

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

Hot, humid weather prevailed during the week, spurring rapid crop development. Daytime highs were above-normal for early June and reached the lower to mid-90s, while nightly lows ranged from the 50s to 70s. Severe thunderstorms spread across the northern and central areas on June 11 and 12, producing damaging straight-line winds, large hail and heavy downpours that led to widespread flooding. A National Weather Service report confirmed over five inches of rain fell in Vilas County and totals of 2-4 inches were common in the northeast. Gusty southerly winds and torrential rain interfered with orchard pest control and post-emergence herbicide applications, though periods of calm, dry weather allowed for continued late-season planting and other fieldwork. The heat caused a conspicuous increase in pest activity, including the first confirmed reports of Japanese beetle and spotted wing drosophila emergence.

LOOKING AHEAD

EUROPEAN CORN BORER: Moth emergence has increased with the heat, and oviposition is occurring on the tallest, most advanced corn. Early signs of larval damage, including leaf pinholes and shot holes, should become noticeable in southern Wisconsin fields in the week ahead.

SPOTTED WING DROSOPHILA: Flies are appearing in survey traps. The first captures occurred in Dane County by June 5 and flies have also been reported from Door and La Crosse counties. Berry growers are advised to begin daily trap monitoring and routine inspections of fruits for larvae.

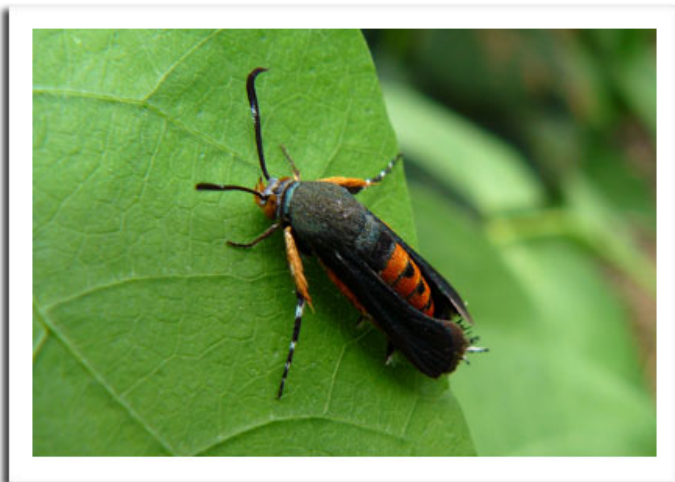
CODLING MOTH: Most apple orchards in the southern half of the state have accumulated 250-350 degree days (modified base 50°F) beyond the mid-May biofix, and treatments for first-generation larvae have been applied. Reapplication of CM insecticides may be necessary if two or more inches of rain fell post-treatment and trap counts have been consistently above the five moths-per-trap-per-week threshold. Scouting fruits for tiny, circular entry wounds should begin next week.

APPLE MAGGOT: Degree day accumulations in warmer areas of southwestern and south-central Wisconsin will be appropriate for fly emergence by June 18. Red sphere and yellow sticky traps can be placed at this time to detect the earliest emerging adults. The treatment threshold for apple maggot is five flies per trap per week for traps enhanced with ammonia attractant or one fly per trap per week for unbaited traps.

TRUE ARMYWORM: Infestation rates in surveyed corn remain below economically significant levels with 1-5% of plants showing light feeding, but increased scouting for

localized problems is recommended. Caterpillars ranging from ½ to 1 inch in length were found in about 25% of the corn sites sampled this week and many fields still have an abundance of grassy weeds favorable for armyworm problems. Late herbicide treatments at these sites may force more larvae from grasses onto corn plants.

SQUASH VINE BORER: Emergence of moths and the start of egg laying are expected to begin next week in the southwestern counties. Pumpkins, squash, gourds and other vine crops should be closely monitored for eggs and evidence of larval boring from 900-1,000 degree days (base 50°F). Insecticidal controls may be applied to the stems of plants when the moths are first noticed, while the runners are less than two feet long. Repeated applications may be required throughout the three-week oviposition period.



Squash vine borer moth D. Charvat '10 flickr.com

FORAGES & GRAINS

ALFALFA WEEVIL: The peak larval damage period is expected to end by late June as populations transition into non-feeding pupal stage. Larvae are still common in low to moderate numbers in second-crop alfalfa. The average count from June 8-14 was below 0.3 per sweep and leaf tip feeding was less than 30% in most surveyed fields.

PEA APHID: Levels of this insect have been decreasing since early June. Densities currently range from 0.1-3.8 per sweep and average less than one per sweep. The rainy, humid weather of the past week favors the spread of fungal pathogens that may contribute to aphid population decline.

DEGREE DAYS JANUARY 1 - JUNE 14

LOCATION	50°F	2016	NORM	40°F
Dubuque, IA	964	867	795	1720
Lone Rock	856	816	-	1532
Beloit	881	882	806	1603
Sullivan	789	674	739	1462
Madison	832	784	765	1511
Juneau	774	681	-	1427
Racine	712	651	-	1371
Waukesha	743	663	-	1404
Milwaukee	711	626	639	1363
Hartford	739	658	-	1390
Appleton	691	621	-	1304
Green Bay	666	565	640	1267
Big Flats	771	724	-	1384
Hancock	700	724	749	1285
Port Edwards	693	699	728	1275
La Crosse	865	858	847	1553
Eau Claire	761	764	748	1392
Cumberland	556	661	670	1110
Bayfield	358	418	-	847
Wausau	590	612	657	1145
Medford	564	581	590	1113
Crivitz	613	503	-	1162
Crandon	501	527	523	1022

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

POTATO LEAFHOPPER: Counts are escalating in second-growth alfalfa and in vegetable crops. Numbers in 8-16 inch regrowth in the southern and western districts ranged from 0.1-1.5 adult leafhoppers per sweep this week and averaged 0.5 per sweep, whereas average counts were less than 0.3 per sweep in all fields sampled during the previous week. A few 12-inch fields in the Arcadia area of Trempealeau County had above-threshold populations of 1.1-1.4 per sweep. Development and reproduction are expected to increase by late June and the economic threshold of 1.0 per sweep in 6-12 inch alfalfa and 2.0 per sweep in alfalfa taller than 12 inches could be exceeded in more fields. Continued sampling of alfalfa regrowth is recommended.

MEADOW SPITTLEBUG: The adult stage of this insect is collecting in alfalfa sweep net samples, signaling that the population has matured and their distinctive frothy spittle masses will not reappear until next spring.

CORN

EUROPEAN CORN BORER: The treatment window for first-generation larvae has opened near Janesville, La Crosse, Spring Green and other advanced southern and western locations. Close inspection of conventional cornfields and sweet corn for eggs, small larvae, and early whorl feeding is particularly important during the next two weeks. Controls directed against the early-instar stages must be applied before the caterpillars begin boring into corn stalks and midribs. At average June temperatures, the 300 degree day corn borer treatment window from 800-1,100 GDDs (modified base 50°F) is equivalent to about 15 calendar days. Larvae are susceptible to chemical control for only about a week after egg hatch.

STALK BORER: Light feeding injury was noted in Monroe, La Crosse, Trempealeau and Vernon counties where 1-11% of corn plants in the edge rows were damaged. This mid-season pest migrates from perennial grasses and broadleaf weed hosts in early June and infests predominantly the first 4-6 rows of corn. Leaf feeding is expected to become pronounced by the end of the month and spot treatment may be justified for severe infestations. Scouting is recommended through the V7 stage since Bt corn hybrids suppress but will not completely control stalk borers.



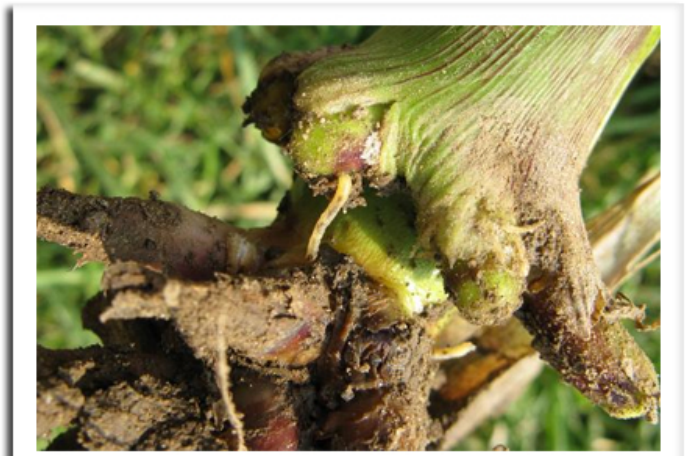
Stalk borer damage

Krista Hamilton DATCP

WESTERN BEAN CUTWORM: Pheromone traps are now being set in preparation for the annual moth flight. Participants in the western bean cutworm monitoring program are reminded to begin reporting counts to Tracy Schilder at tracy.schilder@wisconsin.gov by June 21 and each Wednesday during the 10-week trapping survey.

BLACK CUTWORM: The threat from this early-season pest has not subsided, and isolated problems could develop in later planted corn. Scouting may be discontinued once plants reach the V5 stage.

CORN ROOTWORM: Peak egg hatch is predicted to occur between 684 and 767 degree days (modified base 52°F), or by June 18 from La Crosse south to Janesville, by June 24 in the southeast and central areas, and by June 27 near Wausau. The first adult rootworm beetles usually appear around Independence Day.



Corn rootworm larva

JSmith www.cornpest.ca

SOYBEANS

SOYBEAN APHID: Densities are low and aphids have colonized no more than 10% of plants at most sites, although one exceptional field in Trempealeau County surveyed on June 12 had a 35% infestation rate, with an average of 19 aphids per infested plant. Several plants in this field were infested with about 50-80 aphids concentrated on the newest trifoliolate. Average counts in the other 30 soybean fields sampled this week were less than two aphids per plant and nine per infested plant, based upon examination of 100 plants per field. Populations are expected to increase sharply as soybean fields enter the reproductive stages of growth. Routine monitoring for aphids should begin by early July.

ROSE CHAFER: Light defoliation caused by this beetle was observed this week in a few western Wisconsin soybean fields. Currently the infestations involve fewer than 2% of plants, though as many as four beetles per plant were found in two fields, one in La Crosse County

and another in Trempealeau County. Rose chafers are also appearing on corn and a variety of ornamental and garden plants. Beetle pressure is likely to be heaviest in fields on sandy soils and can be expected to continue until mid-July.



Rose chafer

Krista Hamilton DATCP

SLUGS: Surveys in the west-central counties found minor but widespread leaf feeding injury on approximately 2-30% of plants in fields with soils saturated after several rounds of heavy rain. The observed defoliation was primarily limited to the unifoliate leaves and was not expected to have an adverse long-term impact on the plants. Economic thresholds have not been developed for slug control in soybeans or corn and chemical control using baits should only be considered as a last resort when plants show severe defoliation, wet conditions persist, and the slugs are actively feeding.

FRUITS

APPLE MAGGOT: Emergence of flies from the soil could begin by June 16 near Janesville, June 20 near Eau Claire and June 25 near Appleton. This annual event corresponds with the accumulation of 900 degree days (modified base 50°F) when soil moisture is adequate. Traps should be placed next week in perimeter trees adjacent to abandoned orchards or woodlots to capture the earliest flies.

OBLIQUEBANDED LEAFROLLER: Larvae resulting from the first moth flight are emerging across the southern half of the state. The small, newly-hatched caterpillars are controlled by most products applied for codling moth (except granulosis virus and mating disruption), but scouting is

still required to determine if codling moth sprays have effectively reduced OBLR populations or if additional measures are needed to prevent fruit damage. Sampling for fruit and foliar feeding should begin seven days after the first moths are captured in pheromone traps.

LESSER PEACHTREE BORER: Counts ranging as high as 57 moths per trap per week indicate the first of two flights should soon peak. Control of LPTB in orchards is based on preventing larval establishment underneath the bark and should be timed just before or to coincide with egg hatch. Once the larvae are under the bark, chemical control is ineffective. LPTB egg hatch begins about 8-10 days after moth emergence, thus the optimal treatment window is 7-14 days after the first moths are captured in pheromone traps. Directed sprays must be applied uniformly to drench the trunk and scaffold limbs to a height of about eight feet.

Orchards that record high LPTB trap counts are advised to begin checking for signs of infestation in the gum in cankered areas, such as presence of pupal skins, sawdust, and frass produced by feeding borers. If the gum does not contain frass or sawdust, the injury is probably not caused by borers. LPTB problems are almost always associated with *Cytospora* canker and, to a lesser extent, pruning wounds, winter injury, and mechanical damage. A second and more damaging flight occurs in late August or September.



Lesser peachtree borer

Stuart Tingley birdingnewbrunswick.ca

ROSE CHAFER: This generalist pest is emerging in greater numbers and may rapidly arrive in vineyards and orchards, where the beetle skeletonize leaves and consume developing fruit clusters. Scouting twice weekly is advised for vineyards on sandy soils and those

with a history of rose chafer problems once the first beetle is observed. An average of two beetles per vine has been suggested as the basis for initiating controls. Systemic soil drench insecticides are only effective if applied at least 20 days in advance of the adult emergence period. Commercially available traps can attract more beetles from surrounding areas and are not recommended for use in vineyards.



Rose chafer beetles feeding on wild grape Krista Hamilton DATCP

SPOTTED WING DROSOPHILA: The UW reports that emergence of SWD flies began by June 5 in Dane County. Flies have also been captured in survey traps in Door and La Crosse counties as of June 15. Berry growers should intensify monitoring and scouting efforts at this time, and plan to implement SWD treatment programs once the first flies are captured.



Spotted wing drosophila maggot in raspberry umaine.edu

REDBANDED LEAFROLLER: Moth counts are expected to increase by July as the second flight gains momentum.

Minimal RBLR activity was noted again this week, with average counts varying from 0-20 moths per trap and averaging less than three per trap.

SAN JOSE SCALE: Monitoring for crawlers by taping scaffold branches should be underway. Concentrating the tape on younger limbs (2-3 inches in diameter) in blocks with a history of SJS damage is advised. A 10x hand lens is required to view the oval, bright-yellow crawlers. According to Orchard IPM Specialist John Aue, captures of 10-15 crawlers in a few days or 10 crawlers on one tape with zero on all other tapes, may warrant application.

VEGETABLES

SQUASH VINE BORER: Moths were observed in a La Crosse County home garden on June 9, confirming that adult emergence and oviposition has started. Close inspection of pumpkins, squash, gourds, and other vine crops for eggs and evidence of larval boring should begin once 900 degree days (simple base 50°F) have been reached around the third week of June. Insecticides for SVB control must be applied before the larvae bore into vines and become protected by vine tissue. Applying treatments while runners are shorter than two feet long is most critical. Two to three applications made five to seven days apart may be required during the three-week oviposition period.



Squash vine borer eggs bemerson westmadison.ars.wisc.edu

POTATO LEAFHOPPER: Counts in snap beans and potatoes could increase markedly this month as leafhopper reproduction intensifies and harvesting of second-crop alfalfa begins. Commercial vegetable growers should use an insect sweep net to monitor fields, taking 25 sweeps

per sample site and sampling from at least five sites per 30 acres. Counting nymphs and adults by turning over 25 leaves from the middle of the plant is the protocol for gar-dens or smaller-acreage farms. Recommended treatment thresholds for potatoes are one adult per net sweep or an average of 2.5 nymphs and adults on the undersides of 25 potato leaves. In snap beans, the threshold is 0.5 adults and nymphs per sweep for seedlings, and one leafhopper per sweep for larger plants in the third trifoliate to bud stages.

IMPORTED CABBAGEWORM: Adult butterflies have become more common this month and larvae of varying sizes can be found on cabbage, cauliflower and broccoli in most vegetable plantings. Manual removal of the caterpillars is suggested for smaller gardens, while treatment with a product containing the bacterial insecticide *Bacillus thuringiensis* (Bt) subspecies *aizawi* (Agree, Xentari) or subspecies *kurstaki* (Biobit, Cutlass, DiPel, Javelin, Lepinox, MVP, Thuricide) can be considered for larger production fields. Bt is most effective against small larvae and may not control larger, full-grown caterpillars. Most Bt products persist on plants only a few days and must be reapplied if small larvae are actively feeding.



Imported cabbageworm larvae

www.insectpod.com

LATE BLIGHT: Disease severity value accumulations near Grand Marsh, Hancock and Plover may exceed the late blight risk threshold next week, indicating that the conditions required for disease development will have been met. Home gardeners and farmers, whether conventional or organic, should consider preventative fungicide applications to protect their tomatoes and potatoes. No cases of late blight have been confirmed in Wisconsin as of June 15.

NURSERY & FOREST

FLETCHER SCALE: Arborvitae shrubs in a St. Croix County nursery were infested with this scale pest, which can cause yellowing, premature needle drop or branch dieback. The mobile crawlers, the life stage most susceptible to insecticidal control, should begin emerging soon. For severe infestations, horticultural oils or soaps, insect growth regulators, or conventional insecticides may be used as soon as the crawlers are noticed.



Fletcher scale on arborvitae

Konnie Jerabek DATCP

FOUR-LINED PLANT BUG: Adults of this insect have been observed on dogwood, hydrangea, viburnum and various perennials this month. Damage appears as small, round, sunken dark spots which may be mistaken for a leaf spot disease. The spots may become clear and after several weeks the affected tissue drops out leaving small holes. Both the adult and nymph stages can injure plants.



Four-lined plant bug

Noah Bades flickr.com

WEIR'S CUSHION RUST: This highly contagious fungal disease of spruce trees was observed by inspectors on Colorado blue spruce at a Lincoln County nursery. Needles infected with WCR develop yellow spots that produce pustules in spring which release bright-orange spores that infect new growth. Previously-infected needles turn brown and drop. A preventative approach using a fungicide containing at least 50% chlorothalonil applied before or shortly after bud break is recommended.



Weir's cushion rust on spruce

DATCP Nursery Program

JAPANESE BEETLE: Beetle emergence was noted on June 10 in La Crosse County. Damage to fruit trees, ornamentals, nursery stock and field crops should be anticipated during the next two months, with peak activity occurring in mid-July. Populations of this invasive beetle are now established as far north as Barron County in northwestern Wisconsin and Oconto County in the northeast.



Japanese beetle

dnr.state.mn.us

OAK GALLS: Nursery inspections in the past week found noxious oak gall and oak petiole gall wasp on oaks in Dane County. Galls are abnormal outgrowths of plant tissue caused by insects, fungi, bacteria, nematodes or mites. These growths may develop on any plant part, but most commonly occur on the branches and leaves. Although usually an aesthetic problem for larger oaks, some galls may pose a threat to smaller nursery trees. Most management recommendations emphasize pruning or removal of galls before wasp emergence in spring. Application of a systemic pesticide to control the adult stage may also be a viable option for severe cases.



Oak leaf gall

Shanon Hankin DATCP

HOLLYHOCK SAWFLY: Severe defoliation of hollyhocks on a Monroe County farm was attributed to the tiny green and black larvae of this insect. The gregarious caterpillar-like worms feed in groups on the underside of hollyhock leaves, causing a lacy or skeletonized pattern of damage that can be misidentified as Japanese beetle defoliation. Chemical control with products containing Btk must be initiated as soon as the first holes appear on the lower leaves.

APPLE INSECT & BLACK LIGHT TRAP COUNTS JUNE 8 - 14

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	OFM ⁵	LPTB ⁶	DWB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	7	5	0	0	3	9	—		
Bayfield	Orienta	32	0	0	0	0	0	—		
Brown	Oneida	225	4	5	10	0	9	0		
Columbia	Rio	255	3	7	14	—	30	—		
Crawford	Gays Mills	110	1	2	11	—	1	9		
Dane	DeForest	0	1	5	7	0	—	—		
Dane	Mt. Horeb	57	1	3	16	—	21	3		
Dane	Stoughton	10	20	14	12	0	4	—		
Fond du Lac	Campbellsport	3	0	0	1	5	54	—		
Fond du Lac	Malone	1	0	6	10	1	23	10		
Fond du Lac	Rosendale	12	11	3	6	0	1	4		
Grant	Sinsinawa	39	3	19	16	—	—	—		
Green	Brodhead	—	—	—	—	—	—	—		
Iowa	Mineral Point	690	—	2	10	8	34	—		
Jackson	Hixton	17	4	2	7	11	12	—		
Kenosha	Burlington	80	0	4	25	3	30	20		
Marathon	Edgar	13	1	2	0	14	53	—		
Marinette	Niagara	9	0	0	0	15	0	—		
Marquette	Montello	126	3	5	30	—	20	—		
Ozaukee	Mequon	0	0	10	3	0	6	—		
Pierce	Beldenville	3	0	8	10	14	8	10		
Pierce	Spring Valley	0	0	0	21	1	47	—		
Racine	Raymond	45	0	27	28	7	57	—		
Racine	Rochester	135	1	21	35	—	0	3		
Richland	Hill Point	18	0	3	20	0	5	—		
Sheboygan	Plymouth	30	0	7	2	10	12	22		
Walworth	East Troy	—	—	—	—	—	—	—		
Walworth	Elkhorn	—	—	—	—	—	—	—		
Waukesha	New Berlin	—	—	—	—	—	—	—		

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	—	—	—	—	—	—	—	—	—	—
Columbia	Pardeeville	0	1	0	0	1	1	0	3	1	0
Dodge	Beaver Dam	0	2	1	2	8	0	0	0	0	0
Fond du Lac	Ripon	0	0	0	0	7	0	1	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	3	3	0	0
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	0	0	0	0	9	0	0	0	0	0
Rock	Janesville	0	0	0	0	2	0	0	3	0	0
Walworth	East Troy	0	0	0	0	21	1	0	1	0	0
Wood	Marshfield	0	9	0	0	2	3	14	2	2	0

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