

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

Seasonal temperatures covered much of Wisconsin, accompanied by widespread showers. A band of heavy precipitation spread across the southern and central sections of the state August 18 and 19 and intensified again on August 23 and 24, producing soaking rain and generating significant local flooding in portions of the southwest. Rainfall on August 24 totaled 5.6 inches in Steuben, 5.1 inches in Gays Mills, and 4.2 in Richland Center. Although the deluge added more water to already-saturated fields and slowed harvesting of alfalfa and oats, growing conditions were still mostly favorable for summer crops. According to the USDA NASS report for the period ending August 22, condition ratings for corn and soybeans remained unchanged from the week before, with 87% and 88% of both crops ranked good to excellent. As is seldom the case by late August, less rain and more dry weather is needed for farmers to complete the haying season and to begin the corn silage harvest.

LOOKING AHEAD

CORN EARWORM: Substantial flights continued in the southern and central areas of the state. The late-season migration accelerated this week and has to date yielded a cumulative total of 3,507 moths at 17 sites. Counts at the Columbia and Fond du Lac County monitoring sites were particularly high and ranged from 890-1,095 moths

per trap. The latest activity signals that the threat to fresh market sweet corn plantings has intensified and egg laying will persist into September.

WESTERN BEAN CUTWORM: Corn surveyed in the central counties was 2-60% 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 were an accurate predictor of higher larval pressure in the field since infestations are somewhat common, especially in Chippewa, Dunn, Eau Claire, Green Lake, Juneau and Marquette counties. Western bean cutworm larvae have been found in about 15% of the 229 cornfields sampled this month.

CORN ROOTWORM: The annual beetle survey is complete. Contrary to earlier forecasts, review of the field data indicates that populations are lower than last year across southern, central and east-central Wisconsin. Beetle counts in the west-central and northern counties are markedly higher. Results of the survey are summarized in the **CORN** section.

LATE BLIGHT: Fresh market tomato producers and home gardeners are advised to continue monitoring plants for signs of infection now that late blight spores are in the state. Development of this disease has been confirmed

by the UW on tomato in Dane County and on potato and tomato in Polk County. Plants showing symptoms of late blight cannot be saved and should be disposed of in plastic bags to limit spread to other plants. Symptomatic plants may be submitted for free testing to the UW Plant Disease Diagnostic Clinic: <https://pddc.wisc.edu/sample-collection-and-submission/>.

LILY LEAF BEETLE: This newly-established invasive beetle was reported earlier this month by a resident of Plover in Portage County, marking the southernmost detection of lily leaf beetle in the state. The northernmost record of the beetle is from Merrill in Lincoln County. Lily leaf beetle was first discovered in Wisconsin in 2014 and reproducing populations currently exist in portions of in Lincoln, Marathon and Portage counties.



Lily leaf beetle

Nancy Armstrong-Thomson flickr.com

FORAGES & GRAINS

POTATO LEAFHOPPER: Late August surveys in alfalfa found only low to moderate counts of 0.2-1.6 leafhoppers per sweep, with an average of 0.6 per sweep. Levels of this insect have been below threshold all summer long, despite a timely spring arrival and very favorable temperatures. Although a few individual fields sampled earlier this month contained localized “hotspots” of high leafhopper counts, none had a fieldwide average exceeding the two leafhopper per plant threshold for alfalfa growth 12 inches or taller.

PLANT BUG: Nymphs were less abundant in fields sampled this week, indicating population growth is decelerating. Counts averaged 0.5 plant bugs per sweep and ranged from 0.1-1.4 per sweep. The tarnished plant

DEGREE DAYS JAN 1 - AUGUST 24

LOCATION	50°F	2015	NORM	48°F	40°F
Dubuque, IA	2415	2287	2289	2546	3506
Lone Rock	2369	2209	—	2503	3456
Beloit	2485	2307	2326	2680	3648
Sullivan	2141	1885	2201	2324	3189
Madison	2356	2182	2216	2551	3457
Juneau	2095	2016	—	2298	3164
Racine	2296	1840	—	2489	3365
Waukesha	2058	1885	—	2180	3046
Milwaukee	2317	1842	2128	2509	3371
Hartford	2064	1885	—	2188	3054
Appleton	2054	1942	—	2254	3098
Green Bay	2021	1837	1990	2221	3052
Big Flats	2211	2065	—	2380	3232
Hancock	2211	2065	2148	2380	3232
Port Edwards	2187	1986	2107	2357	3224
La Crosse	2560	2300	2420	2773	3723
Eau Claire	2262	2075	2183	2454	3363
Cumberland	1864	1835	2046	1972	2823
Bayfield	1671	1520	—	1837	2561
Wausau	2011	1771	2003	2189	3008
Medford	1791	1692	1835	1857	2675
Crivitz	1896	1721	—	1913	2733
Crandon	1787	1575	1558	1942	2705

Method: ModifiedB50; Sine48; ModifiedB40 as of Jan 1, 2016. NORMALS based on 30-year average daily temps, 1981-2010.

bug is the most common plant bug species found in alfalfa at this time.

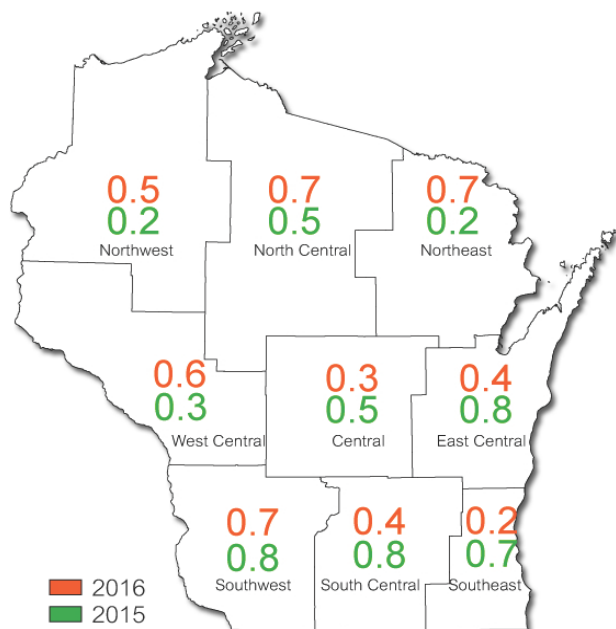
PEA APHID: In contrast to other alfalfa pests, aphid populations have increased slightly in the previous 2-3 weeks. The average count from August 18-24 was approximately 2.5 per sweep, although exceptional fields had averages of 6-7 per sweep. The higher counts were observed in west-central Wisconsin alfalfa.

CORN

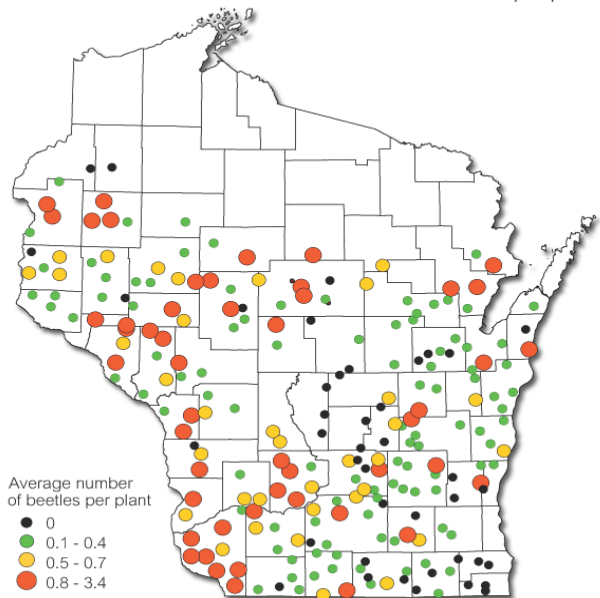
CORN ROOTWORM: Below are two maps summarizing the findings of the 2016 corn rootworm beetle survey, completed earlier this week. Surveys found a marked increase in beetle counts in the west-central, northwest and north-central areas as compared to 2015, while populations in the southern, central and east-central districts were well below last season’s averages. The state average of 0.5 beetle per plant is a decrease from

the 2015 average of 0.6 per plant. An average of 0.75 or more adult corn rootworms per plant in continuous corn indicates control in the form of crop rotation, using a Bt-rootworm hybrid, or applying a soil insecticide at planting should be considered to prevent root damage in 2017. Beetle populations exceeding this threshold were recorded in 51 (22%) of the 229 fields surveyed from August 1-24, represented by orange circles on the second map.

Average Number of Corn Rootworm Beetles per Plant



Corn Rootworm Beetle Survey Results 2016
State Ave. = 0.5 beetles per plant



EUROPEAN CORN BORER: Surveys show that larvae range in development from second- to fifth-instar in the central, west-central and northwest districts, as far north as Dunn County. Larval infestations affecting 2-52% of corn plants were found in 12% of fields checked. Nearly all of the older, fourth and fifth-instar larvae present by late August will enter diapause and will not pupate until next spring.

CORN EARWORM: The primary migration accelerated this week. Locally heavy flights of 259-1,095 moths per trap were reported from the Arlington, Mayville and Ripon monitoring locations. A cumulative total of 3,507 moths have been captured in 17 pheromone traps since the late-season flight began in full from August 11-17. Sweet corn growers should continue to follow CEW migration reports and maintain treatments as long as moth activity persists and green silks are available for oviposition. Counts for the week ending August 24 were: Arlington 890, Beaver Dam 32, Hancock 0, Janesville 22, Marshfield 0, Mayville 259, Pardeeville 89, Prairie du Chien 0 and Ripon 1,095.



Corn earworm larva
Krista Hamilton DATCP

SOYBEANS

SOYBEAN APHID: Densities recorded during the annual survey conducted earlier this month were extremely low. The state average count in 170 fields sampled from July 25-August 10 was only eight aphids per plant, with a range of 0-151 per plant. For comparison, the 2015 survey found an average of 35 aphids per plant, averages in 2013 and 2014 were around 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 Wis-

consin soybean aphid surveys was seven aphids per plant in 2012. Results of the survey confirm that aphid populations remained low or moderate in most fields this season and widespread treatment for aphid control was not required.



Soybean aphids

Krista Hamilton DATCP

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.

JAPANESE BEETLE: Defoliation was observed in about 74% of the soybean fields examined during the aphid survey in late July and August, indicating that Japanese beetle (JB) pressure has been more widespread than in recent years. Defoliation estimates were below the 20-30% threshold in the soybean fields surveyed by DATCP, but JB has become an increasingly significant defoliator and agricultural crop pest. Therefore, in 2017 and beyond, it will be important for crops advisors and consultants to understand how to accurately assess JB defoliation rates. The UWEX-recommended procedure is to select a trifoliolate leaf from the top, middle and lower third of 10 randomly selected plants. From each trifoliolate, discard the most and least damaged leaflets to obtain a sample size of 30 leaflets. Compare the selected leaflets to the illustrations/images in the UW-Madison soybean defoliation guide at <http://ipcm.wisc.edu/blog/2012/07/japanese-beetle-scouting-and-thresholds-for-corn-and-soybean/defoliation/> and record the average level of defoliation. Treatment should be considered at 20% defoliation for post-bloom reproductive soybeans and 30% defoliation for pre-bloom vegetative fields.

FRUITS

APPLE MAGGOT: Peak emergence of flies occurred about two weeks ago depending upon the area of the state, and activity has generally declined. Counts have been comparatively low this season, though the external depressions and brown, internal larval tunnels indicative of AM infestation are appearing on apples in orchards impacted by hail damage where AM flies have been more abundant this season.

SPOTTED TENTIFORM LEAFMINER: The third and last flight of the season has begun to decline. Trap counts ranged from 0-846 moths from August 18-24, with the anomalous high count registered at Spring Valley in Pierce County. Most orchards reported weekly captures of fewer than 175 moths, which is considered low for this pest. Moth activity should subside by mid-September.

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 late August and September can be a predictor of damage potential by first brood larvae next spring.



Obliquebanded leafroller larva

whatcom.wsu.edu

CODLING MOTH: Moderate to high counts were registered in several orchard locations in the past week, confirming that codling moth flights are still occurring. Economic counts of 5-20 moths per trap were reported from Edgar, Hixton, Mequon, Mineral Point, New Berlin, Raymond, Rochester and Stoughton. 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.

VEGETABLES

LATE BLIGHT: Cases of late blight have been confirmed by the UW in Dane and Polk counties since August 15. 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 for free testing: <https://pddc.wisc.edu/sample-collection-and-submission/>.



Late blight on tomato

ag.umass.edu

SQUASH BUG: Adults and nymphs are likely to continue feeding on ripening vine crops throughout fall. Although chemical control of squash bugs is less important later in the growing season, cultural controls such as removing plant debris around the garden are useful for eliminating potential winter hibernation sites. Crop rotation is also suggested to reduce the overwintering adult population which can cause damage to transplants and seedlings next spring.

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 2017 if onion fields or plantings experienced onion maggot problems this summer.

NURSERY & FOREST

LINDEN LEAF BLOTCH: Nursery inspectors report that this summer's very high humidity and frequent rain have intensified leaf spot disease problems. Linden leaf blotch, like other leaf spot diseases, requires either water on the leaves or high humidity for 12-24 hours to start an infection. Leaf spots often mature in 1-2 weeks, subsequently producing spores or bacteria that can spread throughout the canopy, starting a second set of leaf spots, or causing new infections on other plants. This cycle of infection and spore production repeats with each rainfall and results in severe disease when weather conditions are favorable.

Although the leaf damage can be pronounced, most leaf spot diseases do not seriously harm trees. Raking and destroying fallen leaves before the first snowfall, taking measures to avoid overcrowding plants, and pruning trees to increase light penetration and airflow are all strategies that can collectively reduce leaf spot diseases on trees in following years.



Redmond linden with leaf blotch fungus

Konnie Jerabek DATCP

HONEY LOCUST BORER: Honey locust trees at a nursery grower in Dodge County were showing trunk wounds and exuding sap indicative of honey locust borer (HLB) infestation. Similar to other *Agilus* species such as EAB, larvae of the HLB feed on the inner bark, forming serpentine tunnels packed with frass (feces). The adult beetles preferentially select trees declining due to environmental stress, cankers, or wounds, thus HLB is considered a secondary pest. Management should emphasize alleviating stress factors. Nursery stock infested

with any trunk boring insect must be removed from sale and destroyed.



Honeylocust borer adult

Marcia Wensing DATCP

CEDAR-HAWTHORN RUST: Humid, wet growing season weather has promoted development of this rust disease, which requires a rosaceous host and a juniper host. The characteristic pinkish aecia (tubes) are evident on the leaves of hawthorns in Dodge, Pierce and St. Croix counties. Selecting resistant hawthorn cultivars and thorough sanitation by removing infected twigs, fruit and leaves are the recommended controls. Fungicide treatments applied to new growth in spring may be needed in extreme cases.



Cedar-hawthorn rust aecia on leaf underside

Marcia Wensing DATCP

GUIGNARDIA LEAF BLOTCH: Several horse chestnut trees in a Dodge County nursery were severely infected with this fungal leaf blotch disease. Symptoms include irregular, reddish-brown leaf lesions with yellow margins

that distort affected foliage as they increase in size and severity. Disposing of fallen leaves in autumn and pruning the canopy are recommended to reduce inoculum levels.



Guignardia leaf blotch on horse chestnut

Marcia Wensing DATCP

MOUSE-EAR OF BIRCH: River birch trees grown at a nursery in Dodge County were showing signs of this growth disorder of potted nursery trees. The stunted or "mouse-eared" leaves are thought to be caused by nickel deficiency. A foliar application of nickel sulfate in mid-October or soon after budbreak can correct this condition. Lowering soil media pH to 5.0-6.0 is also recommended.



River birch with "mouse-ear" leaf disorder

Marcia Wensing DATCP

APPLE INSECT & BLACK LIGHT TRAP COUNTS AUGUST 18-24

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	APB ⁵	LPTB ⁶	DWB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	33	0	0	0	0	0	0	5	4
Bayfield	Orienta	51	1	0	0	0	0	12	0	**0
Brown	Oneida	50	34	2	7	0	0	14	0	0
Columbia	Rio	93	143	2	2	0	2	0	0	0
Crawford	Gays Mills	—	—	—	—	—	—	—	*10	—
Dane	DeForest	—	—	—	—	—	—	—	—	—
Dane	Edgerton	—	—	—	—	—	—	—	—	—
Dane	McFarland	35	12	1	—	—	—	—	5	*3
Dane	Mt. Horeb	12	38	0	2	1	0	0	0	0
Dane	Stoughton	7	39	9	2	0	1	1	0	3
Fond du Lac	Campbellsport	175	39	0	44	0	0	7	0	0
Fond du Lac	Malone	—	—	—	—	—	—	—	—	—
Fond du Lac	Rosendale	91	79	3	4	0	0	0	2	4
Grant	Sinsinawa	—	6	—	—	—	—	—	—	—
Green	Brodhead	16	95	0	6	0	0	64	0	0
Iowa	Mineral Point	—	—	20	—	—	—	—	—	—
Jackson	Hixton	66	0	5	0	0	0	8	1	3
Kenosha	Burlington	80	260	2	0	0	0	25	0	—
Marathon	Edgar	23	10	12	36	0	0	0	1	0
Marinette	Niagara	0	0	0	0	0	0	0	0	0
Marquette	Montello	47	34	0	1	—	—	—	*0	0
Ozaukee	Mequon	—	—	—	—	—	—	—	—	—
Pierce	Beldenville	—	—	—	—	—	—	—	—	—
Pierce	Spring Valley	846	95	0	3	0	1	9	*1	0
Racine	Raymond	159	12	5	1	10	7	10	0	0
Racine	Rochester	540	7	6	16	2	1	9	*2	0
Richland	Hill Point	45	90	3	6	0	1	0	1	0
Sheboygan	Plymouth	—	—	—	—	—	—	—	—	—
Walworth	East Troy	—	—	—	—	—	—	—	—	—
Walworth	Elkhorn	—	—	—	—	—	—	—	—	—
Waukesha	New Berlin	50	46	5	1	2	2	2	0	1

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵American plum borer; 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	—	—	—	—	—	—	—	—	—	—
Columbia	Pardeeville	1	0	1	80	11	5	0	3	0	0
Dodge	Beaver Dam	0	0	1	2	2	1	0	0	0	0
Fond du Lac	Ripon	0	1	38	13	13	2	1	0	0	0
Grant	Prairie du Chien	—	—	—	—	—	—	—	—	—	—
Manitowoc	Manitowoc	—	—	—	—	—	—	—	—	—	—
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	0	1	1	6	0	2	0	7	0	0
Walworth	East Troy	0	0	0	22	0	18	0	1	0	0
Wood	Marshfield	0	2	0	6	4	2	6	1	0	0

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