

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

Rainy, wetter-than-normal weather persisted for much of the week. Across the state, mid-July heat was replaced by milder temperatures, with daytime highs remaining in the 80s, and lows ranging from the upper 40s in the north to near 70 in the west. Additional thunderstorms impacted portions of Wisconsin, producing 5-7 more inches of rain over southwestern areas already flooded from earlier July storms. Daily totals were heaviest in Grant County on July 21, where 7.2 inches fell at Beetown, 4.36 inches were recorded near Sinsinawa, and Lancaster received 3.62 inches. Farther north, La Crosse reported more than five inches of rain for the week. Numerous severe storms, frequent showers, and flooding since June have damaged or destroyed thousands of acres of farmland. Crop development remains widely variable, though about one-third of corn is silking and one-quarter of soybeans are setting pods. The latest USDA NASS report ranks 70-79% of alfalfa, corn, oats, potatoes, soybeans and wheat in good to excellent condition, which is far below last year's rating of 84-96%, yet better than expected given this summer's excessive rainfall and widespread flooding.

LOOKING AHEAD

SPOTTED WING DROSOPHILA: Emergence has surged since early July and is expected to intensify in August.

Inspecting fruits for larvae, installing exclusion netting, and maintaining protective insecticide coverage are all important measures for protecting berry crops from spotted wing drosophila (SWD) at this time. Chemical spray programs, alternating at least three different materials with different modes of action, should be initiated as fruit begins to color and continue every five days through harvest, with consideration of pre-harvest and reentry intervals. Cooling harvested berries to 34°-36°F until sale is also recommended to slow development of larvae and eggs. Eliminating all overripe or rotting fruit on plants or on the ground is also critical for reducing refuge for SWD populations.

SOYBEAN APHID: Monitoring efforts should be increased in all areas of the state as more fields enter the reproductive stages. DATCP surveys indicate average densities are low at fewer than 10 aphids per plant, though individual fields could develop economic populations early next month. Foliar treatment 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.

JAPANESE BEETLE: Reports suggest that these beetles are more abundant than in the previous several years, 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 beetles are present.

DEGREE DAYS JANUARY 1 - JULY 26



Japanese beetles

Tim Allen DATCP

LOCATION	50°F	2016	NORM	40°F
Dubuque, IA	1894	1772	1688	3060
Lone Rock	1689	1727	—	2770
Beloit	1726	1816	1711	2857
Sullivan	1596	1524	1612	2679
Madison	1669	1702	1633	2757
Juneau	1577	1505	—	2638
Racine	1544	1589	—	2612
Waukesha	1545	1477	—	2615
Milwaukee	1535	1581	1507	2596
Hartford	1529	1483	—	2588
Appleton	1509	1446	—	2531
Green Bay	1465	1422	1441	2475
Big Flats	1561	1590	—	2580
Hancock	1444	1590	1584	2434
Port Edwards	1432	1565	1549	2416
La Crosse	1714	1856	1786	2811
Eau Claire	1579	1638	1602	2618
Cumberland	1212	1371	1489	2170
Bayfield	1193	1146	—	2095
Wausau	1271	1435	1457	2228
Medford	1210	1315	1329	2159
Crivitz	1332	1295	—	2282
Crandon	1107	1275	1139	2023

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

WESTERN BEAN CUTWORM: Moth counts have peaked at most southern and central monitoring sites. The cumulative state total as of July 26 is 924 moths in 70 pheromone traps, which is lower than last year’s count of 1,185 moths in 75 traps. Captures are expected to peak next week near Wausau across the northern counties. Preliminary results of the 2017 annual trapping survey are summarized in the map on page 95.

CORN EARWORM: Migrants arrived in low numbers for the third week. Although the monthly total count of only 56 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.

EUROPEAN CORN BORER: The treatment window for second-generation larvae has opened across southern and central Wisconsin with the accumulation of 1,550 degree days (modified base 50°F). Susceptible corn should be inspected in the week ahead for egg masses and small larvae. Chemical control directed against early-instar corn borers will remain an option until 2,100 degree days have been surpassed, or for approximately 2-3 more weeks under normal August temperatures.

FORAGES & GRAINS

POTATO LEAFHOPPER: Surveys from July 20-26 yielded below-threshold counts of less than 1.2 leafhoppers per sweep in all sampled fields. The average was 0.5 per

sweep. Frequent heavy rains throughout July have apparently reduced populations from the high levels observed several weeks ago. Monitoring third- and fourth-crop alfalfa throughout August is recommended.

PLANT BUG: Counts are similar to last week at 0.1-1.5 adults and nymphs per sweep. Most fields contain 0.6 plant bugs or fewer per sweep, a fraction of the economic threshold of five per sweep. Nymphs remain more abundant than adults in alfalfa.

PEA APHID: Levels are still very low at less than 0.5 aphid per sweep in alfalfa fields surveyed in southern and central Wisconsin.

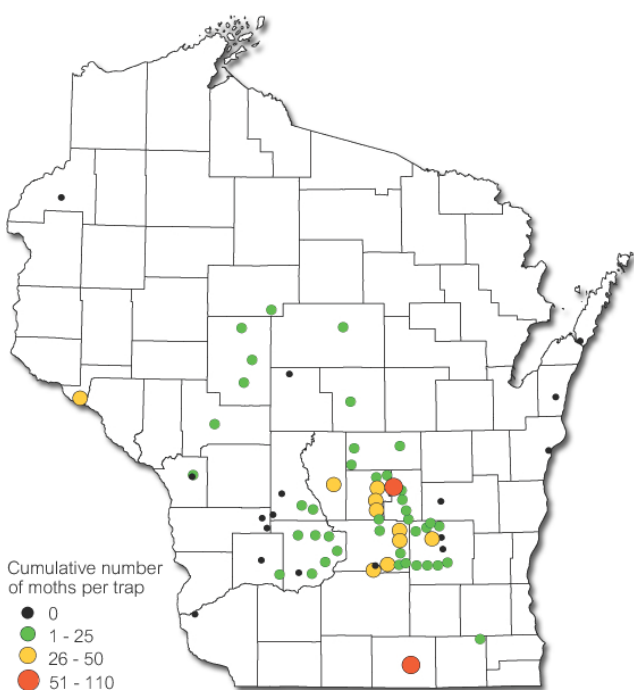
CORN

JAPANESE BEETLE: 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.

WESTERN BEAN CUTWORM: The western bean cutworm degree day model indicates that 75% or more of the moth population has emerged near Beloit, La Crosse, Spring Green and other advanced locations. Emergence is about 50% complete in the central counties where the flight appears to have peaked in the past week. High counts for the period of July 20-26 were 71 moths in the pheromone trap near Cambria in Columbia County and 97 in the Ripon (Fond du Lac) black light trap. The cumulative state count to date is 924 moths in 70 pheromone traps, which is comparatively low for late July.

Western Bean Cutworm Trap Counts 2017



Cumulative number of moths per trap

- 0
- 1 - 25
- 26 - 50
- 51 - 110

Wisconsin Department of Agriculture, Trade and Consumer Protection



CORN EARWORM: Moth counts remain low, with pheromone traps in Beaver Dam, Cottage Grove, Ripon, Sun Prairie, and Watertown registering weekly captures of 1-10 migrants per trap. 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, indicating that the moths are laying enough eggs to justify treatment of susceptible fields in the vulnerable silking stage.

EUROPEAN CORN BORER: Moths of the second flight are appearing in black light traps, signaling that eggs are being deposited on corn and other hosts. The peak of summer moth activity can be expected by August 12 across the southern two-thirds of Wisconsin. 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

www.sequella.co.uk

SOYBEANS

SOYBEAN APHID: Surveys continue to find very low aphid densities across the southern and central areas. All R1-R3 fields sampled in the past week had extremely low averages of less than 10 aphids per plant. Higher counts of 100-200 aphids per plant can be found on individual plants in the margins of some fields, but field-wide populations remain far below the 250 aphid-per-plant economic threshold, emphasizing the need for thorough scouting before control decisions are made.

JAPANESE BEETLE: Light to moderate defoliation is widespread in soybeans, though surveys have found only two fields above threshold during the three-week period from July 6-26. The economic threshold for Japanese beetle and other leaf feeding soybean pests is 20% defoliation between bloom and pod fill.

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

FRUITS

APPLE MAGGOT: Captures of flies on red spheres and yellow sticky traps increased slightly in the past week, with counts ranging from 1-13 per trap. Approximately half of the apple maggot population should emerge between July 26 and August 6 across the southern two-thirds of the state, and from August 11-21 north of Wausau. Oviposition is expected to intensify for another 2-3 weeks.



Apple maggot fly

Thaddeua McCamant Central Lakes College

WHITE APPLE LEAFHOPPER: 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.

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.



Stink bug damage on apple

HGIC University of Maryland Extension

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.

SPOTTED WING DROSOPHILA: Counts exceeded 100 or more flies per trap in eight of 18 traps during the week ending July 26. Three monitoring sites in La Crosse and

Trempealeau counties reported 200 or more flies, with a weekly high capture of 425 flies. These elevated catch rates are consistent with the typical mid-July increase in SWD counts observed in the past 2-3 years, and indicate that berry growers should be prepared to manage SWD on farms with a combination of spray programs, as well as timely and clean harvests.



Spotted wing drosophila larva in blackberry

ucanr.org

Spray programs include maintaining a five-day spray interval, rotating at least three insecticides from different classes, such as Delegate/Entrust (spinosyn, bacterial based), Mustang Maxx (pyrethroid) and malathion (organophosphate). According to the MN Extension IPM Program, these products have shown the most consistent efficacy against SWD, and have pre-harvest intervals of one day that allows flexibility in scheduling harvest dates between sprays.

The MN Extension also notes that two years of data have shown exclusion netting to be the best long-term solution for managing SWD in fall raspberries with minimal insecticide use. However, there are currently few suppliers and the initial capital investment is high.

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.

Insecticide options for this pest are limited. Growers who prefer a reduced-risk approach can apply a neonicotinoid at the first sign of feeding injury and before large aggregations appear.

Neonicotinoids, e.g., Assail (acetamiprid), Actara (thiamethoxam), will offer good repellency and mortality within a couple of days. Additionally, imidacloprid products, e.g., Admire Pro, Alias, Wrangler, applied for apple maggot have anti-feeding properties and should also offer some Japanese beetle repellency. Where large aggregations have already formed and pressure is severe, a combination of a broad-spectrum insecticide, e.g., 1 - 2 lb. of Imidan (phosmet) tank mixed with a neonicotinoid may give much better management of this pest. Carbamates and pyrethroids are also effective but are much more disruptive to biological controls and other natural enemies that may be active in the orchard. Never spray when bees are foraging.

Organic producers have the option of applying PyGanic (pyrethrins) or neem (azadirachtin) oil products, e.g., Azadirect, Neemix, Trilogy. It is important to be aware that a botanical insecticide such as neem may be phytotoxic if tank mixed with other pesticides. If these treatments are required late in the season, be aware of pre-harvest intervals that vary between products.



Japanese beetles

www.planetnatural.com

VEGETABLES

LATE BLIGHT: The state's first case of late blight of the 2017 season has been confirmed on tomato in Waukesha County by UWEX Potato and Vegetable Pathologist Dr. Amanda Gevens. According to the July 26 report, conditions in the state have been favorable for late blight development, and potato and tomato growers should be considering fungicide selections and treatment intervals while continuing to scout for initial disease symptoms. Registered fungicides for late blight in Wisconsin are

listed at the UW-Madison Vegetable Pathology website:
www.plantpath.wisc.edu/wivegdis/pdf/2017/Potato%20Late%20Blight%20Fungicides%202017.pdf



Late blight on tomato

ag.umass.edu

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



Squash bug eggs and nymphs

Krista Hamilton DATCP

SEPTORIA LEAF SPOT: Tomato plants in Columbia, Dane, Green Lake and Sauk counties were 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

NURSERY & FOREST

APHIDS: These insects continue to be prevalent in many nursery stock growing fields, with crabapple, cherry, and other sweet tree and fruit tree species showing the distinctive leaf-curl and puckering symptoms resulting from heavy aphid pressure.

VENTURIA SHOOT BLIGHT: Containerized quaking aspens at recently inspected nurseries were showing the black, blighted shoots indicative of this fungal disorder. The initial symptoms appear in May as irregular brown or black spots on the leaf surfaces, which later expand to new shoots and cause a characteristic shepherd's crook. The disease can often give aspen saplings a "zigzag" structure if the terminal leader is killed several years in a row, forcing lateral branches to become the new leader. Only young shoots and leaves are susceptible to this disease, though repeated attacks of the fungus on new growth can weaken and predispose trees to invasion by other pathogens. Secondary infection cycles can occur throughout the shoot elongation period if wet conditions prevail. The fungus overwinters in infected shoots, so management recommendations include removing fallen

disease leaves, pruning blighted shoots below the margin between healthy and diseased tissue, and avoiding the most susceptible cultivars.



Venturia shoot tip blight on quaking aspen

Tim Boyle DATCP

YELLOW-BELLIED SAPSUCKER: Damage by this member of the woodpecker family was evident on young poplar trees at nurseries in central Wisconsin. Sapsuckers peck holes in trees and larger woody shrubs, feeding on the bark, sap and insects drawn to the sap. Their holes generally are not harmful, but smaller or less vigorous trees and shrubs may be killed if drilling is extensive enough to girdle the trunk or stem. In rare instances, the damage can render trees unfit for sale. On individual trees, sapsucker feeding can be discouraged by wrapping hardware cloth or burlap around the affected area, or applying a sticky repellent material such as tanglefoot to the bark.



Yellow-bellied sapsucker damage on poplar

Tim Boyle DATCP

FALL WEBWORM: The characteristic nests constructed by fall webworm larvae were observed during the past week in southeastern 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. 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 of the webs is the preferred form of control.



Fall webworm larvae

Marcia Wensing DATCP

MOUSE-EAR OF BIRCH: River birch trees in a container-grown tree field were diagnosed with this growth disorder of potted nursery trees, which has been a sporadic problem since the 1970s. The stunted or "mouse-eared" leaves are associated with rootbound containerized stock and thought to be caused by nickel deficiency and/or water stress. 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

askextension.org

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 20 - 26

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	OFM ⁵	LPTB ⁶	DWB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	37	0	1	0	0	4	3	1	**0
Bayfield	Oriente	67	0	0	7	0	0	7	—	—
Brown	Oneida	450	81	6	5	0	6	13	0	**0
Columbia	Rio	400	78	1	2	—	1	0	0	**0
Crawford	Gays Mills	15	82	0	0	—	1	10	0	**0
Dane	DeForest	3	38	1	—	1	—	—	—	—
Dane	Mt. Horeb	22	140	3	1	0	2	3	0	**0
Dane	Stoughton	55	15	2	0	0	2	6	1	**4
Fond du Lac	Campbellsport	44	54	0	5	0	0	11	*0	**0
Fond du Lac	Malone	18	42	6	2	0	0	3	**3	**0
Fond du Lac	Rosendale	17	9	0	2	3	0	1	*0	**3
Grant	Sinsinawa	—	—	—	—	—	—	—	—	—
Green	Brodhead	20	7	6	0	—	6	—	*0	**0
Iowa	Mineral Point	1275	6	9	0	6	1	0	**5	**1
Jackson	Hixton	180	6	0	0	0	1	7	*0	**1
Kenosha	Burlington	36	40	2	0	2	4	31	0	**0
Marathon	Edgar	—	—	—	—	—	—	—	—	—
Marinette	Niagara	533	12	0	0	2	0	0	0	**0
Marquette	Montello	486	—	0	0	0	0	36	0	**0
Ozaukee	Mequon	85	48	1	0	2	0	23	*1	**0
Pierce	Beldenville	—	—	—	—	—	—	—	—	—
Pierce	Spring Valley	103	10	0	0	0	12	0	*0	**0
Racine	Raymond	108	22	9	0	4	13	62	0	**0
Racine	Rochester	—	58	20	0	4	0	0	*2	**13
Richland	Hill Point	22	36	0	0	0	12	3	**0	**0
Sheboygan	Plymouth	99	116	4	1	8	6	3	**1	**0
Walworth	East Troy	20	3	0	2	0	0	1	*2	**2
Walworth	Elkhorn	32	25	0	3	1	2	0	*3	**4
Waukesha	New Berlin	130	7	8	0	5	3	25	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	3	1	0	0	3	0	1	2	24
Columbia	Pardeeville	0	1	3	0	5	4	0	4	1	25
Dodge	Beaver Dam	0	0	0	6	6	10	0	18	0	65
Fond du Lac	Ripon	4	1	19	4	4	3	0	31	0	97
Grant	Prairie du Chien	0	0	0	0	0	4	0	1	0	0
Manitowoc	Manitowoc	0	0	0	0	0	0	0	23	0	0
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	0	0	0	0	0	1	0	0	0	57
Rock	Janesville	0	0	0	0	0	0	0	13	0	0
Walworth	East Troy	0	0	0	0	0	2	0	3	0	60
Wood	Marshfield	19	7	1	0	2	8	0	13	1	4

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