

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

Sweltering heat replaced last week's abnormally cool weather. Temperatures in the upper 80s to near 90°F on July 21 combined with excessive humidity to push heat index values to 100°F, prompting an advisory to be issued for the northwest and west-central areas. A complex of strong to severe thunderstorms provided rain and some relief to the north and southeast, but much of the state remained dry. Showers and storms exited the southeast on Tuesday and cooler, less humid conditions returned for the rest of the week. The brief temperature turnaround promoted rapid development of summer crops, especially corn and soybeans. More than 22% of the state's corn is silking and 10% of the soybean crop is setting pods. Despite the early-week heat, the season is still an average of four days behind last year and nine days behind the 30-year average. The degree day accumulation at Madison was 1,434 on July 23 (modified base 50°F), which compares to 1,499 degree days on the same date last summer and a normal accumulation of 1,567 degree days.

LOOKING AHEAD

WESTERN BEAN CUTWORM: Moth emergence continued for the third week and may have peaked in some south-central and southwestern locations. The

Wisconsin network of 99 pheromone traps registered another 87 moths from July 17-23, for a cumulative total of 137 moths since the flight began on July 2. Counts in black light traps were significantly higher, with the week's highest capture of 275 moths reported from Sparta in Monroe County. Peak flight, or 50% emergence of the population, should occur at approximately 1,422 degree days (modified base 50°F) or by August 1 at most southern and central sites. Moth activity is expected to intensify in the week ahead.

SPOTTED WING DROSOPHILA: Flies have been collected in low numbers in Crawford, Dane, Door, Iowa, La Crosse, Rock, St. Croix and Vernon counties as of July 23, and larval infestations are suspected in Monroe, Sheboygan, Trempealeau and Washington counties. Growers of raspberries and other susceptible small fruits should prepare to implement controls as soon as the flies or larvae are detected on their farms or orchards.

CORN ROOTWORM: Beetles have become slightly more common since the first adults of 2014 were observed on July 9. Peak emergence remains 2-3 weeks away. Corn that has not been pollinated by early August may suffer from silk clipping, reduced pollination and poor kernel set. A threshold of five or more beetles per plant has been specified for fields where the silks have been clipped to less than ½ inch and pollination is incomplete. Scouting should occur before 70% of plants are silking.

CORN EARWORM: Minor flights of 2-15 moths were registered in Dane, Dodge, Fond du Lac, Green Lake and Jefferson counties again this week. Egg deposition on corn silks has increased and is likely to continue throughout August, suggesting that regular scouting and control measures are in order. Sweet corn is susceptible to egg laying as long as green silks are present.

EUROPEAN CORN BORER: The first summer moths are appearing in black light traps at locations where 1,400 degree days (modified base 50°F) have been surpassed. The predominant stages observed in fields this week were fifth instar larvae and pupae in the southern and west-central counties and third and fourth instar larvae elsewhere. The treatment window for first generation larvae has closed statewide, but will reopen for second generation larvae next week in advanced areas of south-central and southwestern Wisconsin.

LILY LEAF BEETLE: A new state record was established on June 25 with the detection of the lily leaf beetle, *Lilioceris lilli*, during a nursery inspection in Marathon County. This is the first report of the lily leaf beetle (LLB) in Wisconsin. Two additional samples from separate sites in Marathon County have been confirmed since early July. Refer to the NURSERY section for more information on this devastating exotic pest of true lilies.



Lily leaf beetle

Nancy Armstrong-Thomson flickr.com

FORAGES & GRAINS

POTATO LEAFHOPPER: Nymph production has intensified. Alfalfa fields surveyed in the southwest, south-central and central counties now contain averages of 0.1-1.3 adult and nymph leafhoppers per sweep, as

DEGREE DAYS JANUARY 1 - JULY 23

LOCATION	50°F	2013	NORM	48°F	40°F
Dubuque, IA	1528	1550	1623	1627	2415
Lone Rock	1508	1503	—	1587	2388
Beloit	1548	1650	1645	1624	2449
Sullivan	1222	1504	1548	1322	2053
Madison	1434	1499	1567	1513	2310
Juneau	1312	1409	—	1421	2155
Racine	1171	1317	—	1289	2024
Waukesha	1222	1352	—	1322	2053
Milwaukee	1169	1287	1439	1276	2002
Hartford	1222	1317	—	1322	2053
Appleton	1213	1310	—	1320	2038
Green Bay	1119	1232	1380	1231	1938
Big Flats	1328	1321	—	1382	2111
Hancock	1328	1331	1520	1382	2111
Port Edwards	1285	1286	1486	1357	2056
La Crosse	1498	1466	1715	1579	2356
Eau Claire	1334	1372	1538	1426	2150
Cumberland	1153	1224	1428	1238	1896
Bayfield	824	868	—	866	1429
Wausau	1121	1190	1395	1213	1863
Medford	1083	1223	1273	1177	1821
Crivitz	1063	1145	—	1158	1814
Crandon	983	1099	1093	1054	1657

Method: ModifiedB50; SineB48; ModifiedB40 as of Jan 1, 2014. NORMALS based on 30-year average daily temps, 1981-2010.

compared to 0.1-0.9 per sweep last week. Reports from northwestern Wisconsin indicate populations there have exceeded the two-leafhopper-per-plant (for 12-inch and taller alfalfa) economic threshold in a few fields, although DATCP surveys have found no economic counts as of July 23. The hot, dry weather this week has favored the increase, and higher populations may develop in the third crop if similar conditions prevail in early August.

PLANT BUG: Counts of this insect vary considerably from field to field, but the average remains very low at 0.3 per sweep. Nymphs in all developmental stages were found in third crop alfalfa sampled this week and these immature plant bugs constitute 25-50% of the population in most fields.

PEA APHID: A typical net sweep in alfalfa in the southern half of the state currently yields only 0.1-0.3 aphids, a pronounced decline from average counts of 5-6 per sweep at the end of June. Limited pea aphid activity has

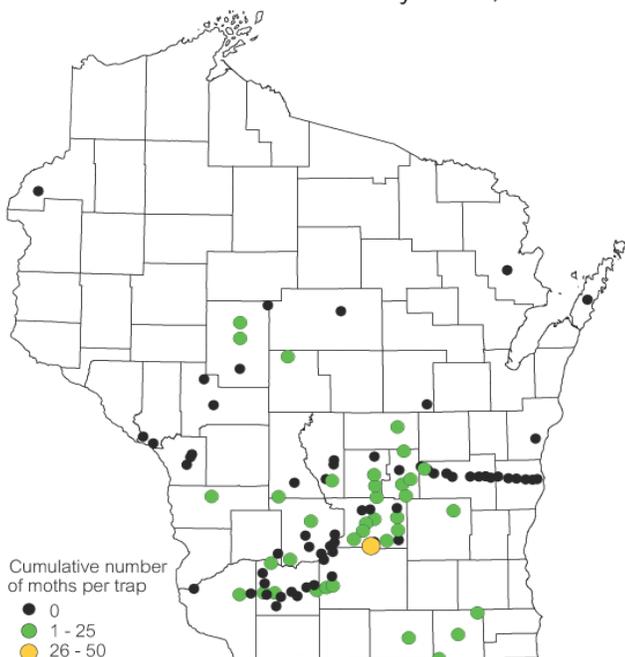
been observed since populations collapsed three weeks ago.

TRUE ARMYWORM: Alfalfa surveyed in the southern and central counties showed low counts of small (1/4-1/2 inch) second generation larvae. Numbers ranged from 1-3 per 10 sweeps. The principal threat from armyworms in alfalfa is when the larvae migrate to other crops as fields are harvested.

CORN

WESTERN BEAN CUTWORM: Most pheromone and black light traps produced few moths this week, with the exception of an anomalous and very high count of 275 moths near Sparta in Monroe County. All other counts were below 16 moths per tap. Peak flight, or 50% adult emergence, should occur over the southern half of the state in the next two weeks. Oviposition on corn and dry beans has been under way since early July and is increasing as the flight accelerates. Treatment may be required for field corn with infestations affecting 8% of the plants at 90-95% tassel emergence. For processing sweet corn, the economic threshold is 4% of plants infested. Cumulative pheromone trap counts as of July 23 are summarized below.

Western Bean Cutworm Trap Counts
July 2-23, 2014



Wisconsin Department of Agriculture, Trade and Consumer Protection



EUROPEAN CORN BORER: The second flight began during the July 17-23 monitoring period, with captures of 6-14 moths reported from the Coon Valley, Mazomanie and Ripon black light trap sites. The appearance of summer moths signals that eggs are being deposited on corn, peppers, potatoes, snap beans and other vegetable hosts. If seasonal temperatures continue, black light traps could register peak emergence during the second week of August in portions of the southern and central districts. The treatment window for second generation larvae extends from 1,550-2,100 degree days (modified base 50°F).

CORN EARWORM: Pheromone traps in Dane, Dodge, Fond du Lac, Green Lake and Jefferson counties registered low counts of 2-15 moths again this week. Black light traps in Monroe and Vernon counties also captured a few migrants. The economic threshold for this pest is 5-10 moths in three consecutive nights for corn and seven moths per trap per week for tomatoes. Counts from July 17-23 were as follows: Coon Valley 0, Cottage Grove 2, Green Lake 8, Janesville 0, Marshfield 0, Mazomanie 0, Oak Grove 15, Ripon 10, Sun Prairie 0, Watertown 3, and Wausau 0.



Corn earworm larva

Mark Moore Moore Communications

SOYBEANS

SOYBEAN APHID: Densities remain very low for this time of year. None of the 81 soybean fields sampled as part of the annual survey that began last week contained an average count above 10 aphids per plant. Natural enemies were very active and abundant at most sites. As a reminder, foliar sprays should not be considered until the established threshold of 250 aphids per plant on 80% of

the plants has been exceeded. Aphid counts have not surpassed this level in any soybean field surveyed by DATCP as of July 23.

JAPANESE BEETLE: Soybeans across the southern half of the state are showing 2-20% of plants with light to moderate leaf injury by a combination of Japanese beetles, bean leaf beetles, grasshoppers, green cloverworms and various caterpillars. Leaf injury by these defoliators should not be allowed to exceed 20% between the bloom and pod-fill stages.

GREEN CLOVERWORM: Larvae are beginning to appear in soybean fields in the southwest and west-central areas. Counts are currently below 4 per 100 sweeps. Those noted in La Crosse and Vernon counties this week were in the early and intermediate instars. Significant populations of this insect are sporadic and were last observed in 2010.



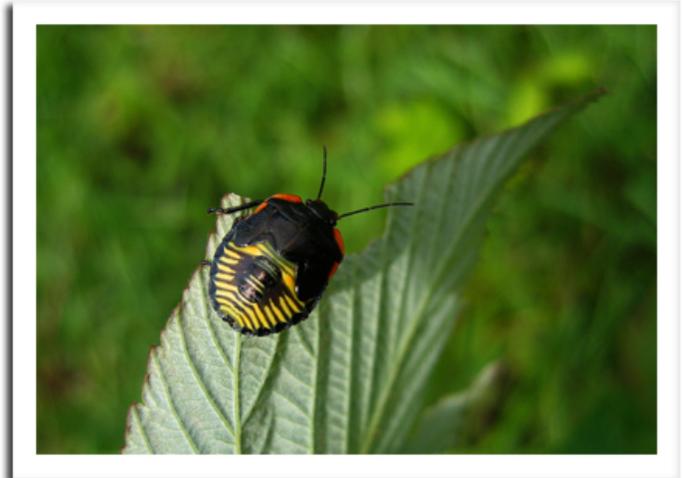
Green cloverworm larva

Krista Hamilton DATCP

FRUITS

CODLING MOTH: Most apple orchards are 1,000 or more degree days (modified base 50°F) beyond the first biofix, and treatment for second generation larvae has started. An increase in moth counts from the spring to summer flight suggests that some degree of fruit injury is probable early next month and fruits should be closely inspected for damage. Apple growers are reminded to rotate insecticides between generations to prevent resistance to chemical materials. Localized larvicide applications are usually an acceptable alternative to orchard-wide treatment for sites with variable larval pressure between cultivars or blocks.

STINK BUG: Adults and nymphs have been observed on the undersides of leaves in west-central Wisconsin apple orchards, signaling the potential for fruit injury prior to harvest. Growers are encouraged to monitor fruits for evidence of feeding by these insects. A single adult or nymph can injure many apples and damage may not develop until after the fruits are in storage.



Green stink bug nymph

Larry552 flickr.com

APPLE MAGGOT: Counts have been low since emergence began four weeks ago and most sites have not reported any flies. The highest weekly total as of July 23 was 15 flies on an unbaited red sphere at Rochester in Racine County. Continued maintenance of traps will be important as harvest approaches in August, particularly for orchards with fruits damaged during recent hailstorms. Baited traps should be concentrated in late summer varieties (i.e., cultivars ripening before Paula Red) for continued monitoring of apple maggot pressure.

POTATO LEAFHOPPER: A Fond du Lac County apple grower reports that populations are heavy in some orchard blocks and associated discoloration of new shoots and mild hopperburn symptoms are appearing. One- to two-year-old, non-bearing apple trees are most susceptible to leafhopper feeding and should be monitored for leaf curling and yellowing caused by the adults and nymphs. Treatment is justified at levels of one or more nymphs per leaf when symptoms are evident.

SPOTTED TENTIFORM LEAFMINER: The second flight has peaked in most southern and central apple orchards and sapfeeder larvae are reappearing. The economic threshold for the third and final generation increases to five mines per leaf.

VEGETABLES

LATE BLIGHT: Late blight was confirmed for the first time this season in a Portage County potato field on July 18. Based on expected rainfall and potential for spore dispersal, UW Plant Pathologist, Dr. Amanda Gevens is recommending that growers of potatoes and tomatoes in the Portage County area begin treating their crops with effective fungicides (anti-sporulants) on a five- to seven-day spray interval as a protective measure. A seven-day program is appropriate for other Wisconsin potato production areas. Scouting efforts should also be intensified, concentrating on field corners and areas sheltered by trees, where late blight symptoms generally first appear. Registered fungicides for potato late blight in Wisconsin are listed at the UW-Madison Vegetable Pathology website.

IMPORTED CABBAGEWORM: Defoliation has become more pronounced in cole crop plantings since early July. The late-instar larvae (>1 inch long) noted in Dane, La Crosse and Vernon counties this week are capable of consuming more leaf area, causing larger holes in the leaves and producing more frass. The worms can be found on leaf undersides and inside the developing heads or growing points of plants. Treatment thresholds for this pest range from 10-75% of plants infested, depending on whether the crop is intended for fresh market sale or processing.



Imported cabbageworm damage

marysveggiegarden.files

that transmit bacterial wilt of cucurbits, infecting cucumbers, melons and squash through feces or contaminated mouthparts. Control is warranted for populations of 4-5 beetles per 50 plants.

FLEA BEETLES: Reports indicate that flea beetles have been a persistent problem for home gardeners this season. In many instances their damage is aesthetic, but control may be considered for young plants if beetles are present on every plant and defoliation exceeds 30%.

NURSERY & FOREST

HACKBERRY NIPPLE GALL: Hackberry trees across much of the state are showing infestations of this gall-making insect. The prominent galls develop on the undersides of the leaves in response to feeding by the tiny, yellowish-orange psyllid nymph. Hackberry is the only known host of this psyllid. In most cases, the galls are an aesthetic issue that has no impact on tree health. Control is seldom necessary.



Hackberry nipple gall

Liz Meils DATCP

LILY LEAF BEETLE NEW STATE RECORD: The distinct red beetles and black, slug-like larvae found on lily foliage at a nursery in Marathon County on June 25 have been identified by UW and DATCP entomologists as the lily leaf beetle, *Lillioceris lillii*, a very destructive pest of true lilies and fritillaria. This is the first confirmed report of the lily leaf beetle (LLB) in Wisconsin and a new state record.

STRIPED CUCUMBER BEETLE: Adults have been increasingly active over the southern half of the state in the last two weeks. Growers of cucurbits should continue to monitor plants for these yellow and black striped beetles

A native of Europe and Asia, the LLB was first officially documented in the United States in 1992. It is thought to have arrived in a shipment of lily bulbs from Europe. This exotic species has no effective North American natural

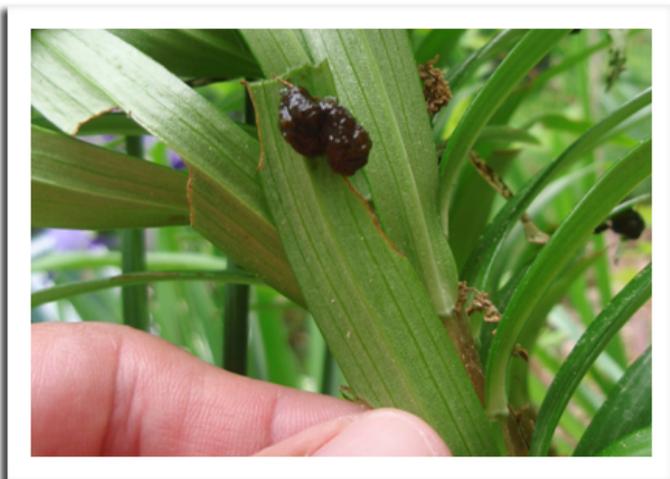
enemies and poses a potential economic threat to horticulturists, as well as an environmental threat to native lilies. Its primary host plants are true lillies (Asiatic and Oriental, Easter, Turk's cap, tiger) and fritillaria (*Fritillaria* spp.), though bittersweet, hollyhock, lily of the valley, Solomon's seal, and potato have also been reported as host. Daylilies are not hosts.



Lily leaf beetles

Tim Allen DATCP

The full extent of the Wisconsin infestation has not been determined. Beetles and larvae have thus far been found in three separate locations—Mosinee, Kronenwetter and Rothschild—all within an approximately 15-mile radius in Marathon County. Residents, gardeners and nursery operators who observe small red beetles or larvae on their lilies and suspect it may be LLB are encouraged to report their observations to the DATCP Nursery Program at datcpnursery@wisconsin.gov.



Lily leaf beetle larvae

Tim Allen DATCP

FLEA BEETLE: A variety of flea beetle species were observed this week on elderberry, elm, forsythia, hydrangea, and weigela at garden centers in Dodge, Fond du Lac, Jackson, Milwaukee, Polk, and St. Croix counties. These tiny beetles chew small pits on the underside of foliage that eventually dry up and fall out, leaving small circular holes in the leaves. Heavy feeding pressure can result in plant wilting or stunting. Most flea beetles prefer vegetable crops, but ornamental flowers, shrubs and trees are also susceptible to attack. Chemical control is occasionally warranted to reduce damage to nursery stock.

ERIOPHYID MITE: Light to moderate infestations of this mite were found on fragrant sumac, linden, maple, river birch and viburnum in Dodge, Milwaukee and Polk counties. Their pattern of feeding causes very distinct erineum galls—essentially a mass of leaf hairs containing thousands of tiny mites—to develop on the undersides of leaves. Damaged foliage becomes wrinkled and turns reddish. Activity should subside next month and no control is needed at this time. Pruning dormant woody trees and shrubs in early spring may help reduce numbers of overwintering mites on bud scales.



Erineum gall caused by eriophyid mites

www.ent.iastate.edu

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 17 - 23

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	AM RED ⁵	YELLOW ⁶
Bayfield	Keystone	7	0	4	26	—	—
Bayfield	Oriente	6	0	0	19	—	—
Brown	Oneida	800	36	4	2	0	0
Columbia	Rio	68	107	0	0	**2	**0
Crawford	Gays Mills	284	6	3	0	0	—
Dane	Deerfield	*full	*150	*18	*4	0	0
Dane	McFarland	327	37	0	1	0	—
Dane	Mt. Horeb	235	57	1	0	—	—
Dane	Stoughton	390	39	3	5	0	0
Dane	West Madison	28	7	13	0	1	0
Fond du Lac	Campbellsport	200	38	0	2	*0	0
Fond du Lac	Malone	80	60	1	4	—	—
Fond du Lac	Rosendale	91	74	2	1	2	0
Grant	Sinsinawa	104	8	4	—	—	—
Green	Brodhead	2	42	1	0	0	0
Iowa	Mineral Point	415	81	3	0	0	**5
Jackson	Hixton	60	6	3	5	0	1
Kenosha	Burlington	60	33	2	1	0	0
Marathon	Edgar	562	128	8	41	3	2
Marinette	Niagara	61	7	0	4	—	—
Marquette	Montello	87	0	0	0	0	0
Ozaukee	Mequon	500	12	4	0	*1	—
Pierce	Beldenville	729	63	8	0	0	0
Pierce	Spring Valley	162	91	0	4	0	0
Racine	Raymond	126	41	0	0	0	0
Racine	Rochester	70	30	3	3	*6	—
Richland	Hillpoint	540	14	0	0	**0	0
Sheboygan	Plymouth	465	62	4	3	**4	0
Walworth	East Troy	32	4	0	9	0	0
Walworth	Elkhorn	52	9	0	11	0	0
Waukesha	New Berlin	182	19	6	0	0	0

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵Apple maggot red ball; ⁶Unbaited AM trap; ^{**}Baited AM trap; ⁶Apple maggot yellow board; *Counts represents a two-week period.

COUNTY	SITE	BCW ¹	CEL ²	CE ³	DCW ⁴	ECB ⁵	FORL ⁶	SCW ⁷	TA ⁸	VCW ⁹	WBC ¹⁰
Crawford	Prairie du Chien	—	—	—	—	—	—	—	—	—	—
Dane	Mazomanie	3	0	0	0	14	0	0	24	2	2
Fond du Lac	Ripon	0	0	0	0	12	3	0	4	0	0
Manitowoc	Manitowoc	0	2	0	2	0	23	0	14	0	0
Marathon	Wausau	1	2	1	2	0	26	9	6	0	0
Monroe	Sparta	0	5	3	0	0	0	0	2	0	275
Rock	Janesville	1	7	0	0	0	13	0	19	0	0
Vernon	Coon Valley	1	0	1	0	6	5	0	14	0	3
Walworth	East Troy	—	—	—	—	—	—	—	—	—	—
Wood	Marshfield	5	9	0	0	2	9	1	11	2	3

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