

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

Summer heat and humidity returned to Wisconsin, accompanied by torrential rain and damaging storms. Early- to mid-week downpours soaked portions of the central and southern areas Sunday night into Monday morning with as much as five inches of rain recorded near Madison and Kenosha. Another round of thunderstorms developed over the same areas Tuesday, bringing an additional 6-8 inches of rainfall to the southeast overnight and causing widespread flooding, power outages, and road closures. A state of emergency was declared for Kenosha, Racine, and Walworth counties due to extensive flooding along the Fox River. Summer crop development accelerated in response to above-normal early July temperatures, but the excess rain and severe damage from recent storms have caused conditions for corn and soybeans to deteriorate. The latest USDA NASS progress report rates 69% of the state's corn acreage in good to excellent condition, two percentage points below last week and 17 points below the same time last year.

LOOKING AHEAD

JAPANESE BEETLE: Numbers are increasing in fruit and field crops over much of the state. This beetle could become a serious problem this season since soil moisture

levels have been very favorable for larval survival. Damage to fruit trees, ornamentals and field crops is expected to intensify this month and control may be necessitated. Spot treatment of individual trees or problem areas is usually an effective approach.

SPOTTED WING DROSOPHILA: Captures of flies have been recorded at all nine DATCP monitoring sites as of July 12, and fly emergence is accelerating. The highest count during the past week was 125 flies in La Crosse County raspberries, while numbers at other sites ranged from 3-41 per trap. The appearance of flies signals that eggs are being laid on fruits and the small white larvae should be detectable. Berry growers are advised to finalize their management for this season's berry crops as soon as possible.

EUROPEAN CORN BORER: Pupation of first-generation corn borers has started in advanced southern and western areas. Black light traps could register the earliest moths of the summer flight in the week ahead. The treatment window for first-generation corn borers has closed over the southern two-thirds of the state following the accumulation of 1,100 degree days (mod base 50°F).

APPLE MAGGOT: Counts of 1-5 flies per trap were reported in the past week from eight of 21 apple orchard locations. Fly emergence is expected to escalate throughout July and peak in August. Apple growers

concerned about this pest should set a minimum of three traps per 10 acres at this time, increasing the density to one trap every 200-300 feet along the orchard perimeter as the season progresses. The traps should be hung at eye-level near wild hosts and early-ripening cultivars.

SOYBEAN APHID: Aphid pressure is intensifying in R1-R2 soybean fields, although the typical average is still very low at fewer than 10 aphids per plant. Monitoring efforts should be increased as soybeans advance to the early to intermediate reproductive growth stages.

BROWN MARMORATED STINK BUG: UW-Extension Entomologist PJ Liesch reports that second-instar brown marmorated stink bug (BMSB) nymphs were found near Middleton on July 2. This observation confirms the start of the first-generation of stink bugs in Dane County. BMSB is thought to have a single generation per year in Wisconsin depending on temperatures, although an early spring and summer heat could permit the development of two generations in warmer years.



Brown marmorated stink bug nymphs bmcgenomics.biomedcentral.com

CORN ROOTWORM: Beetles are emerging in southern Wisconsin. Both the northern and western species have been observed in Grant, Iowa, La Crosse, Richland and Sauk counties as of July 12.

FORAGES & GRAINS

POTATO LEAFHOPPER: Counts in some late second-crop alfalfa fields in western Wisconsin have surged above the economic threshold of two leafhoppers per sweep for stands 12 inches and taller. Notably, several 18-22 inch fields in Buffalo and Trempealeau counties sampled on

DEGREE DAYS JANUARY 1 - JULY 12

LOCATION	50°F	2016	NORM	40°F
Dubuque, IA	1568	1446	1377	2599
Lone Rock	1390	1403	—	2337
Beloit	1426	1476	1394	2422
Sullivan	1309	1209	1305	2257
Madison	1377	1363	1327	2329
Juneau	1294	1199	—	2219
Racine	1255	1235	—	2189
Waukesha	1265	1167	—	2200
Milwaukee	1247	1219	1193	2174
Hartford	1249	1167	—	2173
Appleton	1213	1137	—	2100
Green Bay	1176	1112	1156	2051
Big Flats	1269	1268	—	2154
Hancock	1172	1268	1289	2027
Port Edwards	1155	1243	1257	2004
La Crosse	1412	1492	1456	2373
Eau Claire	1281	1311	1301	2184
Cumberland	979	1105	1197	1802
Bayfield	985	857	—	1748
Wausau	1014	1127	1170	1836
Medford	970	1033	1065	1784
Crivitz	1068	986	—	1886
Crandon	878	990	919	1663

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

July 10 had extremely high counts of 5-21 per sweep. Nymphs were very abundant in these fields and hopper-burn was evident. Above-threshold populations have also developed in a few new alfalfa seedings in the northwest. In eastern Wisconsin, including Calumet, Fond du Lac, Manitowoc, Shawano, Winnebago counties, averages were far lower at less than 0.3 per sweep. Harvesting the second crop and monitoring third-crop regrowth are of particular importance at this time.

PLANT BUG: Levels of this insect vary considerably from field to field, but the average remains low at 0.7 per sweep. Nymphs in all developmental stages are common in sweep net collections.

PEA APHID: Alfalfa surveyed in the western counties contained very low populations ranging from 0.1-0.9 per sweep and averaging 0.4, or 40 aphids per 100 sweeps. Counts in the eastern areas were even lower at less than 0.2 per sweep. Populations of this insect have been consistently low since mid-June.

CORN

JAPANESE BEETLE: A heavy emergence is underway. Beetles are abundant in corn, soybeans, and fruit crops, and damage is expected. Moderate counts of 50 beetles per 100 plants were found in the edges of a few cornfields in Monroe County this week, and beetles were observed at about 35% of the sites surveyed. For corn, the primary concern is to protect the silks from clipping since heavy beetle feeding on corn silks can impair pollination. Treatment may be justified for fields with three or more beetles per ear and silks that have been clipped to ½ inch when pollination is occurring (less than 50% complete). Japanese beetles aggregate on plants in the edge rows, emphasizing the importance of obtaining a representative sample from several areas throughout the field before making control decisions. Border row spot treatments may be sufficient if the beetles and damage are confined to the field edges. Beetles must be on the outside of the ear to be killed by contact insecticides.



Japanese beetles feeding on corn silks

Krista Hamilton DATCP

CORN ROOTWORM: Beetles of the northern and western species have been noted in Grant, Iowa, La Crosse, Richland and Sauk counties since the last report. Results of last summer's beetle survey suggest larval rootworm populations, and the threat of root damage to continuous corn, could be slightly elevated in the northern and western areas this season as compared to 2016.

WESTERN BEAN CUTWORM: Peak flight, or 50% adult emergence, should occur over the southern half of the state in the next two weeks. Oviposition on corn and dry beans has been underway since late June and is increasing as the moth flight escalates. In fields where egg

masses and small larvae are found on 5% or more of the corn plants, an insecticide treatment applied at 90-95% tassel emergence will be most effective. This application timing increases the chance that the caterpillars will be exposed to the insecticide. Routine scouting should continue throughout the month.



Western bean cutworm moth

themothman.blogspot.com

EUROPEAN CORN BORER: Larvae from the spring flight of moths are in the early development stages in eastern Wisconsin and in the late stages in the western portion of the state. Evidence of their feeding was observed in 26 of 81 (32%) of cornfields surveyed from July 1-12. Leaf feeding was apparent on 42-62% of plants in exceptional fields in Shawano and Winnebago counties, and on 32-51% of plants in a few sites in Crawford and Richland counties, although the other survey sites had infestation rates below 18%. Damage caused by first-generation larvae is becoming apparent and should be relatively easy to assess at this time. Pupation has started in the southern and western areas. Black light traps could register the earliest moths of the summer flight next week.

CORN EARWORM: Pheromone and black light traps in Columbia, Dodge, Fond du Lac, Marathon and Wood counties registered very low counts of 1-4 migrants this week, and a total of only 11 moths. The economic threshold for this pest is 5-10 moths in three consecutive nights for corn and seven per trap per week for tomatoes.

SOYBEANS

SOYBEAN APHID: Densities are very low in most fields and moderate at a few sites. None of the 42 soybean fields sampled from July 1-12 had an average count

above 30 aphids per plant. However, scattered fields had individual plants with 100 or more aphids concentrated mostly in the field margins, indicating populations are building. As densities escalate, growers and crop advisors are reminded that the aphid treatment threshold established back in 2000 remains valid today, and that insecticide treatment should not be considered until the economic threshold of 250 aphids per plant on 80% of the plants has been exceeded. Aphid counts have not begun to approach this level in any soybean field surveyed by DATCP as of July 12.

GREEN CLOVERWORM: Larvae are appearing in southern and western Wisconsin soybean fields. Numbers are still low and defoliation is light (<2% fieldwide), but outbreaks of this caterpillar occur every 5-6 years and conditions are favorable for damaging populations to develop this season.

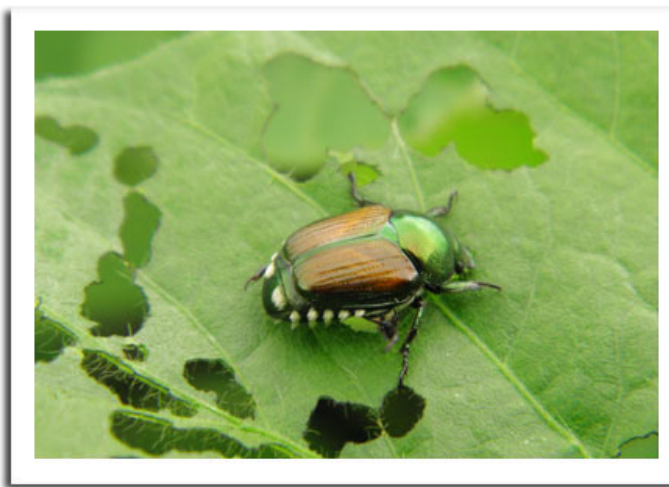


Green cloverworm larva

Krista Hamilton DATCP

JAPANESE BEETLE: Soybeans across the southern half of the state are showing 2-18% of plants with light to moderate leaf injury by a combination of Japanese beetles, bean leaf beetles, grasshoppers and various caterpillars. Leaf injury by these defoliators should not be allowed to exceed 20% (incidence and severity) between the bloom and pod-fill stages and 30% in the pre-bloom soybeans. The UW-recommended sampling method is to select 10 plants throughout the field, choosing a trifoliolate from the upper, middle and lower canopy on each plant, for a 30-leaf sample. Compare the 30 leaflets with an online defoliation estimating guide to determine the average percent defoliation, and if feeding is progressing through the canopy. Scouting several areas in the field interior, in addition to field edges where beetles are most numerous, is required for an accurate assessment. Spot

treatment may be considered for severely defoliated border areas. Recall that soybeans can tolerate considerable defoliation without yield loss and defoliation is commonly overestimated.



Japanese beetle

Krista Hamilton DATCP

FRUITS

APPLE MAGGOT: Emergence of flies continued for the second week, with a high count of 5 flies on red sphere traps reported from Grant and Sheboygan counties. Captures have also occurred in Bayfield, Dane, Fond du Lac, Marathon, Pierce, and Racine counties. Apple orchards affected by recent hailstorms are at increased risk of infestation by this pest since hail-damaged fruits release volatiles that can attract flies from long distances. Maintenance of traps will be important as emergence continues and oviposition on apples increases in late July and early August.



Apple maggot fly on a red sphere trap

Lisa Reeves DATCP Cooperator

CODLING MOTH: Counts have decreased in most orchards as the first flight subsides. Orchardists who have not observed a distinct decline in moth activity and are having difficulty determining the most effective treatment window should use an accumulation of 1,000 degree days (modified base 50°F) from the spring biofix in late May to time the start of larvicide applications. As a general rule, approximately 1,000 degree days are required between the first and second larval generations.



Codling moth larva

Kevy3534 flickr.com

SPOTTED TENTIFORM LEAFMINER: The second flight should peak soon at most monitoring sites, although counts remain high. Six of 21 orchards reported counts above 500 moths per trap this week, with the high count of 1,377 moths per trap registered in Marquette County. Egg laying is expected to be heavy as long as pheromone traps continue to register high numbers of moths. Apple orchards with populations greater than one mine per leaf or a history of infestation should consider controlling second-generation larvae to reduce build-up of leafminers before the third flight begins in late July or August.

POTATO LEAFHOPPER: A Fond du Lac County apple grower reports that populations are heavy in some orchard blocks and that associated discoloration of new shoots and mild hopperburn symptoms are appearing. Leafhoppers have also become abundant in western Wisconsin orchards. One- to two-year-old, non-bearing apple trees are most susceptible to leafhopper feeding and should be monitored for leaf curling and yellowing caused by the adults and nymphs. Treatment is justified at levels of one or more nymphs per leaf when symptoms are evident.

VEGETABLES

LATE BLIGHT: Environmental conditions are appropriate for late blight development. Commercial potato fields infected with this disease have not been confirmed to date, but disease severity value accumulations near Antigo, Grand Marsh, Hancock and Plover have exceeded the late blight risk threshold, indicating that the requirements for disease development have been met. The closest confirmed report of potato late blight is from St. Joseph County in southwestern Michigan. Home gardeners and farmers should consider preventative fungicide applications to protect their tomatoes and potatoes. Registered fungicides for potato late blight in Wisconsin are listed at the UW-Madison Vegetable Pathology website: <http://www.plantpath.wisc.edu/wivegdis/pdf/2017/May%2022,%202017.pdf>

STRIPED CUCUMBER BEETLE: Adults are emerging in greater numbers in the southern half of the state. Growers of cucurbits should continue to monitor plants for these yellow and black striped beetles, which may transmit bacterial wilt of cucurbits through feces or contaminated mouthparts. Control is warranted for populations of one beetle per plant in melons, cucumbers and young pumpkins, and five beetles per plant for less-susceptible cucurbits such as watermelon and squash.



Striped cucumber beetles inside squash blossom Krista Hamilton DATCP

SQUASH BUG: Reports suggest these difficult-to-control insects have become abundant in some home gardens since late June. The treatment threshold for squash bugs is based on an average count of one egg mass per plant, although scouting for tiny eggs is impractical in larger plantings. If the insects are numerous and wilting is ob-

served, pyrethroid insecticides such as permethrin directed against the nymphs are an option for control. Growers should be aware that the efficacy of these materials is reduced at temperatures above 80°F and the smaller nymphs are more readily killed than the adults. Refer to UWEX publication A3422 “Commercial Vegetable Production in Wisconsin” for a list of registered insecticides.



Squash bug nymphs

www.gardensimply.com

CORN EARWORM: Eleven specimens were captured at pheromone trap sites in Columbia, Dodge, Fond du Lac, Marathon and Wood counties during the July 5-12 reporting period. The primary migration of moths from the southern U.S. could begin by late July or early August. Participants in the corn earworm trapping network should begin replacing lures on a weekly basis.

POTATO LEAFHOPPER: Populations in vegetable crops have shown a marked increase in the past two weeks as a result of warmer temperatures and alfalfa harvest operations. Reports indicate that counts have exceeded economic levels in a few potato and snap bean fields. Established economic thresholds are one per sweep or one nymph per 10 leaves in snap beans and three per sweep in potatoes when nymphs are present.

NURSERY & FOREST

JAPANESE BEETLE: Emergence continued to escalate over the past week. Inspectors observed beetles on field and container stock from Kenosha to Eau Claire County. Populations are already very high, and increased moisture in lawns and turf throughout the state is expected to bring more beetles this month. Removing beetles by hand or shaking them into jars filled with soapy water

may be adequate where numbers are low. Foliar sprays of contact insecticides containing carbaryl, acephate, and pyrethroids offer immediate knockdown, while formulations of pyrethrins with PBO (piponyl butoxide) are also effective. Neem oil products provide only about 3-4 days of feeding deterrence. Long-term cultural control by planning landscapes with less favored plants such as arborvitae common lilac, holly, rhododendron, yew, and many oak, pine, and fir species should also be considered.

SCALE INSECTS: An assortment of scale insect species were found this week, including *Euonymus* scale on American, Fletcher scale on ‘Techny’ Arborvitae, and *Lecanium* scale on American hornbeam. Adult scales develop a waxy covering impenetrable by insecticides, therefore any insecticide treatment must target the immature mobile crawlers. For the *Euonymus* scale, the period of mobile crawler activity is forecast to begin next week (July 16-22). Severe infestations can be controlled with horticultural oils, insect growth regulators, or conventional insecticides as soon as the presence of crawlers is confirmed using a 10X hand lens. Natural enemies are also helpful in reducing scale populations.



Lecanium scale on American hornbeam

Michael Falk DATCP

CEDAR-HAWTHORN RUST: The bright-orange spots characteristic of this rust were apparent on the leaves of “Winter King” and “Washington” hawthorn trees in southern Wisconsin retailers this week. As with the similar cedar-apple and cedar-quince rusts, this fungal disease requires a rosaceous host and a juniper host in close proximity to complete its lifecycle. Cedar-hawthorn rusts can infect the leaves, fruits, and stems of trees, causing yellowing, disfiguration, and premature defoliation. Selecting resistant hawthorn cultivars, removing diseased parts of the tree, or completely pruning out

severely infected branches are the recommended controls. Trees can be protected from infection by fungicide treatments in spring and early summer. Junipers may be treated with a Bordeaux mixture every two weeks beginning in mid-summer.



Cedar-hawthorn rust on hawthorn DATCP Nursery Program

PINE BARK BEETLE: Evidence of bark beetle infestation was found on balled-and-burlapped (B&B) eastern white pines at a southern Wisconsin nursery stock dealer. Trees stressed by drought and heat exposure from prolonged B&B storage are especially attractive to bark beetles, which create galleries that structurally weaken trees and holes in the bark that allow pathogenic fungi and bacteria to invade and cause disease. Bark beetle-infested pines should be removed from sale and destroyed to prevent further spread. Prevention of bark beetle infestations in pine includes keeping B&B trees well-watered and optional insecticide treatment prior to digging.



Pine bark beetle damage on white pine Shanon Hankin DATCP

GYPSY MOTH: The annual moth flight began on July 5 in Dane County, and moths have since been reported from Adams, Grant, Juneau, Richland and Winnebago counties. Trap setting by the DATCP Gypsy Moth Trapping Program was completed on July 7. A total of 10,901 traps have been placed in 48 counties this season. Trappers have started trap check procedures south of Highway 21. Monitoring of traps located north of Highway 21 will begin once moth emergence is confirmed in that region.



Male gypsy moth butterfly-conservation.org

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 5 - 12

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	OFM ⁵	LPTB ⁶	DWB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	80	0	0	3	1	3	9	0	**3
Bayfield	Oriente	6	0	0	2	0	10	5	—	—
Brown	Oneida	500	58	10	11	—	1	11	0	**0
Columbia	Rio	—	—	—	—	—	—	—	—	—
Crawford	Gays Mills	117	—	0	6	—	15	6	0	—
Dane	DeForest	—	—	—	—	—	—	—	—	—
Dane	Mt. Horeb	257	150	0	5	5	5	1	0	**0
Dane	Stoughton	266	141	12	1	0	13	12	3	**1
Fond du Lac	Campbellsport	300	41	0	22	0	6	40	—	—
Fond du Lac	Malone	160	60	3	16	0	3	9	**2	**0
Fond du Lac	Rosendale	112	24	6	1	2	1	7	2	**7
Grant	Sinsinawa	91	62	25	—	—	—	—	5	**6
Green	Brodhead	21	3	0	0	—	0	—	—	—
Iowa	Mineral Point	1065	120	0	3	2	26	4	0	**0
Jackson	Hixton	73	7	2	0	0	1	0	**0	**0
Kenosha	Burlington	550	8	4	0	2	10	22	1	**0
Marathon	Edgar	—	—	—	—	—	—	—	—	—
Marinette	Niagara	15	0	0	5	56	1	0	—	—
Marquette	Montello	1377	113	0	13	0	0	17	—	**0
Ozaukee	Mequon	215	62	2	10	0	1	54	0	**0
Pierce	Beldenville	—	—	—	—	—	—	—	—	—
Pierce	Spring Valley	585	62	0	0	0	31	9	0	**0
Racine	Raymond	531	43	19	7	2	18	72	0	**0
Racine	Rochester	850	176	7	0	1	0	13	*1	**0
Richland	Hill Point	315	14	0	2	0	32	7	**0	**0
Sheboygan	Plymouth	990	45	2	10	0	4	2	**5	**0
Walworth	East Troy	—	—	—	—	—	—	—	—	—
Walworth	Elkhorn	—	—	—	—	—	—	—	—	—
Waukesha	New Berlin	70	7	5	1	2	10	90	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	5	0	6	0	0
Columbia	Pardeeville	0	1	0	0	5	8	0	6	1	7
Dodge	Beaver Dam	2	0	0	6	0	0	0	9	0	1
Fond du Lac	Ripon	0	0	0	0	1	0	0	16	0	0
Grant	Prairie du Chien	0	0	0	0	0	1	0	1	0	0
Manitowoc	Manitowoc	1	0	0	0	0	8	0	5	0	0
Marathon	Wausau	1	0	1	0	4	4	11	6	0	0
Monroe	Sparta	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	1	2	0	0	0	2	0	44	2	0
Walworth	East Troy	0	1	0	0	0	3	0	0	0	0
Wood	Marshfield	0	1	0	0	1	0	0	3	0	0

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