

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

Another week of mild late summer weather benefited fieldwork and crop development throughout Wisconsin. Conditions were breezy and mostly dry, except for a few early-week showers and thunderstorms that developed across the central and northwestern regions. The rainfall caused only brief delays in harvesting of oats, sweet corn, and third- and fourth-crop alfalfa before a drier, sharply cooler weather pattern settled over the state for the remainder of the week. Early morning low temperatures over the far northern counties approached freezing on August 24, with light frost reported in the northeast. Condition ratings for the state's corn improved by one percentage point and 71% is now categorized in good to excellent condition, while ratings for hay, potatoes and soybeans all declined by 1-4 points. Corn and soybean growers have become concerned about whether their crops will mature before the first killing freeze.

LOOKING AHEAD

WESTERN BEAN CUTWORM: Moth flights have ended statewide. This season's cumulative total capture of 1,854 moths in 70 traps (26 per trap average) from June 18-August 23 indicates the moth population was larger than last year when 1,530 moths were collected in 75 traps (20 per trap average). The 2017 average count is

also slightly higher than the 13-year survey average of 23 moths per trap and the fourth highest since surveys began in 2005. Most larvae resulting from the flight are fully developed and should enter the pre-pupal overwintering stage by September. Monitoring network participants may remove their traps at this time.

LATE BLIGHT: Fresh market tomato producers and home gardeners are advised to continue monitoring plants for signs of late blight infection. Development of this disease has been confirmed by the UW on tomato in Dane, Jefferson, Pierce and Waukesha counties, and on potato in Portage and Waushara counties. Plants showing symptoms of late blight cannot be saved and should be disposed of in plastic bags to limit its spread. Symptomatic plants may be submitted for free testing to the UW Plant Disease Diagnostic Clinic: <https://pddc.wisc.edu/sample-collection-and-submission/>.

CORN EARWORM: Migrants arrived in significant numbers for the first time this season. The DATCP monitoring network of 15 pheromone traps registered a total of 288 moths during the week ending August 23, with the largest captures of 40, 49 and 111 moths occurring in Columbia, Dane and Fond du Lac counties. The week's high count of 111 moths per trap was reported from Arlington in Columbia County. Egg laying is likely to intensify with this late-season migration and the risk of damage to sweet corn will persist into September.

CORN ROOTWORM: The annual survey completed last week documented the lowest beetle counts since 1972. Average populations in all nine agricultural districts were well below the 0.75 beetle per plant level that indicates root injury potential next season, and the state average of 0.2 per plant is the lowest in recorded history of rootworm surveys in Wisconsin. Results of the survey are summarized in the **CORN** section.



Western corn rootworm beetles Krista Hamilton DATCP

BROWN MARMORATED STINK BUG: This invasive pest has been confirmed for the first time in another Dane County apple orchard, in the western portion of the county. Adults have also been trapped this season in Door and Rock counties, and at other Dane County sites. Late-summer populations are increasing in areas of the state where BMSB is established, and it is particularly important for fruit and vegetable growers, gardeners, and property owners to remain alert for stink bug activity from now through October. Populations in the Madison area are large enough that swarming should be expected on warm fall days as the stink bugs aggregate before seeking overwintering sites.

FORAGES & GRAINS

POTATO LEAFHOPPER: Late August surveys in alfalfa found only low to moderate counts of 0.1-0.7 leafhoppers per sweep, with an average of 0.3 per sweep. Levels of this insect have been below-threshold since peaking in mid-July, when some late second-crop fields had extremely high averages of 5-21 per sweep.

PLANT BUG: Nymphs were less abundant in fields sampled this week, indicating population growth is slowing.

DEGREE DAYS JAN 1 - AUGUST 23

LOCATION	50°F	2016	NORM	40°F
Dubuque, IA	2456	2389	2269	3902
Lone Rock	2195	2344	—	3554
Beloit	2243	2459	2306	3654
Sullivan	2104	2117	2182	3466
Madison	2190	2330	2197	3557
Juneau	2085	2071	—	3426
Racine	2082	2268	—	3430
Waukesha	2060	2035	—	3410
Milwaukee	2078	2287	2107	3419
Hartford	2036	2041	—	3374
Appleton	2033	2032	—	3335
Green Bay	1975	1998	1973	3264
Big Flats	2064	2188	—	3361
Hancock	1920	2188	2130	3188
Port Edwards	1901	2163	2090	3162
La Crosse	2263	2533	2400	3640
Eau Claire	2096	2240	2164	3415
Cumberland	1621	1845	2028	2855
Bayfield	1624	1650	—	2805
Wausau	1694	1989	1986	2927
Medford	1614	1772	1819	2835
Crivitz	1784	1872	—	3008
Crandon	1481	1772	1545	2665

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

Counts averaged 0.4 plant bugs per sweep and ranged from 0.1-0.8 per sweep. The tarnished plant bug is the most common plant bug species in alfalfa at this time.

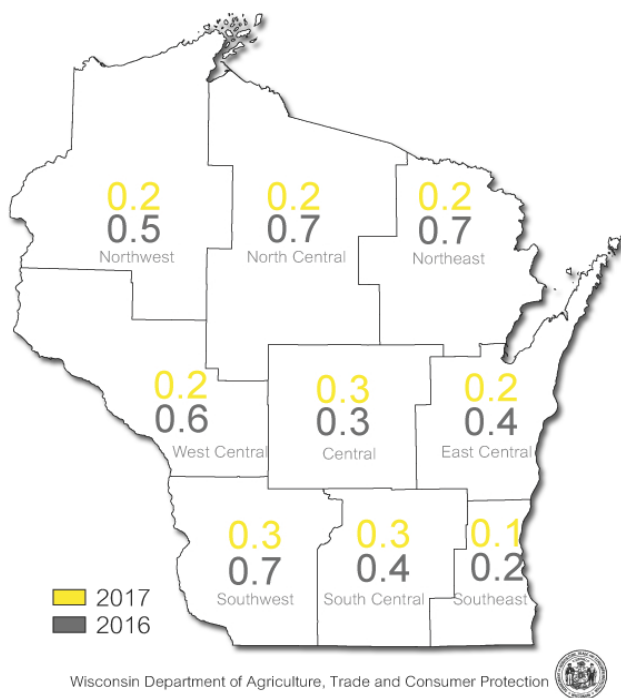
PEA APHID: In contrast to other alfalfa pests, aphid populations have increased slightly in the previous two weeks. The average count from August 17-23 was approximately two per sweep, although exceptional fields had averages of 3-4 per sweep. The higher counts were observed in central Wisconsin alfalfa.

CORN

CORN ROOTWORM: Beetle populations are the lowest since surveys for this pest began in Wisconsin in 1972. The annual survey completed last week found a pronounced decrease in adult rootworm counts 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 this month 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. Results of the survey indicate that adult rootworm pressure has been much lower than expected this season. The substantial decrease in beetle abundance may translate into fewer eggs being deposited into cornfield soils, and an overall lower risk of larval root damage next summer.

District Average Number of Corn Rootworm Beetles per Plant



EUROPEAN CORN BORER: Surveys show that larvae range in development from second- to fifth-instar in the central and northwest districts, as far north as Polk County. Larval infestations affecting 2-34% of corn plants were found in 8% of fields checked in the previous two weeks. Nearly all of the older, fourth and fifth-instar larvae present by late August will enter diapause and will not pupate until next spring.

WESTERN BEAN CUTWORM: Cornfields surveyed in the central counties were 1-20% infested with 1-2 larvae per ear. The cutworms were mostly in the late instars and should enter the pre-pupal overwintering stage by September. This week's observations suggest that the increased pheromone trap counts documented in July

and August were an accurate predictor of higher larval pressure in the field since infestations are relatively common in central Wisconsin, but also as far northwest as Barron County. Western bean cutworm larvae have been found at about 9% of the corn sites sampled this month.



Western bean cutworm larva

Krista Hamilton DATCP

JAPANESE BEETLE: Adults are still numerous on corn silks in later-planted fields. Beetle emergence has peaked and much of the threat to the state's corn and soybean crops has passed, but scouting should continue in the eastern and northern areas, or in individual fields where pollination is incomplete and silk feeding remains a concern. Japanese beetle activity is expected to diminish by early September.



Japanese beetles feeding on corn silks

Krista Hamilton DATCP

CORN EARWORM: The primary migration accelerated this week. Moderate to large flights of 40-111 moths per trap were reported from the Arlington, Cottage Grove and Ripon monitoring locations. A cumulative total of

288 moths were captured in 15 pheromone traps. Sweet corn growers should continue to follow corn earworm migration reports and maintain treatments as long as moth activity persists and green silks are available for oviposition. Counts for the week ending August 23 were: Arlington 111, Beaver Dam 16, Coon Valley 14, Cottage Grove 49, Hancock 2, Janesville 21, Madison airport 3, Manitowoc 0, Marshfield 17, Pardeeville 1, Ripon 40, Sun Prairie 3, Watertown 10, and Wausau 1.

SOYBEANS

JAPANESE BEETLE: Defoliation has been observed in about 87% of the soybean fields examined during the aphid survey in August, indicating that Japanese beetle pressure is more prevalent than in recent years. Last season, 74% of surveyed fields had some degree of Japanese beetle feeding. Defoliation estimates were above the 20% threshold for reproductive soybeans in about 2% of the fields sampled this month, but the vast majority of sites had only low or moderate levels of leaf injury. As this year's high populations prove, Japanese beetle has become an increasingly significant threat to the state's agronomic crops. Although some beetles may persist into September, much of their activity should decline in another two weeks.



Japanese beetles feeding on soybean leaf Krista Hamilton DATCP

SOYBEAN APHID: Densities recorded during the annual survey this month have been extremely low. The state average count in 154 fields sampled as of August 23 is only seven aphids per plant, with a range of 0-163 per plant. For comparison, the 2016 survey found a similarly low average of eight aphids per plant, averages from 2013-2015 ranged from 35-55 aphids per plant, and

surveys from 2010-2012 documented densities of 7-16 aphids per plant. The lowest state average in the 16-year history of Wisconsin soybean aphid surveys was also seven aphids per plant, in 2012. Results of the survey confirm that aphid populations are low or moderate in most fields and widespread treatment for aphid control has generally not been required.

GREEN CLOVERWORM: This insect is still common in soybeans across the southern and western areas of the state. However, populations and defoliation are not particularly high. Larvae vary from the intermediate instars to nearly full grown.

FRUITS

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



Obliquebanded leafroller larva

whatcom.wsu.edu

SPOTTED TENTIFORM LEAFMINER: The third and last flight of the season continued this week, with high counts of 500-1,098 moths reported from four monitoring locations. Most orchards registered weekly captures of fewer than 100 moths. Moth activity is expected to subside by mid-September.

APPLE MAGGOT: Peak emergence of flies occurred about two weeks ago depending upon the area of the state, and activity has generally declined. Apple maggot pressure has been variable but generally low this sea-

son, though the external depressions and brown, internal larval tunnels indicative of AM infestation are appearing on apples at some orchard sites where AM flies have been more abundant this season.

CODLING MOTH: Moderate to extremely high counts were recorded in several orchard locations in the past week, confirming that significant codling moth flights are still occurring. Large captures of 24-77 moths per trap were reported from Racine and Grant counties. Pheromone trap checks may be discontinued once 1,700 degree days (modified base 50°F) have accumulated from the first biofix, at which time approximately 90% of second-flight adults will have emerged.



Codling moth larva and damage

www.agric.wa.gov.au

VEGETABLES

LATE BLIGHT: Cases of late blight have been confirmed by the UW on commercial potatoes in Portage and Wau-sara counties, and on tomato in Dane, Jefferson, Pierce, and Waukesha counties. Protective fungicide treatments should be maintained to prevent this disease from developing in tomato and potato crops as harvest continues. Home gardeners, direct marketers and commercial producers who suspect late blight are encouraged to send symptomatic plant material to the UW Plant Disease Diagnostic Clinic. Late blight testing is free of charge.

SQUASH BUG: Egg deposition is still underway on squash in home gardens. Adults and nymphs are likely to continue feeding on ripening vine crops throughout fall. Chemical control of squash bugs becomes less useful late in the growing season as fruits mature, whereas cultural controls such as removing plant debris around

the garden gain importance and are critical for eliminating winter hibernation sites. Crop rotation is also suggested to reduce habitat for the overwintering adult population, which can survive the winter months under plant debris and cause damage to transplants and seedlings next spring.



Squash bug adult

escalantecommunitygarden.blogspot.com

ONION MAGGOT: Third-generation maggots are feeding on cull onions and bulbs left behind in fields. Onion growers are advised to remove all cull piles and thoroughly clean fields this fall to lower potential overwintering populations. Rotation to a non-host crop should also be considered in spring of 2018 for onion fields or plantings that had onion maggot problems this summer.

CUCURBIT DOWNY MILDEW: The UW reports that downy mildew has not been identified on cucurbit crops in Wisconsin as of August 23. By contrast, powdery mildew is severe in many parts of the state. Fungicide information is available in the Vegetable Crop Update newsletter: <http://www.plantpath.wisc.edu/wivegdis/pdf/2017/July%2022,%202017.pdf>

NURSERY & FOREST

MAGNOLIA SCALE: This largest scale insect found in the United States was observed on magnolias in southeast Wisconsin in the past week. Magnolia scale can range up to ½ inch in size and are similar in appearance to small plant galls. The female scales are at times covered with white wax. This pest damages magnolias by removing sap and producing sticky honeydew that promotes growth of sooty mold. Magnolia varieties commonly infested include cucumbertree, 'Royal star', and saucer. Gardeners and

nursery managers are advised to begin inspecting their magnolia trees and shrubs now for scales, and consider treating heavily infested plants with a crawler spray in late September. Minor infestations can be removed any time of the year by pruning out branches with scales.



Magnolia scale

Michael Falk DATCP

BACTERIAL LEAF SPOT: Nursery inspectors found bacterial leaf spot caused by *Pseudomonas* spp. on a variety of ornamental plants, including Magnolia X loebneri 'Leonard Messel', spirea, and viburnum. *Pseudomonas* spp. can be a year-round problem in nurseries and greenhouses when leaves remain wet due to overhead watering, splashing water, or plant crowding. Disease development is highly dependent on cool and wet conditions, therefore leaf spot occurrence can be limited by avoiding sprinkler irrigation, spacing plants properly, removing infected leaves early, and rotating susceptible plants away from areas where infected plants were grown. *Pseudomonas* bacteria are not controlled with fungicides. Sanitation is the most effective management practice.

Magnolia infected with *Pseudomonas*

Konnie Jerabek DATCP

PINE-OAK GALL RUST: A heavy rust infection was noted on swamp white oaks in Washington County this week. The conspicuous orange pustules that appear on leaf undersides in late summer and fall are diagnostic. Although the effects of this fungus are insignificant on oak, it can be devastating for the alternate host, pine, by causing the formation of oblong galls on the branches and trunks. The galls reduce branch growth, lead to branch death, and may kill young pine trees. Older, established pines may be disfigured, but the overall health is usually not affected. Pruning to remove galls or infected pine branches in late winter or early spring will reduce the amount of spores produced that will infect nearby pine and oak trees. No control measures are feasible or recommended on oak trees. In addition, pines should be inspected prior to purchase to ensure that they are free from galls.



Oak rust on swamp white oak

Marcia Wensing DATCP

SPRUCE BUDWORM: A DNR report indicates that damage caused by this conifer pest has been less apparent than in past years. Although the larvae are present throughout northern Wisconsin this summer, their damage has not been as visible. DNR Forest Health Specialists suspect that strong storms and heavy rainfall earlier this season may have washed caterpillars from the trees and caused more damaged needles to drop than normally would, masking the defoliation. DATCP inspectors also recently found several severely infested Black Hills spruce in a St. Croix County nursery. For smaller nursery or backyard infestations, Bt sprays targeting this insect can be effective if applied weekly to spruce foliage in May when the larvae are small. June and July applications should help to control infestations on new growth.

APPLE INSECT & BLACK LIGHT TRAP COUNTS AUGUST 17 - 23

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	OFM ⁵	LPTB ⁶	DWB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	27	0	1	11	2	0	0	1	**0
Bayfield	Oriente	50	0	0	1	0	0	0	**0	**0
Brown	Oneida	—	—	—	—	—	—	—	—	—
Columbia	Rio	—	—	—	—	—	—	—	—	—
Crawford	Gays Mills	216	—	1	4	2	—	—	*1	—
Dane	DeForest	71	107	12	2	0	—	—	0	**0
Dane	Mt. Horeb	60	66	6	2	0	0	0	0	**0
Dane	Stoughton	64	26	17	1	3	2	0	0	**0
Fond du Lac	Campbellsport	100	37	0	8	0	2	0	*0	**0
Fond du Lac	Malone	—	—	—	—	—	—	—	—	—
Fond du Lac	Rosendale	24	31	6	5	1	3	5	*0	**0
Grant	Sinsinawa	—	37	77	—	—	—	—	—	**3
Green	Brodhead	23	51	8	1	—	12	—	*0	**0
Iowa	Mineral Point	1098	42	12	3	7	0	0	**3	—
Jackson	Hixton	85	11	4	2	0	0	0	*0	**0
Kenosha	Burlington	540	55	6	9	6	3	1	0	**0
Marathon	Edgar	—	—	—	—	—	—	—	—	—
Marinette	Niagara	107	0	0	0	12	3	0	4	**1
Marquette	Montello	243	43	3	0	0	1	0	0	**0
Ozaukee	Mequon	35	16	2	0	0	0	0	*1	**0
Pierce	Beldenville	—	—	—	—	—	—	—	—	—
Pierce	Spring Valley	747	48	0	2	0	2	0	*3	**0
Racine	Raymond	282	35	26	2	5	5	1	*0	**0
Racine	Rochester	710	10	24	3	6	0	3	*2	**0
Richland	Hill Point	94	70	—	2	0	5	0	**0	**0
Sheboygan	Plymouth	—	—	—	—	—	—	—	—	—
Walworth	East Troy	—	—	—	—	—	—	—	—	—
Walworth	Elkhorn	—	—	—	—	—	—	—	—	—
Waukesha	New Berlin	30	22	17	18	10	15	10	*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	CE ³	DCW ⁴	ECB ⁵	FORL ⁶	SCW ⁷	TA ⁸	VCW ⁹	WBC ¹⁰
Columbia	Arlington	0	0	0	0	0	0	0	0	0	0
Columbia	Pardeeville	0	0	0	2	1	2	0	0	0	0
Dodge	Beaver Dam	0	0	0	5	6	0	0	0	0	0
Fond du Lac	Ripon	0	0	0	14	11	0	0	0	0	0
Grant	Prairie du Chien	0	0	0	0	0	0	0	0	0	0
Manitowoc	Manitowoc	0	0	0	0	0	0	0	0	0	0
Marathon	Wausau	1	0	0	58	6	1	25	0	0	0
Monroe	Sparta	0	0	0	9	6	1	0	1	0	0
Rock	Janesville	1	0	3	1	0	2	0	3	0	0
Walworth	East Troy	2	0	0	37	0	2	0	0	0	0
Wood	Marshfield	0	0	1	6	1	2	4	0	0	2

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