

# 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  
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## WEATHER & PESTS

A cool, rainy weather pattern has prevailed since the last report. Below-normal temperatures with daytime highs in the 60s and 70s continued for a second week, slowing summer crop growth and favoring development of plant fungal diseases. Persistent, almost daily precipitation disrupted fieldwork and kept fields saturated, with topsoil moisture now rated 97% adequate or surplus statewide. Rainfall totals of 1-2 inches were common in the central areas, including 2.1 inches at Marshfield between June 22 and 28. In contrast to the first half of June, which featured a record-high average temperature of 75.3°F near La Crosse (previously 73.3°F in 2005) and hot, humid conditions throughout much of the state, the second half of the month has been unseasonably cool with frequent showers and locally severe thunderstorms. For the first time, La Crosse reported highs of 80°F or greater on each of the first 17 days in June, but temperatures during the last 11 days have not exceeded the 70s, with more rainy days than were dry.

## LOOKING AHEAD

**ROSE CHAFER:** These beetles are extremely abundant this season and reports of severe damage to grapes, raspberries, strawberries, fruit trees, roses and ornamentals are common. Chafer feeding is expected to

continue for another two weeks and should subside in most areas by mid-July. Insecticide treatment of grape vines and landscape plants at product label-specified intervals may be required as long as the chafers are numerous.

**WESTERN BEAN CUTWORM:** The annual flight has started in southern and central Wisconsin. Fifteen of 61 traps collected a total of 38 moths this week, with a high count of seven moths reported near Cambria in Columbia County. Twenty-five percent emergence of the adult population is anticipated by July 20 throughout the southern half of the state. Cornfields reaching the pretassel stage will be preferentially selected for oviposition and should be closely inspected in the next two weeks for egg masses and small larvae.

**TRUE ARMWORM:** A significant flight of 113 moths was documented in the Janesville black light trap from June 22-28. This capture indicates that larvae produced by migrants arriving in May have matured. Egg laying should intensify as more moths emerge next month and a second generation of armyworms can be expected in corn, wheat and other crops by mid- to late July.

**EUROPEAN CORN BORER:** Larvae are primarily in the early instars and will begin entering corn leaf midribs and unemerged tassels next week. The treatment window for first-generation corn borers is forecasted to close near

Beloit, Madison, La Crosse, Platteville and across the far southern and western areas by July 1, following the accumulation of 1,100 degree days (modified base 50°F). Chemical control remains an option in the southeastern, central and northern counties for an additional week, or approximately through July 9.

**SPOTTED WING DROSOPHILA:** Captures of male and female flies have to date been reported from sites in Columbia, Dane, Door, La Crosse, Pierce and Sauk counties. Numbers in DATCP traps have been low as of June 28, but emergence is increasing and past experience with this destructive invasive pest suggests that populations are likely to surge in July, with larval infestations in raspberries and other fruits becoming prevalent by mid-month. Fruit growers are advised to increase monitoring efforts at this time and make preparations for SWD management.



Spotted wing drosophila males and female flies Krista Hamilton DATCP

## FORAGES & GRAINS

**ALFALFA WEEVIL:** A few late-stage larvae persist, but most of the population has pupated and new adults are appearing in sweep net collections. Larval counts in second-crop alfalfa have declined to less than 0.2 per sweep, and further problems are not anticipated this year.

**POTATO LEAFHOPPER:** Counts in western and central alfalfa fields have increased noticeably in the last two weeks, although averages generally remain just below established economic thresholds. Surveys conducted in 30 fields during the week ending June 28 found moderate counts of 0.5-1.7 leafhoppers per sweep at 40% of

## DEGREE DAYS JANUARY 1 - JUNE 28

LOCATION	50°F	2016	NORM	40°F
Dubuque, IA	1229	1171	1081	2120
Lone Rock	1080	1118	—	1887
Beloit	1117	1181	1095	1973
Sullivan	1011	949	1015	1818
Madison	1062	1080	1039	1875
Juneau	992	945	—	1778
Racine	955	944	—	1748
Waukesha	969	921	—	1765
Milwaukee	947	925	903	1734
Hartford	954	913	—	1737
Appleton	912	878	—	1660
Green Bay	882	840	889	1616
Big Flats	976	998	—	1721
Hancock	893	998	1015	1608
Port Edwards	883	974	986	1592
La Crosse	1088	1181	1142	1910
Eau Claire	971	1049	1015	1735
Cumberland	726	888	924	1410
Bayfield	521	636	—	1146
Wausau	761	880	906	1443
Medford	724	809	821	1399
Crivitz	804	739	—	1482
Crandon	654	766	716	1301

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

sites, while 60% had low counts of less than 0.4 per sweep. The higher averages were observed in Juneau, Lafayette and Sauk counties. Nymphs are appearing in more alfalfa fields, indicating a potential for leafhopper populations to increase to above-threshold levels next month.

**PEA APHID:** Numbers average approximately one aphid per sweep, with a few sites containing higher counts of 2-3 per sweep. Pea aphid levels have shown a considerable decline since mid-June.

**PLANT BUG:** Counts in the southern half of the state range from 0.1-1.9 per sweep. The average is only 0.4 per sweep, based on surveys in 30 fields. Nymphs of various maturities can be found in most fields and reports suggest that these insects are causing damage in some nurseries, apple orchards, and in fruit crops.

## CORN

**WESTERN BEAN CUTWORM:** Moth emergence continued for a second consecutive week. The DATCP network of 61 pheromone traps captured a cumulative total of 59 moths as of June 28, which is higher than the nine moths collected by the same time last year. The appearance of moths indicates that the annual flight is accelerating in the southern half of the state and close inspection of corn plants for egg masses and small larvae should start in the next two weeks, as fields enter the late-whorl and pre-tassel stages. The eggs are deposited on the upper surface of the top 3-4 leaves, often on the flag leaf, and the larvae can be found in developing tassels.



Western bean cutworm egg mass

Krista Hamilton DATCP

Considering the variability in corn development this year, female moths should have no difficulty finding corn in an optimal stage for oviposition, which could lead to more widespread problems than in recent years. An economic threshold of 5% of plants infested for field corn and 4% for processing sweet corn has been established by the University of Wisconsin. Insecticide treatments applied at 90-95% tassel emergence are most effective.

**EUROPEAN CORN BORER:** Early whorl feeding was observed in 23% (14 of 61) of the V7-V11 fields sampled this week. Infestations were common but mostly light, ranging from 1-7%, with three exceptional fields in Marquette and Sauk counties found to have 21-24% of plants infested. Larvae varied in development from first to third-instar and a few had begun boring into the midribs of corn leaves. The treatment window is expected to close over the weekend of July 1-2 in the south-central and

southwestern counties and will remain open only until about July 9 in the southeastern and central areas. Scouting and management decisions made in the week ahead will be most effective against first-generation corn borers.



Second-instar European corn borer larva

Krista Hamilton DATCP

**TRUE ARMYWORM:** Light defoliation has been noted in about 26% (31 of 125) of cornfields surveyed by DATCP this month. Larval infestations at these sites have usually involved fewer than 10% of the plants, although reports of economic infestations have been received from several counties, including a few fields in Fond du Lac County that required more than one insecticide treatment to bring under control. Conditions are still very favorable for armyworms after the recent rains, and the significant flight of 113 moths registered in the Janesville trap this week suggests that the second generation of caterpillars should begin emerging soon. Continued inspection of corn and small grains throughout July is recommended.



True armyworm leaf feeding

Krista Hamilton DATCP

**CORN EARWORM:** Moths from an early migration were caught in the Arlington pheromone trap last week and near Janesville this week. Numbers were very low at only two per trap, but the capture of even a few migrants indicates that a flight into Wisconsin has occurred. Larvae could begin infesting sweet corn by mid-July.

## SOYBEANS

**DEFOLIATORS:** Leaf feeding by rose chafers, bean leaf beetles, Japanese beetles, sand chafers, and slugs has been common in soybeans this month, though defoliation is light, ranging from 5-15% on no more than 20% of plants in most fields. Damage rates have not exceeded the 30% economic threshold for soybeans in the pre-bloom (prior to R1) stages as of June 29 and control has not been warranted for any field surveyed by DATCP.



Sand chafer

Krista Hamilton DATCP

**SOYBEAN APHID:** Densities have not increased substantially since aphids were first observed on June 5. Counts averaged less than one aphid per plant in 30% of the fields surveyed this week, and the other 70% had no detectable aphid population. Aphid colonies are currently more prevalent in western Wisconsin soybeans than in the southern and eastern areas. Routine monitoring should begin by the second week of July or once fields reach the R1 (first flower) development stage.

## FRUITS

**CODLING MOTH:** The first flight has declined in most locations. The weekly average count based on reports

from 24 orchards was only two moths per trap, compared to six per trap last week. Apple growers should continue to monitor late flights, and apply treatments as needed, until 700 degree days (modified base 50°F) have accrued from the spring biofix. Orchards near Brodhead, Madison and La Crosse have accumulated about 650 degree days since May 20 when the biofix was recorded at a few warmer southern sites.



Codling moth entries

Shawn Steffan Utah State Extension

**JAPANESE BEETLE:** Numbers are increasing in fruit and field crops over much of the state. Neem-based products that contain azadirachtin (e.g., BioNeem) are still effective in northern and central locations where beetle populations are low and the first adults are just starting to move into vineyards and orchards. These materials can be used to deter beetles for 3-4 days before reapplication is needed. Products sold as "neem oil" that do not list azadirachtin on the label are not effective against Japanese beetle.



Japanese beetles on apple

pallensmith.com

**SPOTTED TENTIFORM LEAFMINER:** Mines created by second-generation sapfeeder larvae are appearing on the undersides of apple leaves in the southern half of the state. Orchardists concerned about this pest should apply controls before larvae advance to the tissue-feeder stage (visible on the upper leaf surfaces), about 10-14 days after a peak flight has occurred. The treatment threshold is one mine per leaf based on sampling of 10 terminals and fruit spurs per tree on 2-3 trees per orchard block. Trap counts should begin to decline over the next two weeks, signaling the end of the second moth flight.

**SAN JOSE SCALE:** First-generation nymphs or crawlers began emerging in southern Wisconsin orchards three weeks ago, and have now settled onto the fruits and leaves. Continued sampling by taping scaffold branches is advised to confirm that nymph activity is complete. Neonicotinoids, insect growth regulators or other materials directed against mobile crawlers are ineffective once the scales have begun to secrete their waxy covering.



San Jose scale yellow crawlers and white caps Jack Kelly Clark UC IPM

**POTATO LEAFHOPPER:** The near-threshold populations common in alfalfa could translate into fruit tree damage as harvesting of second-crop hay increases next month. Non-bearing, 1- to 2-year-old trees are most susceptible to leafhopper feeding and should be monitored for leaf cupping and yellowing of terminal shoots. Treatment is justified at levels of one or more nymphs per leaf.

## VEGETABLES

**TOMATO HORNWORM:** Moths have begun laying eggs on the undersides of tomato leaves in southwestern

Wisconsin. Tomato growers who have experienced past problems with this pest should inspect plants for the smooth, spherical, pale green eggs deposited individually on the undersides of leaves. Once the eggs hatch, the larvae grow rapidly and can quickly defoliate plants. Spot treatment may be considered for infestations of one or more larvae per plant on a minimum of 10 plants. Prompt removal of the larvae is the preferred control measure.



Tomato hornworm larva

[braddock outdoor.blogspot.com](http://braddockoutdoor.blogspot.com)

**ONION MAGGOT:** Emergence of second-generation flies is anticipated near Madison, La Crosse, Spring Green and other advanced southern location in the week ahead. Management of the summer generation is less critical than spring and fall populations since egg desiccation and mortality rates are higher at warmer temperatures, but season-long sanitation is still important for preventing future infestations. Second-brood eggs are deposited near previously-damaged onions.

**SQUASH VINE BORER:** Continued inspection of pumpkins, squash, gourds, and other vine crops for eggs and evidence of larval feeding is advised during the next two weeks. The early- and intermediate-stage larvae have started boring into squash stems and runner vines, causing plants to wilt. Insecticidal controls are only useful if applied before the larvae tunnel into vines, and reapplication is usually necessary during the adult flight period. Squash varieties most susceptible to infestation are 'Blue Hubbard', 'Boston Marrow' and 'Golden Delicious,' while 'Butternut', 'Dickenson pumpkin' and 'Green Striped Cushaw' have shown some resistance or tolerance.

**FOUR-LINED PLANT BUG:** Gardeners, nursery managers and vegetable growers are reporting considerable

damage to vegetables, fruits, ornamentals and perennials. In most instances, four-lined plant bug feeding only affects the appearance of plants, though moderate to large populations of four-lined plant bugs can be destructive, especially to herbs. The aesthetic damage should be tolerated or ignored when possible. Contact residual insecticides are effective against plant bugs, but these broad-spectrum products also kill non-target insects and natural enemies and the pre-harvest interval may not be acceptable for herbs or other edible plants.



Four-lined plant bugs

Jeff Hahn UMN Extension

**COLORADO POTATO BEETLE:** The summer generation of beetles is expected to begin appearing in potatoes by mid-July. Pupation occurs in 7-10 days at this time of year and larval development proceeds much faster under normal July temperatures. Conversely, cool weather slows CPB feeding activity and development. Both the summer adults and second-generation larvae are considered damaging.

**SQUASH BUG:** Adults are appearing on cucurbits in home gardens, and populations are expected to increase sharply by mid-July with the addition of many small nymphs. Insecticide options for commercial plantings include synthetic pyrethroids (e.g. Brigade, Mustang, Pounce, Warrior, etc.) or neonicotinoids (Assail, Belay, Scorpion and Endigo). Organic growers should use directed applications of pyrethrum (PyGanic) or the pre-mix with azadirachtin (Azera). An average of one egg mass per plant when plants are flowering is recommended as the basis for initiating treatment. For gardens, soapy water or carbaryl treatment provides some control but more than one application is often required.

## NURSERY & FOREST

**MAGNOLIA SCALE:** Nymphs are maturing, and their white mealy wax is appearing on the branches of infested magnolias in southeastern Wisconsin. As the wax fades in August, the elliptical, shiny brown adult females will become noticeable. Nursery managers and residents are advised to inspect magnolias now and plan to spray heavily-infested trees in late August or early September, following with a second treatment 10 to 14 days later. Proper timing of the application is critical as only the young crawlers are easily controlled. Products containing bifenthrin, carbaryl, cyfluthrin, horticultural oil, insecticidal soap, malathion, or permethrin are appropriate for use in late summer.



Magnolia scale

Marcia Wensing DATCP

**HOLLYHOCK RUST:** Nursery inspectors report that this disease is evident on hollyhock plants in La Crosse County and throughout the state. Symptoms include conspicuous yellow pinspots on the upper surface of leaves that correspond with orange-brown rust pustules on leaf undersides. Rust symptoms spread rapidly under favorably wet conditions and increase in severity as the season progresses, killing most foliage on infected plants by late summer. In severe cases, the fungus enters the stem and kills the plant. The flowers are generally not affected.

Control involves removing symptomatic leaves in spring as soon as they are observed. Older infected plants should be cut down and burned once flowering is complete. Round-leaf mallow, a common weed, can harbor

the fungus, so thorough weeding may be helpful. Fungicides are also available for control. Spraying should begin at the first sign of disease and continue at recommended intervals.



*Hollyhock rust*

Timothy Allen DATCP

**XANTHOMONAS ON HYDRANGEA:** This bacterial leaf spot disease has been diagnosed on hydrangeas from a Sawyer County nursery. *Xanthomonas* is favored by warm, wet conditions and overwinters in infected plant debris, spreading to new growth by rain splash or overhead irrigation. Classic signs of the disease are dark, angular leaf spots that coalesce and may kill mature leaves. Recommended controls include removal and destruction of infected leaves and debris, avoiding pruning during wet periods, and sterilizing tools between cuts.



*Xanthomonas campestris* on hydrangea

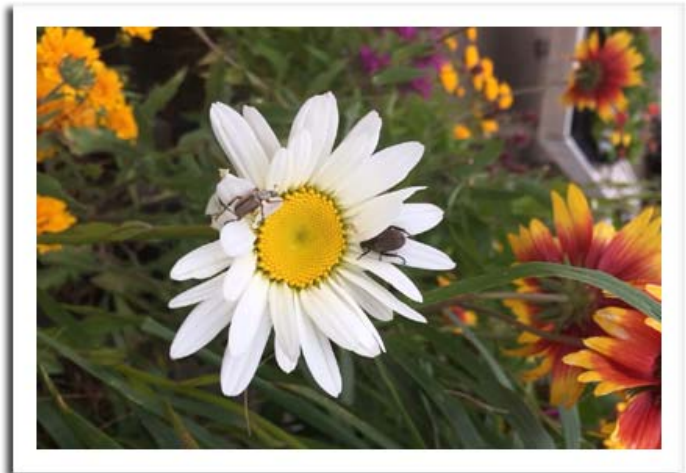
Timothy Allen DATCP

**COLUMBINE SAWFLY:** Larvae were observed feeding on columbine plants at a nursery in Chippewa County.

Left unchecked, these caterpillar-like insects that become non-stinging wasps (not moths or butterflies) can defoliate entire plants, leaving only the leaf midveins. The green larvae feed in May and June and complete just one generation per year, so scouting beyond June is unnecessary. Manual removal of the larvae is suggested for minor infestations. Insecticidal soap or a number of garden insecticides also control larval sawflies.

**PEAR SCAB:** Symptoms of this common pear disease have been noted on pear trees as far north as Ashland County. The initially small leaf lesions enlarge, coalesce, and spread to fruits, resulting in spotted, misshapen pears. Scab development is favored by cool, moist conditions and is particularly severe during wet seasons.

**ROSE CHAFER:** Beetles have been a common problem in nurseries this month, with light to moderate leaf skeletonization and damage to the shoot tips of trees observed by inspectors from Kenosha to Eau Claire County. Chafer populations are especially high in areas of the state with sandy soils. The adult beetles are only active for about 3-4 weeks in June and should soon disappear for the season.



*Rose chafers* on 'Shasta' daisy

Konnie Jerabek DATCP

## APPLE INSECT & BLACK LIGHT TRAP COUNTS JUNE 22 - 28

COUNTY	SITE	STLM <sup>1</sup>	RBLR <sup>2</sup>	CM <sup>3</sup>	OBLR <sup>4</sup>	OFM <sup>5</sup>	LPTB <sup>6</sup>	DWB <sup>7</sup>	AM RED <sup>8</sup>	YELLOW <sup>9</sup>
Bayfield	Keystone	0	2	7	2	6	4	—		
Bayfield	Orienta	4	0	0	0	0	0	0		
Brown	Oneida	975	8	1	2	0	4	5		
Columbia	Rio	50	15	1	5	0	13	0	0	**0
Crawford	Gays Mills	311	25	1	6	—	30	3		
Dane	DeForest	—	—	—	—	—	—	—		
Dane	Mt. Horeb	125	23	2	11	0	5	0		
Dane	Stoughton	57	24	7	7	0	6	—	0	**0
Fond du Lac	Campbellsport	31	0	0	0	0	2	0		
Fond du Lac	Malone	120	7	4	20	0	3	2		
Fond du Lac	Rosendale	—	—	—	—	—	—	—		
Grant	Sinsinawa	—	—	—	—	—	—	—		
Green	Brodhead	0	9	0	1	1	—	—		
Iowa	Mineral Point	1263	64	1	8	0	6	0	—	**0
Jackson	Hixton	22	2	1	11	0	9	—		
Kenosha	Burlington	115	10	2	4	4	16	6		
Marathon	Edgar	—	—	—	—	—	—	—		
Maárinette	Niagara	33	0	0	6	—	5	—		
Marquette	Montello	405	51	0	13	0	0	—		
Ozaukee	Mequon	110	6	3	3	0	2	—		
Pierce	Beldenville	—	—	—	—	—	—	—		
Pierce	Spring Valley	231	0	0	6	0	14	5		
Racine	Raymond	18	32	7	17	19	0	—		
Racine	Rochester	272	112	3	13	2	0	3	*0	**0
Richland	Hill Point	166	30	1	4	0	22	0	**0	**0
Sheboygan	Plymouth	414	0	3	14	8	10	1	**0	**0
Walworth	East Troy	21	4	0	9	0	0	—		
Walworth	Elkhorn	20	30	0	23	0	0	0		
Waukesha	New Berlin	25	4	2	0	2	15	—		

<sup>1</sup>Spotted tentiform leafminer; <sup>2</sup>Redbanded leafroller; <sup>3</sup>Codling moth; <sup>4</sup>Obliquebanded leafroller; <sup>5</sup>Oriental fruit moth; <sup>6</sup>Lesser peachtree borer; <sup>7</sup>Dogwood borer; <sup>8</sup>Apple maggot red ball; \*Unbaited; \*\*Baited; <sup>9</sup>Apple maggot yellow board.

COUNTY	SITE	BCW <sup>1</sup>	CEL <sup>2</sup>	CE <sup>3</sup>	DCW <sup>4</sup>	ECB <sup>5</sup>	FORL <sup>6</sup>	SCW <sup>7</sup>	TA <sup>8</sup>	VCW <sup>9</sup>	WBC <sup>10</sup>
Columbia	Arlington	0	1	0	0	0	0	0	2	0	0
Columbia	Pardeeville	0	2	0	2	3	3	2	8	0	0
Dodge	Beaver Dam	0	1	0	1	0	0	1	6	0	2
Fond du Lac	Ripon	0	1	0	0	0	0	1	19	0	4
Grant	Prairie du Chien	0	0	0	0	0	1	0	0	0	0
Manitowoc	Manitowoc	0	0	0	0	0	0	5	0	0	0
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	1	0	0	0	0	1	1	113	0	0
Walworth	East Troy	0	0	0	0	0	2	0	1	0	0
Wood	Marshfield	0	6	1	0	1	0	2	12	0	0

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