

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

Cooler conditions developed in Wisconsin at the start of the week. Afternoon high temperatures were near or slightly below normal for early June and were mainly in the 60s and 70s. Overnight lows dropped to the 30s and 40s and a frost advisory was issued on June 7 for the far northern counties. Scattered showers and isolated storms lingered throughout the week, though most of the state experienced several days of open weather for late planting and post-emergence weed management. The occasional showers increased soil moisture supplies, which averaged 91% adequate or surplus statewide as of June 5, while normal temperatures maintained favorable early-season prospects for corn and other summer crops. Despite rain delays, alfalfa harvesting continued ahead of the usual pace and approximately three-quarters of the first crop has been cut. Soybean planting is nearly complete and 74% of the crop has emerged, about 26 percentage points or 10 days ahead of the five-year average.

LOOKING AHEAD

EUROPEAN CORN BORER: The tallest, most advanced corn is now suitable for oviposition by female corn borer moths. Early signs of larval damage, including leaf pinholes and shot holes, should be noticeable in southern Wisconsin fields in the week ahead.

TRUE ARMYWORM: Surveys indicate larval populations in corn remain below economically significant levels, but continued scouting for localized problems is recommended. Some fields have an abundance of grassy weeds favorable for armyworm development and late herbicide treatments at these sites could force the larvae from the grasses onto corn plants.

EASTERN TENT CATERPILLAR: Pupation has begun in advanced areas of southern Wisconsin. The first moths may begin appearing at lights and in black light traps in the next two weeks.

SOYBEAN APHID: Early infestations were observed for the first time this season on June 1 in La Crosse County. Surveys this week detected aphids in only three of 53 fields sampled. Densities were low and ranged from 1-30 per infested plant on 1-4% of plants. The aphids were also found in Dane, Green and Richland counties.

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 22 and each Wednesday during the 10-week trapping survey.

STALK BORER: Migration of stalk borer larvae from grasses and broadleaf weed hosts into corn is expected

to accelerate next week. Spot treatment may be warranted for fields that show 5% of plants with leaf feeding. Damage should become pronounced by late June or early July.



Stalk borer larva

Krista Hamilton DATCP

FORAGES & GRAINS

ALFALFA WEEVIL: Surveys indicate that carryover of larvae into second-crop alfalfa is common, although averages in 8- to 16-inch regrowth are below one per sweep and leaf tip damage is generally less than 20%. Most weevils are in the third and fourth-instar stages and should pupate within the next two weeks. Routine scouting is suggested until the second crop is established or the weevil season has passed.

MEADOW SPITTLEBUG: The first spittle masses were observed four weeks ago and late-instar nymphs are now the predominant development stage. Adult spittlebugs should begin appearing in alfalfa sweep nets by late June. A population of one or more nymphs per stem may interfere with harvest operations, but infestations of this level are rare in Wisconsin.

PEA APHID: Numbers in alfalfa have not changed significantly since the last report. Counts in 53 fields surveyed from Grant County in the southwest to Marathon County in the north-central region ranged from 0.3-12 per sweep and averaged two per sweep, which is normal for this time of year. The highest counts were recorded near Montfort in eastern Grant County. Pea aphid populations in Wisconsin alfalfa usually peak by mid-June and then decline in July.

DEGREE DAYS JANUARY 1 - JUNE 8

LOCATION	50°F	2015	NORM	48°F	40°F
Dubuque, IA	730	754	685	751	1275
Lone Rock	695	717	—	708	1199
Beloit	759	745	694	785	1291
Sullivan	565	539	632	575	993
Madison	662	693	658	676	1134
Juneau	574	612	—	591	1009
Racine	548	478	—	567	995
Waukesha	565	539	—	575	993
Milwaukee	527	485	540	548	962
Hartford	565	539	—	575	993
Appleton	522	560	—	542	938
Green Bay	464	484	545	488	871
Big Flats	611	656	—	590	1002
Hancock	611	656	647	590	1002
Port Edwards	586	626	629	574	993
La Crosse	722	741	732	747	1249
Eau Claire	643	631	645	652	1113
Cumberland	559	549	575	556	959
Bayfield	354	372	—	334	613
Wausau	496	534	563	481	852
Medford	487	510	504	482	852
Crivitz	433	452	—	426	735
Crandon	440	460	451	412	729

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

ALFALFA BLOTCH LEAFMINER: The distinctive comma-shaped leaf mines caused by this insect were noted on 1-5% of alfalfa trifoliates in a few alfalfa fields in Monroe, Richland and Sauk counties. These percentages are very low in comparison to the economic threshold of 30-40% of leaves with pinholes or mines.



Alfalfa blotch leafminer mine

Krista Hamilton DATCP

PLANT BUG: Alfalfa fields across southern Wisconsin are showing low populations of 0.1-0.5 plant bugs per sweep. The economic threshold is five per sweep. Nymphs are currently more abundant than adults in most fields.

POTATO LEAFHOPPER: Counts for the period of June 2-9 were low and ranged from only 0-0.2 per sweep, with the highest average found in Green County. Nymphs were not observed this week.

CORN

TRUE ARMYWORM: Larval infestations ranged from 1-4% in corn surveyed this week. These averages are very low in comparison to the economic threshold of 25% of plants infested with two or more small larvae ($\frac{3}{4}$ inch or shorter), but the moderate moth flights documented since early May indicate the potential for damaging levels of armyworms this month. Continued scouting of corn and small grains is advised.



True armyworm leaf feeding

Krista Hamilton DATCP

EUROPEAN CORN BORER: The spring flight of moths has likely peaked across the southwest, south-central and west-central areas. Black light trap counts have been extremely low since the flight began in late May, with only 1-5 moths collected at East Troy, Janesville, Pardeeville and Prairie du Chien during the June 2-8 reporting period. Oviposition is occurring on corn, snap beans, potatoes and weed hosts, and leaf feeding by first instar larvae should be noticeable in the tallest non-Bt corn in the week ahead.

SLUGS: Damage caused by these nocturnal feeders can be found in nearly every corn field. In most cases, the

extent of foliar feeding is light and restricted to the lower leaves. Severe defoliation of young corn plants in the pre-whorl and early-whorl stages may delay development in rare circumstances, but corn normally outgrows injury caused by slugs.



Slug feeding damage on corn

Krista Hamilton DATCP

STALK BORER: Larvae varying in size from $\frac{1}{2}$ - $\frac{3}{4}$ inch were the cause of light leaf injury to 1-9% of the edge row plants in corn in Buffalo, Eau Claire, Grant, Green, Iowa, Richland, Sauk and Trempealeau counties. The migration of stalk borers from grass and broadleaf weed hosts into corn is increasing and spot treatment may be warranted by late June for fields showing 5% of plants with damage. As a reminder, most Bt corn hybrids will suppress but not completely control stalk borers, so regular scouting will be necessary through the V7 stage.

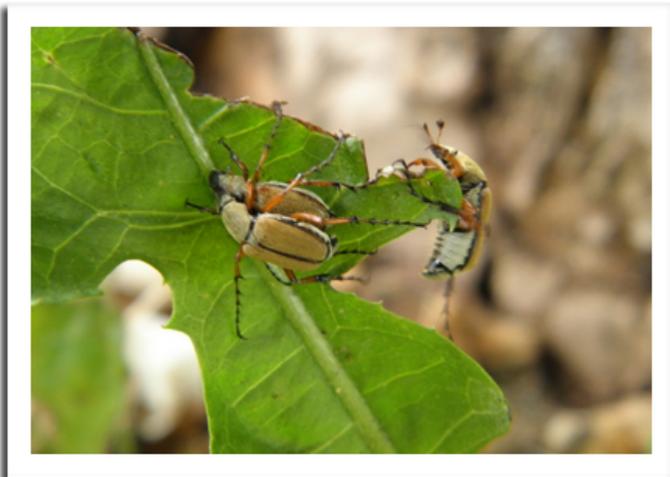
SOYBEANS

SOYBEAN APHID: Surveys of VC-V3 soybeans found aphids in only three of 53 (6%) fields sampled during the week ending June 8. Densities ranged from 1-30 aphids per infested plant on 1-4% of plants based on 100 plants examined per field. Specific counties where the aphids were detected were Dane, Green and Richland. Early colonies were also found in La Crosse County last week, suggesting that the aphids are dispersing to soybeans in southern and western Wisconsin.

BEAN LEAF BEETLE: Light defoliation was observed at 45% of sites surveyed in the southern two-thirds of the state. Despite the prevalence of feeding injury, less than 15% of soybean plants were affected in the infested fields and very few beetles were found. Treatment

specifically for this pest is seldom justifiable, but could be considered in the rare event that defoliation exceeds 30% or for populations of 39 or more beetles per foot of row during the vegetative stages.

ROSE CHAFER: This beetle has been noted on field crops and in home gardens since the last report. The adults deposit eggs in the soil, which hatch into grubs that feed on the roots of grasses, weeds and garden plants. Defoliation is expected to increase during the next 3-4 weeks, especially in areas of the state with sandy soils.



Rose chafer beetles

Krista Hamilton DATCP

FRUITS

CODLING MOTH: Most southern and central Wisconsin apple orchards have accumulated 250 or more degree days (modified base 50°F) since the first spring biofix, and treatments targeting first-generation larvae have started. Early larvicide applications made at the traditional 250 degree-day point coincide with 3% hatch and are appropriate for orchards that registered high trap counts of 10-15 moths or more in the first week after biofix. By contrast, apple orchards with initially low moth counts that increase later in the flight may benefit from delaying treatment until 350 degree days after biofix, or 15% hatch. Treating at this later window exposes more newly hatched larvae to the insecticide.

Apple growers are reminded that reapplication may be necessary if heavy rainfall of two or more inches is received and trap counts are consistently above five moths per trap per week. Applying materials at a higher

labelled rate may provide extended protection from rain and a longer reapplication interval.

REDBANDED LEAFROLLER: Moth counts were extremely low again this week, ranging from 0-7 per trap at all orchards, with the exception of 38 moths reported from Edgar in Marathon County. The weekly average was only two per trap. The low number of RBLR moths appearing in traps since late May suggests that populations are still primarily in the late larval stages. The second flight is likely to begin within the next two weeks.

OBLIQUEBANDED LEAFROLLER: The first flight of moths increased this week and is expected to continue through early July. Recent observations of full-grown larvae in cornfields and numerous moths around porch lights suggest that this pest could be abundant this season. Apple growers who have experienced OBLR problems in recent years should consider setting additional traps to determine specific blocks or varieties in which to focus sampling and control efforts. Monitoring terminals over the next 2-3 weeks for the newly-hatched second-brood larvae will also indicate the potential for problems later this season.



Obliquebanded leafroller larva

Mike Weiss Monsanto

PLUM CURCULIO: Continued scouting is recommended for another week and, if late immigration is suspected, a perimeter application may be beneficial. Distinguishing between new and old injury and determining the extent to which PC has migrated into the orchard interior is especially important if only perimeter sprays have been used as a barrier. An enlarging crescent-shaped scar or depression is typical of old injury. Organic options include maintaining a protective coating of Surround® WP

(kaolin clay) on exposed blocks. The spring PC migration from overwintering sites into orchards is expected to end once 308 degree days (modified base 50°F) have accumulated from McIntosh petal fall.

SAN JOSE SCALE: Emergence of scale nymphs or “crawlers” is anticipated next week in southern orchard locations. Sampling, by taping scaffold branches in blocks with history of damage, is advised to determine the relative abundance of scales, the start and end of the hatching period, and if treatments are successful. The tape should be changed every 7-10 days during the period of crawler activity.

GRAPE PHYLLOXERA: First generation phylloxera leaf galls are appearing on the foliage of Frontenac and Frontenac gris grapes in western Wisconsin vineyards. This observation suggests that monitoring for egg hatch should begin. Control of the first generation is usually ineffective once the galls have formed, but scouting for the mobile crawlers will help to determine the timing and need for management of the second and third generations later this season. A 10x hand lens is required to view the crawlers.



Grape phylloxera galls

Krista Hamilton DATCP

VEGETABLES

COLORADO POTATO BEETLE: Larvae in southern and west-central Wisconsin are primarily in the first and second instars. Bacterial insecticide treatments of *Bacillus thuringiensis* var. *tenebrionis* (Btt) are most effective at this time, while the larvae are very small. Most bacterial products persist only a few days and must be reapplied 2-3 times to effectively control populations.

Treatment is recommended when 6-8 inch plants show 20-30% defoliation.



Colorado potato beetle larvae

Krista Hamilton DATCP

LEAFMINER: A light leafminer infestation was reported on ‘All Seasons’ green cabbage in a Columbia County market garden. Like all leaf-mining insects, the leafminer species observed was feeding within the leaves, creating opaque serpentine mines of dead tissue that later turn brown. Of the three leafminers found in Wisconsin gardens, the vegetable leafminer has the widest host range, infesting bean, beet, cucumber, eggplant, lettuce, pea, pepper, potato, squash, tomato and watermelon. The serpentine leafminer feeds on beet, cabbage, radish, spinach and turnips, while the spinach leafminer mainly infests chard and spinach leaves.



Leafminer mines in tomato leaf

Ana Keliikuli www.growveg.com

Leafminer injury has little impact on plant growth, but can reduce marketability of edible greens. Control consists of eliminating weed hosts (e.g. lambsquarters), using

floating row covers, and removing infested leaves while mines are still small. Chemical control is usually not practical since the leafminers are protected from insecticides within the leaves.

FLEA BEETLE: Damage to beets, leafy greens, potatoes and other vegetables has intensified in home gardens and larger field production areas in southern and central Wisconsin. Treatment can be considered for young plants when large numbers of beetles are present on all plants and defoliation exceeds 30%.

NURSERY & FOREST

DOWNY MILDEW: This common fungal disease was detected on Avens, Rudbeckia, and 'Sunny Border Blue' veronica in Milwaukee and Washington counties. Downy mildew is characterized by growth of whitish-gray mold on the lower leaf surface and corresponding yellowish-green or tan areas on the upper leaf surface. Its occurrence may be reduced by controlling humidity levels and by spacing plants to increase air circulation.



Downy mildew on grape

Marcia Wensing DATCP

ARBORVITAE LEAFMINER: Arborvitae varieties at a nursery in Winnebago County were showing hollowed, browned foliage tips caused by this leafminer. The larvae of the arborvitae leafminer overwinter in arborvitae foliage, pupate in spring, and emerge as moths in June. Damage caused by the larval stages first appears in late January or February and is commonly misdiagnosed as winter injury. Severe infestations can be treated with a systemic insecticide in fall or early spring, although control is usually unnecessary.

HOLLYHOCK RUST: Nursery inspectors observed this rust disease on mallow plants at a garden center in Washington County. Symptoms include numerous light yellow spots on the upper leaf surfaces and orange-brown rust pustules on the leaf undersides. Hollyhock rust worsens throughout summer, killing most of the foliage on infected plants by early fall. Disease spread occurs by windborne spores, splashing water or infected transplants and is favored during periods of warm, humid weather. The disease cycle can be broken by cutting stalks back to ground-level in fall and destroying all infected plant material.



Hollyhock rust

Tim Allen DATCP

NON-VIABLE NURSERY STOCK: Most nursery plants that have not leafed out by now are considered non-viable and cannot be sold. Recent inspections found non-viable stock for sale at retail locations in Dodge, Kenosha, Racine, Walworth, and Washington counties. Dry bulbs and trees and shrubs with plastic-wrapped roots are particularly susceptible to moisture deficiency problems after distribution to retail stores and should be sold within three weeks of arrival. Non-viable stock may be set aside and observed for later growth, but otherwise must be destroyed or returned to the supplier.

ROSE SLUG: The tiny green larvae of this sawfly were feeding on rose foliage in La Crosse County this week, skeletonizing the leaves. Severe defoliation may be avoided by removing the larvae and the damaged, lacy leaves. Horticultural oils or residual insecticides are also effective.

APPLE INSECT & BLACK LIGHT TRAP COUNTS JUNE 2 - 8

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	APB ⁵	LPTB ⁶	DWB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	4	1	0	0	0	0			
Bayfield	Orienta	5	2	—	—	0	0			
Brown	Oneida	20	0	3	0	0	0			
Columbia	Rio	—	—	—	—	—	—			
Crawford	Gays Mills	4	0	2	8	—	—			
Dane	DeForest	—	—	—	—	—	—			
Dane	Edgerton	56	0	0	22	5	12			
Dane	McFarland	35	7	3	—	—	—			
Dane	Mt. Horeb	0	0	9	19	8	39			
Dane	Stoughton	2	4	12	11	0	2			
Fond du Lac	Campbellsport	3	0	0	0	7	18			
Fond du Lac	Malone	0	0	4	4	1	4			
Fond du Lac	Rosendale	19	0	3	1	0	4			
Grant	Sinsinawa	—	—	—	—	—	—			
Green	Brodhead	2	0	0	6	14	17			
Iowa	Mineral Point	506	1	13	13	4	30			
Jackson	Hixton	—	—	—	—	—	—			
Kenosha	Burlington	7	0	5	14	23	14			
Marathon	Edgar	19	38	1	0	2	10			
Marinette	Niagara	3	0	0	0	0	3			
Marquette	Montello	69	4	1	4	—	—			
Ozaukee	Mequon	0	0	28	2	—	—			
Pierce	Beldenville	1	0	35	0	0	15			
Pierce	Spring Valley	7	0	1	0	0	30			
Racine	Raymond	3	2	12	1	2	20			
Racine	Rochester	2	0	15	0	0	8			
Richland	Hill Point	2	0	10	34	6	58			
Sheboygan	Plymouth	35	0	7	0	5	6			
Walworth	East Troy	10	0	0	5	0	20			
Walworth	Elkhorn	20	6	0	14	0	6			
Waukesha	New Berlin	0	0	14	8	5	10			

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	0	1	0	0	0	0	4	3	0	0
Columbia	Pardeeville	0	1	1	0	2	0	5	9	0	0
Dodge	Beaver Dam	0	0	0	0	0	0	0	0	0	0
Fond du Lac	Ripon	0	0	0	0	0	0	0	4	0	0
Grant	Prairie du Chien	0	0	0	0	1	0	1	0	0	0
Manitowoc	Manitowoc	0	0	0	0	0	0	5	8	0	0
Marathon	Wausau	0	0	0	0	0	0	1	0	0	0
Monroe	Sparta	0	0	0	0	0	1	0	0	0	0
Rock	Janesville	0	0	0	0	3	0	1	13	0	0
Walworth	East Troy	3	0	0	0	5	0	2	0	0	0
Wood	Marshfield	4	1	0	0	0	0	4	8	0	0

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