

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

An extended period of dry, warm weather maintained favorable conditions for summer crop development in Wisconsin. Temperatures were near normal for late July, with highs in the 70s and 80s and lows ranging from the upper 40s to upper 60s. Aside from weekend storms, calm conditions prevailed throughout the week. The sunshine and drier weather allowed harvesting of winter wheat and third-crop alfalfa to gain momentum, though progress for both crops remained 9 and 12 days behind average, respectively, at the start of the week. Corn silking advanced 18 points during the previous week, but only 28% of this year's very late planted crop has reached the R1 stage, compared to 73% at the same time last year and a 5-year average of 63%. The latest USDA NASS report indicates that crop condition ratings have improved slightly, but many fields are now becoming dry and could benefit from timely rain.

LOOKING AHEAD

EUROPEAN CORN BORER: The treatment window for second-generation larvae has opened across southern and portions of central Wisconsin with the accumulation of 1,550 degree days (modified base 50°F). Susceptible corn should be inspected in the week ahead for egg masses and small larvae. Chemical control directed

against early-instar corn borers will remain an option until 2,100 degree days have been reached.

SOYBEAN APHID: Monitoring is especially critical as more fields enter the reproductive stages. DATCP surveys indicate average densities are low at fewer than 10 aphids per plant, though aphid pressure usually intensifies at this time of year, and individual fields could require treatment by mid-month. Control is not recommended until soybean fields have been thoroughly sampled to determine if the established threshold of 250 aphids per plant on 80% of the plants has been exceeded.

LILY LEAF BEETLE: This invasive pest was confirmed earlier this week in Dane and Door counties, according to UW-Madison Entomologist PJ Liesch. The lily leaf beetle (LLB) was first identified in Wisconsin in 2014 and has now been found in 10 counties, including Dane, Door, Langlade, Lincoln, Marathon, Oneida, Portage, Shawano, Taylor and Wood. The two newly added counties represent a significant expansion in the distribution of LLB in the state.

WESTERN BEAN CUTWORM: Moth emergence has peaked at most southern and central monitoring sites. The cumulative state total count as of July 31 is 1,432 moths in 57 pheromone traps, with 1,118 of those (78%) appearing this week. Preliminary results of the 2019 annual trapping survey are summarized on page 113.



JAPANESE BEETLE: Reports suggest that significant damage is occurring in many apple orchards, nurseries and vineyards. Continued weekly scouting is advised throughout August for apples, corn, grapes, soybeans, and all other susceptible crops, as long as the beetles are present.



Japanese beetles

Krista Hamilton DATCP

CORN EARWORM: Migration flights were recorded for the third consecutive week. DATCP’s network of pheromone traps captured 179 moths from July 25-31, with counts recorded at 11 of the 16 sites. The high individual trap count of 57 moths was reported from Ripon in Fond du Lac County. Although counts have not particularly high so far, the consistent arrival of moths since mid-July signals that scouting of silking sweet corn is in order. Trapping network participants are reminded to replace lures on a weekly basis.

FORAGES & GRAINS

POTATO LEAFHOPPER: Populations of this pest have been high throughout July. The monthly average count in 120 alfalfa fields sampled from July 1-31 was 2.04 per sweep, with above-threshold counts (2.0 per sweep in alfalfa taller than 12 inches) recorded at 47% of the sites. Continued monitoring of third-crop alfalfa throughout August is recommended.

PLANT BUG: All fields surveyed in the previous two weeks revealed fewer than 1.6 plant bugs per sweep, which is less than half of the economic threshold of five per sweep. In contrast to the potato leafhopper, plant bug populations in alfalfa have been unusually low this season.

DEGREE DAYS JANUARY 1 – JULY 31

LOCATION	50°F	2018	NORM	40°F
Dubuque, IA	1925	2089	1797	3052
Lone Rock	1746	1864	—	2822
Beloit	1783	1824	1822	2865
Sullivan	1643	1716	1719	2676
Madison	1752	1823	1738	2837
Juneau	1574	1747	—	2587
Racine	1485	1596	—	2500
Waukesha	1608	1643	—	2639
Milwaukee	1547	1651	1618	2570
Hartford	1548	1684	—	2558
Appleton	1536	1767	—	2531
Green Bay	1491	1718	1541	2480
Big Flats	1533	1762	—	2551
Hancock	1470	1639	1685	2466
Port Edwards	1466	1659	1652	2451
La Crosse	1691	1968	1902	2767
Eau Claire	1600	1876	1709	2618
Cumberland	1356	1536	1591	2275
Bayfield	1163	1331	—	2021
Wausau	1287	1500	1557	2193
Medford	1261	1448	1423	2158
Crivitz	1391	1589	—	2326
Crandon	1269	1427	1215	2145

Method: Modified B50; Modified B40 as of January 1, 2019. NORMALS based on 30-year average daily temps, 1981-2010.

PEA APHID: Counts were below 1.5 per sweep in all alfalfa fields recently surveyed in southern and western Wisconsin.

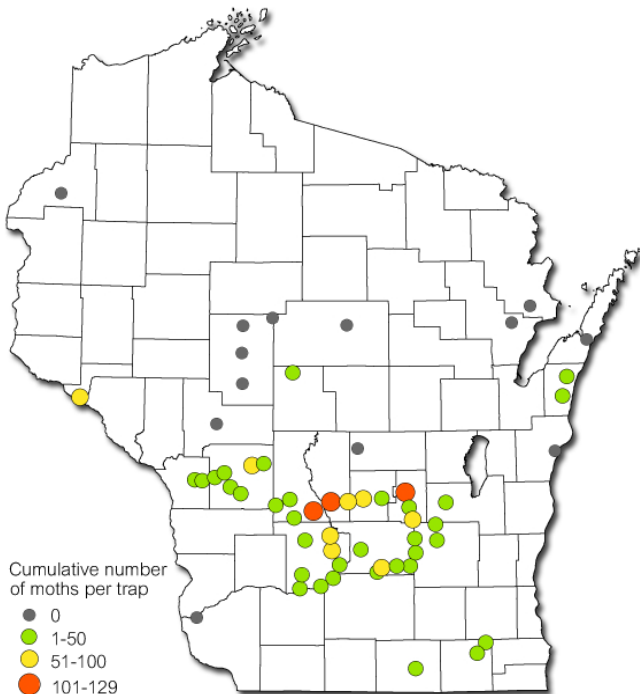
ALFALFA CATERPILLAR: Larvae have become more common in sweep net collections since mid-July. Counts vary from field to field (1-34 per 100 sweeps), but the average is about 10 per 100 sweeps. The adult butterflies are also prevalent, suggesting that an increase in larvae and feeding injury should be anticipated later this month. Significant damage by this insect is rare but can develop if heavy egg laying occurs in recently cut fields and larvae defoliate the regrowth.

CORN

WESTERN BEAN CUTWORM: The western bean cutworm degree day model indicates that 50-75% of the moth population has emerged across southern and central Wisconsin. Emergence is about 25% complete in areas north

of Wausau, where the flight should peak next week. The high count for the period of July 25-31 was 129 moths in the pheromone trap near Princeton in Green Lake County. The cumulative state count to date is 1,432 moths in 57 pheromone traps.

Western Bean Cutworm Counts 2019



Wisconsin Department of Agriculture, Trade and Consumer Protection



EUROPEAN CORN BORER: Moths of the second flight continue to appear in black light traps, signaling that eggs are being deposited on corn and other hosts. Peak summer moth activity will occur across southern and central Wisconsin (areas south of Highway 10) by August 10. Sweet corn and non-Bt field corn should be inspected for egg masses and larvae before 2,100 degree days (modified base 50°F) are surpassed and the treatment window for second generation corn borers closes.

JAPANESE BEETLE: Low to moderate infestations of 1-25 beetles per 100 plants have been observed since early July in Wisconsin corn. The greatest threat to fields at this time of year is when large numbers of beetles converge on the silks, potentially impairing pollination. Control is warranted if populations exceed three beetles per ear when pollination is occurring.

CORN EARWORM: Moth counts increased at most sites this week, with the pheromone traps near Arlington,

Beaver Dam, Bristol, Cottage Grove, Janesville, Madison, Marshfield, Pardeeville, Ripon, Sun Prairie and Watertown registering weekly captures of 1-57 migrants per trap, for a weekly total of 179 moths. Three other monitoring location captured no moths during the week. Protective treatment of sweet corn fields with green silks is recommended once pheromone traps begin registering 5-10 moths per night for three consecutive nights.



Corn earworm larva

Krista Hamilton DATCP

TRUE ARMYWORM: At this time last season, locally heavy populations were being reported in corn, barley and wheat. Armyworm outbreaks occur in an irregular geographical pattern and are difficult to accurately predict, making early detection imperative. No damaging armyworm infestations have been found by DATCP as of August 1. Nevertheless, crop scouts and growers should remain alert in the week ahead for potential problems.

SOYBEANS

SOYBEAN APHID: Observations from the annual aphid survey currently underway suggest populations are increasing but remain low. None of the 63 fields sampled this week had an average count greater than 10 aphids per plant on 100% of the plants. The highest count documented as of July 31 was 8.2 aphids per plant in an Adams County field.

Although surveys indicate populations are low, soybean aphids can reproduce rapidly under the mild, dry weather pattern forecast for early August, with the greatest population growth occurring at temperatures of 70-80°F. Soybean producers are reminded that insecticide treat-

ment is not advised until the threshold of 250 aphids per plant on 80% of the plants throughout the field has been exceeded. Insecticide treatment, if required, is most effective when applied during the R2-R4 (full bloom to full pod) stages.

THISTLE CATERPILLAR: Larvae of the painted lady butterfly, also known as thistle caterpillars, have been observed at low levels in soybean fields throughout July. Large populations develop in some years, but treatment is discouraged since the mortality rates generally are high and the solitary caterpillars, which construct a messy silken web between the leaves, seldom cause significant defoliation. The appearance of pupae this week indicates that the adult butterflies will begin emerging in early August.



Thistle caterpillar pupa

Tracy Schilder DATCP

JAPANESE BEETLE: Light to moderate defoliation is widespread in soybeans, though recent surveys have not found any fields with above-threshold injury. The economic threshold for Japanese beetle and other leaf feeding soybean pests is 20% defoliation between bloom and pod fill. Spot treatment should be considered for fields with the heaviest injury occurring in the margins.

FRUITS

STINK BUG: Counts are increasing in field crops, which suggests that stink bugs are also likely to start invading orchards in greater numbers. Late-instar nymphs and adults of the invasive brown marmorated stink bug were found this week in La Crosse County. Growers should begin inspecting fruits for dimples or dark, irregular circular depressions typical of stink bug feeding, taking note of specific areas in the orchard with multiple depressions

on the same fruit or tree to determine where damage is concentrated.



Brown marmorated stink bug damage

www.carrollcountytimes.com

CODLING MOTH: The summer biofix has been set in most southern and central apple orchards. Regular trap checks should continue in August to determine if the economic threshold of five moths per trap per week is exceeded. The need for treatment of the second larval generation is less consistent than with the first generation, and depends upon the success of spring CM controls and whether pressure is coming from wild trees outside the orchard. Spot treatment is usually an effective approach for managing second-generation larvae.



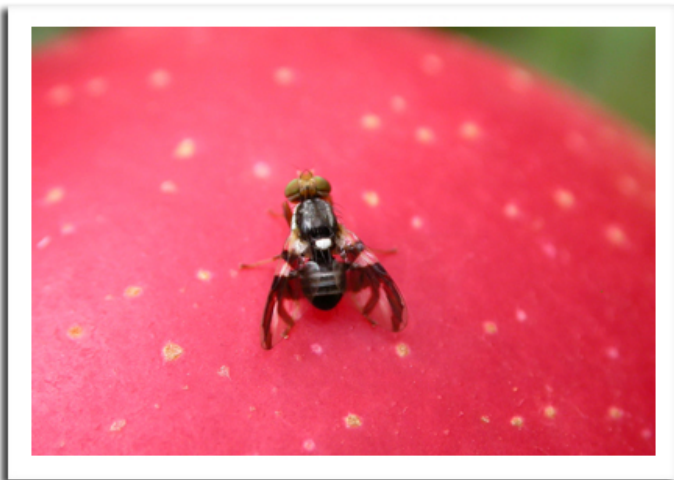
Codling moth frass

www.plante-docktor.dk

JAPANESE BEETLE: Apple orchards in southern and western Wisconsin are reporting heavy beetle populations, with significant damage to foliage and the terminal ends of branches along orchard perimeters. If the beetles are causing unacceptable injury and treatment is required, growers can minimize insecticide use by spot treating

only the most infested varieties. Because sprayed trees can be reinvaded, infested orchard blocks should be inspected weekly as long as beetles are present. Never spray when bees are foraging.

APPLE MAGGOT: Captures of flies on orchard traps remain variable. Most sites reported 1-3 flies per trap this week, though very high counts of seven flies per baited red sphere trap and 15 flies per unbaited red trap were reported from Sheboygan and Racine counties, respectively. Peak adult emergence is approaching, and heavy oviposition on apples can be expected for at least another 2-3 weeks.



Apple maggot fly

ics.ifas.ufl.edu

WHITE APPLE LEAFHOPPER: Second-generation eggs are beginning to hatch. Peak egg laying is expected to occur next week across much of southern Wisconsin with the accumulation of 1,750 degree days (base 48°F). Apple growers who observed damage caused by the first generation several weeks ago should scout for stippling and whitish spots on leaves in the interior of tree canopies. The summer nymphs feed well into September and can cause significant chlorophyll loss. Ordinarily, control should target first-generation nymphs, but if justified, treatments for the second generation are also effective.

VEGETABLES

CABBAGE LOOPER: Significant damage affecting 70-90% of cauliflower and cabbage heads was observed this week on western Wisconsin CSA farms. The larvae found on the plants were in the late development stages and a few pupae were noted. Surveys indicate that populations of this cole crop pest are currently very high, and growers

should be aware that the second larval generation that will appear later this month is usually even more damaging than the first generation. From early heading until harvest, control is justified when 10% of plants are infested to maintain marketability.



Cabbage looper caterpillar

Krista Hamilton DATCP

STRIPED CUCUMBER BEETLE: This insect has been abundant this season. Growers of cucurbits should continue to monitor plants for beetles and signs of bacterial wilt in August. Control is justified for infestations of one beetle per plant in cucumbers and young pumpkins, and five beetles per plant in watermelon and squash.



Striped cucumber beetles

Krista Hamilton DATCP

SQUASH BUG: Vegetable growers are reporting a noticeable increase in squash bug populations on cucumber, summer squash and zucchini in the past week. The simplest control is to remove the bugs (eggs, nymphs, and adults) from plants and submerge the bugs in a bucket of soapy water. Growers are also advised to dis-

pose of all dead foliage and other plant material that can harbor large numbers of nymphs.



Squash bug nymph

Krista Hamilton DATCP

BLOSSOM END ROT: This relatively common garden problem is appearing as tomatoes ripen. The dark, water-soaked spot that starts at the blossom end of the fruit and enlarges around the fruit surface is caused by calcium imbalance and fluctuations in soil moisture. Blossom-end rot is most common when the growing season begins wet and later becomes dry as fruit is setting. Fungicides are not an effective control for this physiological disorder. Maintaining consistent soil moisture levels throughout the growing season is important for reducing its occurrence. During periods of dry weather, watering thoroughly once or twice each week to moisten the soil to a depth of six inches is advised.



Blossom end rot on tomato

Krista Hamilton DATCP

IMPORTED CABBAGEWORM: Pupae and newly-emerged butterflies were very common in all southern and western

Wisconsin vegetable sites surveyed this week. The abundance of butterflies indicates a potential for damaging larval populations in August. Egg deposition on cole crops is expected to intensify next week. Scouting is recommended through harvest.

JAPANESE BEETLE: Surveys of vegetable gardens and farms in Dane, La Crosse, Milwaukee, Pierce and St. Croix counties found beetles on a wide variety of plants, including basil, beans, corn, eggplant, and peppers, to name a few. As is the case for squash bugs and many other garden pests, physical removal is the preferred control option for small gardens and plantings. The best times to handpick beetles are either in the early morning or evening when they are less active. Pheromone traps attract more beetles than they catch and should not be used as a form of control.

NURSERY & FOREST

LEAF SCORCH: Many varieties of nursery plants statewide are exhibiting leaf scorch brought on by the stresses of extended retail display, container compaction, nutrient deficiency, and extreme heat, drought, and over watering. This disorder is characterized by the browning of leaf margins and yellowing or darkening of the tissues between the primary veins. Most affected plants will generally recover once the stress factors have been resolved. However, in retail situations, non-viable ornamental plants and trees that have been reduced beyond reversible levels of physiological damage, have regulated pest or disease infestations, or fail to reach acceptable standards of cleanliness, labeling, and plant quality, must be removed from sales areas.



Leaf scorch

Liz Meils DATCP

PLANT VIRUSES: Plant viruses continue to be a persistent issue reported by inspectors at both grower and dealer locations. Recently, potyvirus was confirmed among the Iris cultivars 'Sweet Iris', 'Earl of Essex', and 'Tennison Ridge' in Dunn and Waukesha counties, in addition to solid green hosta hybrids at an Eau Claire County grower. A sample of the astilbe cultivar 'Fanal' (*Astilbe x arendsii* 'Fanal') from a Waukesha County nursery dealer was diagnosed with a form of Ilar virus, and a hosta hybrid from a Vilas County landscaping business tested positive for hosta virus X (HVX). Samples of the hosta hybrid 'Atlantis' from Polk County were also confirmed with HVX and tomato spotted wilt virus.



Hosta virus X on 'Blue Cadet' hosta

Shanon Hankin DATCP

Plant viruses cannot be directly controlled with chemical products. Depending upon the virus disease, control options for reducing virus transmission may include biological or chemical control of the insect vector(s), preventing viral introductions into uninfected stock, sanitary removal and disposal of infected plant materials, consumer education toward recognizing plant virus symptoms, and industry-wide efforts aimed at virus-resistant breeding and implementation of higher virus-free certification standards. An extensive image gallery of nursery plant virus symptoms compiled by the DATCP Plant Industry Lab can be found at: <https://datcp.wi.gov/Documents/PlantVirusSymptoms.pdf>.

MAPLE LEAF TAR SPOT: Early signs of this normally late-season leaf blight disease of maple were observed this week on Freeman and Norway maples in Oneida and Jackson counties. Symptoms first appear as pale yellow, raised spots on the upper leaf surfaces that later develop into distinctive black, tar-like lesions. Tar spot of maple is usually an aesthetic disorder, but the noticeable leaf le-

sions can affect the marketability of landscape trees. For severe cases that warrant treatment, three fungicide applications are necessary for control: at bud break, when the leaves are half expanded, and when the leaves become fully expanded. Clearing and disposing of all infected leaves in fall is essential where tar spot is a recurring problem.



Tar spot on maple

Tim Boyle DATCP

LILY LEAF BEETLE: UW Entomologist PJ Liesch has confirmed the presence of lily leaf beetle (LLB) in Dane and Door counties. First reported in Marathon County in 2014, LLB has now been detected in 10 Wisconsin counties. The adult beetles are bright red and conspicuous, while the larvae are usually noticed after Asiatic lily leaves become defoliated. Lily leaf beetle feeding damage can be severe and, without intervention, is eventually lethal to plants. Recommended controls include manually removing and killing adults and larvae, scraping eggs from the undersides of leaves, or applying an insecticide labeled for use on ornamentals.



Lily leaf beetle

Timothy Allen DATCP

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 25 - 31

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	DWB ⁵	LPTB ⁶	BMSB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	83	18	0	0	13	2	0	2	*4
Bayfield	Oriente	56	2	0	28	67	4	0	0	*1
Brown	Oneida	100	22	0	0	31	0	0	0	0
Columbia	Rio	—	—	—	—	—	—	—	—	—
Crawford	Gays Mills	289	16	0	0	12	4	—	—	—
Dane	DeForest	—	—	—	—	—	—	—	—	—
Dane	Mt. Horeb	30	85	9	2	1	1	0	0	0
Dane	Stoughton	114	52	10	5	2	0	—	—	—
Fond du Lac	Campbellsport	47	40	0	4	5	0	0	0	0
Fond du Lac	Malone	30	45	9	0	0	0	0	**3	0
Fond du Lac	Rosendale	2	24	1	3	6	0	0	0	0
Grant	Sinsinawa	—	—	—	—	—	—	—	—	—
Green	Brodhead	81	21	2	21	39	2	—	0	0
Iowa	Mineral Point	100	108	37	2	8	0	0	*2	*0
Jackson	Hixton	31	6	2	2	7	0	0	0	1
Kenosha	Burlington	65	65	3	2	82	11	0	1	0
Marathon	Edgar	—	—	—	—	—	—	—	—	—
Marquette	Niagara	105	44	0 ^{MD}	0	3	5	0	0	0
Marquette	Montello	69	26	3	0	18	0	0	0	0
Ozaukee	Mequon	75	30	2	0	9	0	0	1	0
Pierce	Beldenville	250	56	6	0	5	8	0	0	0
Pierce	Spring Valley	35	63	0 ^{MD}	0	48	15	0	*0	0
Racine	Raymond	82	61	6	1	26	3	—	0	0
Racine	Rochester	134	78	13	1	10	0	0	*15	0
Richland	Hill Point	37	50	5	0	20	15	0	**0	**0
Sheboygan	Plymouth	139	0	0 ^{MD}	1	18	0	0	**7	0
Walworth	East Troy	—	—	—	—	—	—	—	—	—
Walworth	Elkhorn	—	—	—	—	—	—	—	—	—
Waukesha	New Berlin	460	41	24	5	2	12	—	0	0

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵Lesser peachtree borer; ⁶Dogwood borer; ⁷Brown marmorated stink bug; ⁸Apple maggot red ball; *Unbaited; **Baited; ⁹Apple maggot yellow board; ^{MD}Mating disruption.

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	3	0	3	0	0	0	3	3	15
Columbia	Pardeeville	0	2	1	0	7	0	0	12	2	17
Dodge	Beaver Dam	0	4	2	0	2	0	0	2	0	9
Fond du Lac	Ripon	0	1	3	3	7	0	0	1	0	4
Grant	Prairie du Chien	1	0	0	1	0	1	0	0	0	0
Manitowoc	Manitowoc	—	—	—	—	—	—	—	—	—	—
Marathon	Wausau	1	1	3	12	10	19	0	6	0	0
Monroe	Sparta	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	1	21	0	0	2	1	0	20	4	4
Walworth	East Troy	0	0	0	1	0	0	0	1	0	29
Wood	Marshfield	1	4	0	2	0	3	0	1	7	8

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