7	0	0	0
Racine	Rochester	110	16	16	0	23	0	0	*9	0
Richland	Hill Point	34	11	5	0	12	5	0	**0	**1
Sheboygan	Plymouth	365	55	0 ^{MD}	0	32	0	0	**11	0
Walworth	East Troy	21	3	0	8	2	7	—	1	0
Walworth	Elkhorn	50	15	0	7	0	15	—	0	0
Waukesha	New Berlin	—	—	—	—	—	—	—	—	—

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵Lesser peachtree borer; ⁶Dogwood borer; ⁷Brown marmorated stink bug; ⁸Apple maggot red ball; *Unbaited; **Baited; ⁹Apple maggot yellow board; ¹⁰Counts are for two-week period, June 28-July 11; ^{MD}Mating disruption.

COUNTY	SITE	BCW ¹	CEL ²	CEW ³	DCW ⁴	ECB ⁵	FORL ⁶	SCW ⁷	TA ⁸	VCW ⁹	WBC ¹⁰
Columbia	Pardeeville	0	2	0	2	11	3	0	4	0	5
Dodge	Beaver Dam	3	4	0	0	0	0	0	7	0	17
Fond du Lac	Ripon	5	0	0	4	7	2	0	8	0	9
Grant	Prairie du Chien	2	0	0	0	5	0	0	0	0	0
Manitowoc	Manitowoc	0	0	0	2	0	3	0	22	0	0
Marathon	Wausau	1	0	0	9	12	39	3	7	0	12
Monroe	Sparta	0	0	0	0	9	1	0	0	0	4
Rock	Janesville	1	0	0	0	0	1	0	9	0	0
Walworth	East Troy	0	0	0	1	0	6	0	1	0	19
Wood	Marshfield	2	1	2	1	2	2	0	3	0	4

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