

# 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 boosted crop development throughout Wisconsin. High temperatures during the week rose to the upper 90s in several locations, with lows ranging from the 50s to 70s. Heat index values on June 29 and 30 increased to around 100-110°F for central and southern Wisconsin, before a cold front on July 1 provided some relief. Harvest of second crop alfalfa continued across the state with most growers reporting excellent quality and yields. Crop conditions for corn and soybeans were rated as 84% and 83% good to excellent at the start of the week, although surplus rain and damage from recent storms have caused conditions in some areas to deteriorate. Soybeans in particular are developing rapidly this season and 13% of the state's crop has now bloomed, three days ahead of last year and four days ahead of the 5-year average.

## LOOKING AHEAD

**WESTERN BEAN CUTWORM:** The annual flight began three weeks ago, though only six moths have been collected in two of DATCP's 54 survey traps as of July 5. The moths were reported from Fond du Lac and La Crosse counties. An improved UNL-UMN model for predicting western bean cutworm activity indicates that 25% of the moth population should emerge during the period of

July 8-14 in southern Wisconsin and the following week in the central counties. The model uses simple degree-day calculations beginning March 1, with a 38°F lower threshold and a 75°F upper threshold, and estimates 25% emergence around 2,577 degree days. Routine scouting of corn plants for egg masses and small larvae should start once fields enter the late-whorl and pre-tassel stages. If control is warranted, insecticide treatments applied at 90-95% tassel emergence are most effective.

**LATE BLIGHT:** Disease severity value (DSV) accumulations near Grand Marsh, Hancock and Plover have exceeded the late blight risk threshold triggering preventative fungicide application. UW-Extension Vegetable Plant Pathologist Dr. Amanda Gevens recommends that treatments to limit initial late blight infection begin at this time for early and mid-potato plantings from Plover southward. As of July 5, no late blight has been detected in the state.

**EUROPEAN CORN BORER:** Pupation of first generation corn borers is expected to start in advanced southern locations next week. Surveys indicate that larvae from the spring flight are presently in the second to fifth instars. The treatment window for first generation larvae has closed statewide, with the exception of the far northern closed.

**LILY LEAF BEETLE:** UW-Madison Extension Entomologist PJ Liesch confirms that larvae of the lily leaf beetle have

been found in western Shawano County, about 30 miles east of Wausau. According to his report, the larvae were causing significant damage to lilies at a residence near Wittenberg. An adult beetle had been spotted at the same site earlier in spring. Gardeners and UWEX agents in neighboring Waupaca County are advised to be on the lookout for the bright red beetles and their larvae.



Lily leaf beetle

Warrener flickr.com

**APPLE MAGGOT:** Adult flies were captured on orchard traps for the second consecutive week, signaling the start of the adult emergence period. Close monitoring of red sphere and yellow sticky traps is recommended, particularly for orchards impacted by recent heavy rain. Maintenance of traps will be important as oviposition on apples increases in late July and early August.

## FORAGES & GRAINS

**POTATO LEAFHOPPER:** Counts in alfalfa are increasing but remain below established economic thresholds. Surveys conducted in Adams, Dodge, Fond du Lac, Green Lake, Marathon, Marquette, Portage and Wood counties found a range of 0.1-1.0 adult and nymph per sweep and an average of 0.4 per sweep. Nymphs are appearing in more fields, indicating a potential for populations to increase this month.

**PEA APHID:** Sweep net counts in fields surveyed in the central and north-central counties ranged widely from 1-31 per sweep, with an average of 18 per sweep. These levels are considered high for late June.

**ALFALFA WEEVIL:** Pupation has begun as far north as Marathon County and feeding should subside next week.

## DEGREE DAYS JANUARY 1 - JULY 4

LOCATION	50°F	2017	NORM	40°F
Dubuque, IA	1445	1363	1224	2294
Lone Rock	1285	1204	—	2096
Beloit	1257	1241	1239	2060
Sullivan	1156	1129	1155	1916
Madison	1240	1188	1179	2033
Juneau	1183	1109	—	1940
Racine	1034	1078	—	1771
Waukesha	1080	1086	—	1821
Milwaukee	1069	1064	1043	1815
Hartford	1130	1067	—	1878
Appleton	1168	1028	—	1887
Green Bay	1126	997	1020	1838
Big Flats	1205	1089	—	1957
Hancock	1113	999	1149	1819
Port Edwards	1123	987	1118	1836
La Crosse	1357	1210	1296	2161
Eau Claire	1274	1090	1156	2011
Cumberland	1053	822	1057	1719
Bayfield	815	600	—	1414
Wausau	1028	854	1036	1705
Medford	1014	815	940	1683
Crivitz	1070	906	—	1741
Crandon	969	735	814	1612

*Method: Modified B50; Modified B40 as of January 1, 2018. NORMALS based on 30-year average daily temps, 1981-2010.*

Larval populations in the central and northern areas have declined to low levels in the past two weeks, with 1-4 weevils per 100 sweeps being the typical count.

**PLANT BUG:** Combined averages of the alfalfa and tarnished plant bugs varied from 0.1-1.6 per sweep and averaged 0.5 per sweep. This represents a minor increase from last week's observations. Once again, the economic threshold for this pest (adults and nymphs) is 5.0 per sweep.

## CORN

**CORN ROOTWORM:** Beetle emergence is beginning in southwestern Wisconsin. These insects will become increasingly abundant throughout July, with peak emergence anticipated around mid-August. Last year's historically low beetle counts indicate that overall beetle pressure could be down this season, although individual fields with root damage should still be expected. The 2017 state

average of 0.2 beetle per plant was the lowest in 47 years of annual surveys.

**EUROPEAN CORN BORER:** Larval infestation rates are generally less than 10% in surveyed fields. Corn borer caterpillars range in development from second to fifth instar, with the third instar being the most prevalent stage. Approximately 20% of the cornfields sampled from June 28-July 4 had signs of ECB infestation.



*Fifth-instar European corn borer larva*

*Krista Hamilton DATCP*

**TRUE ARMYWORM:** The significant flight of 309 moths reported from Janesville during the previous two weeks declined to 35 this week, but continued scouting of corn and wheat is recommended. Small larvae ranging from ¼-½ inch are appearing in alfalfa sweep net collections and localized armyworm problems often develop in at least a few scattered corn and wheat fields in July.



*True armyworm moth*

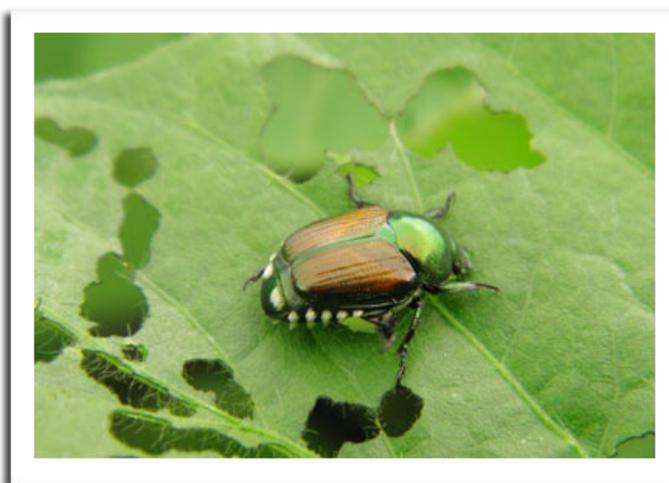
*Krista Hamilton DATCP*

**STALK BORER:** Surveys of V9- VT corn found infestation rates of 1-11%, with the highest population noted in Dane

County. Treatment is no longer an option for many southern and western Wisconsin fields since the larvae have bored into the stalks and unemerged tassels. Treatments must be applied from 1,400-1,700 degree days (base 41°F), or prior to the V7 stage. Stalk borer feeding is unlikely to kill individual corn plants beyond V7.

## SOYBEANS

**DEFOLIATORS:** Defoliation is common but light in surveyed fields, usually affecting 2-10% of plants. The leaf feeding insects observed during recent surveys were the rose chafer, bean leaf beetle, Japanese beetle, sand chafer, slugs and various caterpillars (including hitched arches larvae and the silver-spotted skipper caterpillar). Defoliation rates have not exceeded the 20% economic threshold for soybeans in the bloom stages as of July 5.



*Japanese beetle*

*Krista Hamilton DATCP*

**SOYBEAN APHID:** Levels of this insect remain well below the economic threshold of 250 aphids per plant and 71% of the 49 soybean fields surveyed in the past two weeks still had no detectable populations. Average counts at the sites sampled from June 21-July 4 were less than one aphid per plant and seven per infested plant, based upon examination of 100 plants per field. The highest total count was only 41 aphids on 15 of 100 plants (three aphids per infested plant) in a Fond du Lac County field.

Despite the low sample numbers, aphid populations could increase rapidly in flowering soybean fields and economic densities may develop later this month. This pest requires consistent monitoring from now until the R5.5 stage of soybean growth in August.

## FRUITS

**APPLE MAGGOT:** Emergence of adults began last week, with captures of 1-2 flies reported from cooperating orchards in Brown, Dane and Fond du Lac counties. Counts for the period of June 28-July 4 were similar at 1-2 flies per trap in four of 14 reporting orchards. Apple maggot traps should be cleaned of non-target flies periodically and recoated with insect sticky trap material as needed.



Apple maggot yellow sticky trap

omafra.gov.on.ca

**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.

**POTATO LEAFHOPPER:** Rising populations in alfalfa fields could translate into fruit tree damage as harvesting of second-crop hay increases. Non-bearing, one- to two-year-old trees are most susceptible to leafhopper feeding and should be monitored for upwards leaf cupping and yellowing of terminal shoots. Treatment is justified at levels of one or more nymphs per leaf when hopperburn symptoms are developing.

**SPOTTED TENTIFORM LEAFMINER:** The second flight should peak soon at most monitoring sites. 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 his-

tory of infestation may consider treatment of second generation larvae to reduce build-up of leafminers before the third flight begins in August.



Spotted tentiform leafminer mine Tomasz Binkiewicz [www.lepidoptera.eu](http://www.lepidoptera.eu)

**GRAPE BERRY MOTH:** Female moths will soon begin laying second-generation eggs in southern and western Wisconsin vineyards. Scouting for infested fruits and other signs of GBM, particularly in border rows adjacent to wooded areas in the vineyard, is advised. Treatment of perimeter rows, if warranted, usually provides satisfactory control of this pest. The use of pheromone traps to monitor GBM flights and properly time controls is also strongly recommended.



Grapes infested with grape berry moth larvae Krista Hamilton DATCP

**OBLIQUEBANDED LEAFROLLER:** Developing fruits should be inspected for larval hatch and feeding injury by the first generation of leafrollers. Larvae require either fruit or foliage, and have begun to feed on available fruits in southern and southwestern orchards. Effective control of

the first generation at this time will minimize injury and reduce the size of the later generation in August and September. Treatment is justifiable when 3% of terminals are infested (based upon examination of 5 growing points per tree in at least 10 widely separated trees).

## VEGETABLES

**SQUASH BUG:** Adults are appearing on cucurbits in home gardens, and populations generally increase sharply by mid-July with the addition of many small nymphs. An average of one egg mass per plant when plants are flowering is recommended as the basis for initiating treatment.



Squash bug adult female

Krista Hamilton DATCP

For gardens, hand picking and destroying the bugs and their eggs is most effective. Another option is to place cardboard or newspaper on the ground next to the plants. At night the squash bugs will aggregate beneath the cardboard and can be destroyed in the morning. Organic growers may use directed applications of pyrethrum (PyGanic) or the pre-mix with azadirachtin (Azera). Growers should be aware that the efficacy of most insecticide materials is reduced at temperatures above 80°F and the smaller nymphs are more easily killed than the adults. Refer to UWEX publication A3422 "Commercial Vegetable Production in Wisconsin" for a list of registered insecticides.

**TOMATO HORNWORM:** Moths have begun laying eggs on the undersides of tomato leaves in southern Wisconsin. Tomato growers who have experienced past problems with this pest should start inspecting plants for the smooth, spherical, pale green eggs deposited individually on the undersides of leaves. Once the eggs hatch, the lar-

vae grow rapidly and can quickly defoliate plants. Prompt removal of the larvae is the best control measure.



Tomato hornworm larva

braddock outdoor.bloggng.com

**ONION MAGGOT:** Second generation flies are emerging near Madison, La Crosse, Spring Green and other locations where 1,950 GDD (simple base 40°F) have been surpassed. Emergence is anticipated near Fond du Lac, Eau Claire and Hancock 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.

## NURSERY & FOREST

**HEMLOCK TWIG RUST:** Eastern hemlock nursery stock lightly infected with hemlock twig rust (*Melampsora farlowii*) was observed recently at a nursery dealer in Sawyer County. The disease can be damaging in nursery settings where it causes premature needle drop and shoot death. Fallen needles will later produce spores that can reinfect plants and perpetuate the disease cycle. Treatment and sanitation are recommended for production areas, though the disease is not common in naturalized hemlocks.

**PEAR LEAF BLISTER MITE:** Feeding damage caused by this eriophyid mite was noticed on 'Parker' and 'Lucious' pears at nurseries in Polk County. These tiny mites feeding under the bud scales can cause leaf distortion and damage to fruits. In young pear trees, the damage may be significant enough to warrant treatment, although control is difficult since feeding occurs inside the leaf.

The optimal treatment window is early just as the flower petals fall in the spring and in the fall when the mites emerge to feed under outer scales of the leaf buds over the winter. Mite damage is generally less apparent on pear cultivars with a russeted fruit skin texture.



Pear leaf blister mite damage

Timothy Allen DATCP

'BLUE DUNE' LYME GRASS: The broad, blue leaf blades of 'Blue Dune' lyme grass (*Leymus arenarius*) are easily spotted among ornamental grass species. This grass is a "prohibited" species under the DNR Chapter NR 40 Invasive Species Rule, and as such cannot be possessed, sold, traded or shared in western Wisconsin. For the far eastern portion of the state, from Door County to Kenosha, this plant is "restricted," which means it cannot be sold, shared or traded in those counties.



Invasive blue lyme grass (in background)

Konnie Jerabek DATCP

Nursery inspectors are required to order the removal and destruction of this grass when it is encountered. Some of Wisconsin's neighboring states have different restrictions

regarding invasive plants, so it is important for nursery operators to regularly review the regulated species lists: <https://dnr.wi.gov/topic/Invasives/documents/NR40plantlist.pdf>

**GRAPE PHYLLOXERA:** Galls were evident on the underside of grape leaves of assorted cultivars, including "King of the North," grape at a nursery dealer in Polk County. This tiny yellow aphid-like insect as an adult phylloxera lays its eggs in the fall under the grape vine bark. In the spring, the eggs hatch and the nymphs move onto newly formed leaves and start feeding and the grape leaf responds by creating a gall around the insect. There can be multiple generations of phylloxera in a season. Most galls are cosmetic damage, but in heavy amounts, you may have reduced vine vigor.



Grape phylloxera galls

Timothy Allen DATCP

## APPLE INSECT & BLACK LIGHT TRAP COUNTS JUNE 28 - JULY 4

COUNTY	SITE	STLM <sup>1</sup>	RBLR <sup>2</sup>	CM <sup>3</sup>	OBLR <sup>4</sup>	DWB <sup>5</sup>	LPTB <sup>6</sup>	BMSB <sup>7</sup>	AM RED <sup>8</sup>	YELLOW <sup>9</sup>
Bayfield	Keystone	11	0	0	0	0	0	0	—	—
Bayfield	Orienta	1	0	0	0	21	12	0	—	—
Brown	Oneida	550	22	14	5	11	8	0	—	—
Columbia	Rio	—	—	—	—	—	—	—	—	0
Crawford	Gays Mills	—	—	—	—	—	—	—	—	—
Dane	DeForest	40	28	0	4	0	9	0	0	0
Dane	Mt. Horeb	64	30	2	28	27	9	0	—	—
Dane	Stoughton	93	72	6	3	8	0	0	—	**2
Fond du Lac	Campbellsport	300	22	0	6	23	16	0	—	—
Fond du Lac	Malone	40	55	8	10	61	17	0	**0	0
Fond du Lac	Rosendale	67	27	4	6	1	3	0	0	**1
Grant	Sinsinawa	—	—	—	—	—	—	—	—	—
Green	Brodhead	—	—	—	—	—	—	—	—	—
Iowa	Mineral Point	—	—	—	—	—	—	—	—	0
Jackson	Hixton	—	—	—	—	—	—	—	—	—
Kenosha	Burlington	400	35	5	6	—	17	0	0	0
Marathon	Edgar	—	—	—	—	—	—	—	0	0
Marinette	Niagara	30	4	0	18	—	20	—	—	—
Marquette	Montello	571	119	0	0	0	7	0	—	—
Ozaukee	Mequon	95	41	7	6	1	1	—	*1	—
Pierce	Beldenville	35	2	0	0	—	0	0	0	**1
Pierce	Spring Valley	104	35	0 <sup>MD</sup>	11	71	42	0	0	0
Racine	Raymond	—	—	—	—	—	—	—	—	—
Racine	Rochester	125	94	12	11	52	0	0	*1	0
Richland	Hill Point	258	109	0	13	10	19	0	—	—
Sheboygan	Plymouth	549	2	0 <sup>MD</sup>	20	2	24	0	**0	0
Walworth	East Troy	—	—	—	—	—	—	—	—	—
Walworth	Elkhorn	—	—	—	—	—	—	—	—	—
Waukesha	New Berlin	—	—	—	—	—	—	—	—	—

<sup>1</sup>Spotted tentiform leafminer; <sup>2</sup>Redbanded leafroller; <sup>3</sup>Codling moth; <sup>4</sup>Obliquebanded leafroller; <sup>5</sup>Lesser peachtree borer; <sup>6</sup>Dogwood borer; <sup>7</sup>Brown marmorated stink bug; <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	Pardeeville	0	7	0	0	45	13	3	15	0	0
Dodge	Beaver Dam	2	5	0	0	9	1	0	4	0	0
Fond du Lac	Ripon	0	0	0	1	46	0	1	11	0	1
Grant	Prairie du Chien	1	1	0	0	0	2	0	0	0	0
Manitowoc	Manitowoc	0	2	0	0	0	4	6	6	0	0
Marathon	Wausau	0	2	0	0	5	4	73	8	0	1
Monroe	Sparta	0	0	0	0	36	1	0	0	0	0
Rock	Janesville	0	12	0	0	0	10	0	35	2	0
Walworth	East Troy	—	—	—	—	—	—	—	—	—	—
Wood	Marshfield	2	5	0	2	0	5	8	6	2	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.