

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-than-normal weather continued to dominate much of the state, slowing growth of summer crops and pastures. Daytime highs were generally in the 70s and were near normal or a few degrees below normal for early August. Nighttime lows fell below 40°F in several locations in northern Wisconsin. Early-week showers and isolated storms delivered variable amounts of rain to portions of the state, though some of the storms on August 6 were severe, with 40-60 mph winds that downed trees and damaged crops in the northeastern and central counties. Rainfall improved topsoil moisture for pollinating corn and flowering soybeans, but the unseasonably cool weather in recent weeks, coupled with below-average precipitation throughout July, has left late-planted crops in need of additional heat and rain to support development and ensure full maturation before a season-ending freeze.

LOOKING AHEAD

CORN ROOTWORM: Preliminary results of the annual beetle survey indicate populations are variable, with most fields containing low-moderate counts of less than 0.7 per plant and a few showing high counts of 0.8-5.6 per plant. Economic populations have been observed in only 10 of 65 (15%) fields surveyed as of August 7. The

survey, which indicates larval root damage potential for 2014, will continue next week in the central and northern crop districts.

CORN EARWORM: A significant migration was noted from July 28-August 5 in Dane, Green Lake and Fond du Lac counties where 697 moths were registered in seven pheromone traps. The weekly high count was 178 moths per trap near Green Lake. Sweet corn growers should view these counts as an early warning of potential earworm problems in silking fields.

EUROPEAN CORN BORER: The treatment window for second generation larvae has opened in southern and western Wisconsin with the accumulation of 1,550 (base 50°F). Cornfields should be inspected next week for egg masses and small larvae. Controls will remain effective against early-instar larvae until 2,100 degree days have been surpassed, or perhaps 2-3 more weeks if below-normal temperatures persist.

SOYBEAN APHID: Close monitoring of soybeans is critical at this time. Very high populations of 269-587 aphids per plant (on 100% of plants) have developed in a few Monroe, Waupaca and Waushara County fields in the last two weeks and treatment may be in order. Most surveyed fields contained low to moderate populations of less than 40 aphids per plant. Foliar treatment should not be considered 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.



Soybean aphids

Krista Hamilton DATCP

WESTERN BEAN CUTWORM: Moth counts have declined at most monitoring locations, signaling the end of the adult flight. The cumulative state total as of August 7 is 546 moths in 116 pheromone traps. Results of the 2013 western bean cutworm monitoring survey are summarized in the map on page 84.

JAPANESE BEETLE: Reports indicate these beetles are abundant enough in some apple orchards to require treatment. Scouting is advised for apples, corn, grapes, soybeans, and all other susceptible crops. Economic thresholds vary by crop and are listed under the **CORN**, **SOYBEAN** and **FRUIT** sections.

FORAGES

POTATO LEAFHOPPER: Surveys continue to yield non-economic leafhopper counts of less than two per sweep. Despite the dry weather and brief heat wave last month, populations have remained consistently low since the first migrants arrived in the state in May. Nevertheless, weekly monitoring of the third alfalfa crop throughout August is recommended.

PLANT BUGS: Nymphs have become more abundant in alfalfa in the last two weeks and now comprise about 40-50% of sweep net collections. The high count for the week was 5.4 per plant (adults and nymphs) near Tomah in Monroe County, although other surveyed fields had significantly lower averages of 0.4-2.5 per sweep.

DEGREE DAYS JANUARY 1 - AUG 7

LOCATION	50°F	2012	NORM	48°F	40°F
Dubuque, IA	1795	2429	1948	1823	2892
Lone Rock	1738	2380	—	1746	2824
Beloit	1910	2504	1978	1881	3030
Madison	1738	2395	1887	1776	2816
Sullivan	1732	2377	1868	1773	2808
Juneau	1628	2303	—	1723	2682
Waukesha	1562	2185	—	1648	2603
Hartford	1525	2164	—	1612	2555
Racine	1541	2160	—	1642	2582
Milwaukee	1505	2121	1774	1603	2531
Appleton	1521	2134	1809	1601	2527
Green Bay	1439	2042	1683	1527	2439
Big Flats	1522	2148	—	1549	2524
Hancock	1538	2166	1830	1588	2540
Port Edwards	1481	2095	1795	1550	2456
La Crosse	1700	2360	2062	1695	2758
Eau Claire	1585	2175	1856	1652	2573
Cumberland	1408	1885	1734	1472	2334
Bayfield	1024	1578	—	1057	1830
Wausau	1364	1899	1698	1438	2289
Medford	1400	1892	1553	1479	2327
Crivitz	1334	1890	—	1400	2280
Crandon	1250	1683	1326	1299	2122

Method: ModifiedB50; Sine48; ModifiedB40 as of Jan 1, 2013.
 NORMALS based on 30-year average daily temps, 1981-2010.

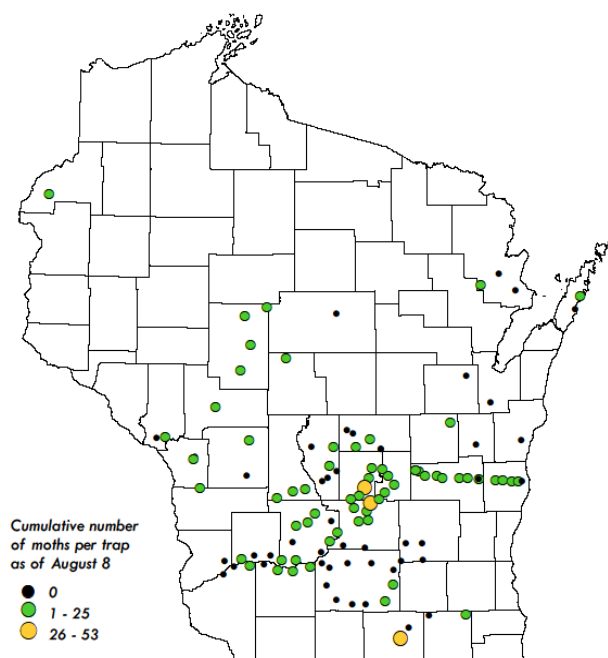
PEA APHID: Counts are similar to last week at 1-10 per sweep. Most fields contain fewer than three per sweep. Populations of this forage pest have increased slightly in response to the cooler and mostly dry weather, which favors aphid population growth.

CORN

WESTERN BEAN CUTWORM: The western bean cutworm degree day model indicates that 75% or more of the adult population has emerged as far north as Hancock in Waushara County. Moth counts have begun to decline across the southern half of the state. By contrast, emergence is about 50% complete in the north-central and northeastern counties where activity appears to have peaked in the past week. The high count for the period of July 28-August 7 was only 17 moths in the pheromone traps near Montello in Marquette County, Neillsville in Clark County and Egg Harbor in Door County. The

cumulative state count to date is only 546 moths in 116 traps, the lowest total in the last several years.

2013 Western Bean Cutworm Trap Counts



Wisconsin Department of Agriculture, Trade and Consumer Protection



CORN ROOTWORM: The annual beetle survey is now in progress and preliminary results show population reductions in the southwest and southeast districts. The average count in the southwest is 0.6 per plant, a decrease from 0.8 per plant in 2012. In the southeast, the district average of 0.3 per plant compares to 0.9 per plant last year. Despite lower beetle populations in portions of the south, counts in individual fields are as high as 5.6 per plant. Late-planted corn will remain at risk of silk pruning throughout August and should be checked to ensure pollination is not being impaired.

JAPANESE BEETLE: A DATCP survey specialist reports that approximately 3-4% of the plants in a Monroe County field had silks pruned to the ear tip and as many as five beetles per plant were feeding on the silks, potentially impairing pollination. Silk pruning was also noted in scattered fields in Grant, Lafayette and Sauk counties. Control of this pest is warranted for populations that exceed three beetles per ear when pollination is incomplete.

EUROPEAN CORN BORER: Moths of the second flight continue to appear in very low numbers in black light

traps, signaling that eggs are being deposited on corn and other hosts. The peak of summer moth activity is expected to occur in southern and central Wisconsin by August 19. Sweet corn and non-Bt field corn should be inspected for egg masses and larvae before 2,100 degree days (base 50°F) are surpassed and the treatment window for second generation corn borers closes. Surveys this week found minor infestations affecting 10-23% of plants in Monroe, Richland and Vernon counties.



European corn borer moth

Philippe Boissel flickr.com

TRUE ARMYWORM: Larvae produced by large moth flights last month are appearing in corn. Surveys during the first week of August found infestations affecting 2-14% of plants in several Juneau, La Crosse and Monroe County fields, with larvae ranging from 1-1½ inches in length. Severe armyworm problems are uncommon at this time of year, but their prevalence suggests continued scouting is in order. The last significant outbreak of second generation armyworms was in August of 2005.

SOYBEANS

SOYBEAN APHID: Densities have increased to economic levels in a few fields since late July. Four of six fields sampled in the Cataract and Tomah areas of Monroe County in the past week had very high average counts of 269-587 aphids per plant on 100% of the plants. Populations in an Oconto County field were just below-threshold at 212 aphids per plant.

Results of the summer aphid survey currently under way suggest populations are still low in the majority of Wisconsin soybean fields, but may be rapidly increasing in

response to recent mild temperatures. Soybean aphids reproduce faster in cooler environments, with the greatest population growth occurring at temperatures of 70-80°F. Foliar treatment, if required, is most effective when applied during the R2-R4 (full bloom to full pod) stages.

JAPANESE BEETLE: Light to moderate (2-15%) defoliation is common in soybeans statewide. Populations appear to be lower than last year in most locations and treatment has not been justified for any field sampled as of August 7. The economic threshold for Japanese beetle and other leaf feeding soybean pests is 20% defoliation between bloom and pod fill.



Japanese beetle soybean leaf skeletonization Krista Hamilton DATCP

FRUITS

APPLE MAGGOT: Emergence increased abruptly in the past week at several orchard locations. Counts of 15 and 25 flies per unbaited red sphere trap were reported from Rochester and Gays Mills, respectively, while 17 of 27 orchards registered one or more flies. Growers should continue to maintain traps and apple maggot sprays as long as the flies persist and counts exceed established economic thresholds.

SPOTTED WING DROSOPHILA: The latest update from UW-Madison Fruit Crops Entomologist, Christelle Geudot indicates flies and/or larvae have now been confirmed in Bayfield, Columbia, Crawford, Dane, Door, Iowa, Racine, Rock, Sauk, Trempealeau and Vernon counties, while infestations are suspected in Buffalo, Jefferson, Kenosha, La Crosse, Monroe, Pierce, Washburn and Wood counties. The infestations are primarily affecting raspberries and other small fruits, although flies have

been collected in traps set near peaches. Spotted wing drosophila poses only a moderate risk to unripened peaches, but fruits that drop, become overripe, or split can harbor larvae and should be removed from the orchard after harvest to minimize risk of future infestations.

OBLIQUEBANDED LEAFROLLER: Moths of the second flight are appearing in traps across southern Wisconsin. The summer flight could be prolonged until late August or early September this year if below-normal temperatures continue, in which case surface feeding damage would also persist into fall. The timing of the flight is such this year that some materials applied for codling moth control (Altacor, Avaunt, Delegate, Entrust and Imidan) are also likely to reduce leafroller populations. The insecticides Assail and Calypso targeting apple maggot and codling moth will have no impact on the leafrollers.

CODLING MOTH: Since temperatures have not been conducive for rapid degree day accumulations, most orchards have not yet documented the peak of summer moth activity, expected to occur 1,300-1,400 degree days (base 50°F) after the first spring biofix. Apple growers are reminded to replace pheromone lures in preparation for the increase in moth activity.



Codling moth larval damage to apples Patrick Clement flickr.com

JAPANESE BEETLE: Activity has been delayed and unpredictable this season. A few growers have noted light-moderate damage to 'Honeycrisp' apples, but populations are fairly low for early August. If levels increase this month and treatment is required, growers can minimize insecticide use by treating only susceptible, infested varieties. Conventional growers may use pyrethroids or Imidan for immediate knock-down control, while organic producers could target first with PyGanic

and follow-up the next day with Neem oil as a repellent. Controls should be applied on a warm, sunny afternoon, when the beetles are most active, for maximum effectiveness.

POTATO LEAFHOPPER: A report from Chippewa County notes the arrival of the leafhoppers last week and associated discoloration of new shoots and mild hopperburn symptoms. Non-bearing, 1- to 2-year-old 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 apparent.

VEGETABLES

CABBAGE CATERPILLARS: Populations of diamondback moths, cabbage loopers and imported cabbageworms are reportedly high in a few southern Wisconsin cabbage plantings. The larvae of these cabbage pests initially feed on leaves, causing large ragged holes, and eventually move to the center of the plant to infest the developing heads of broccoli, cabbage and cauliflower. Treatment thresholds are reached when 10% of cabbage in the early heading to mature head stages are infested, or 10% of broccoli and cauliflower in the first flower or curd to maturity phase are affected. *Bacillus thuringiensis* (Bt) and chemical insecticides are the most effective forms of control.



Cabbage damaged by diamondback moth larvae infonet-biovision.org

CORN EARWORM: Moth collections increased sharply at Dane, Fond du Lac and Green Lake County trap locations. A surge from 26-178 moths was registered near Ripon, and the weekly count at Green Lake

increased from 21-150 moths. Another 145 migrants were collected in the pheromone trap north of Sun Prairie. These counts are indicative of a large and potentially destructive flight of corn earworm migrants capable of laying eggs in silking sweet corn. All susceptible fields should be checked at this time. Counts in the past week were as follows: Chippewa Falls 0, Coon Valley 1, Cottage Grove N 38, Green Lake 150, Janesville 2, Marshfield 17, Mazomanie 5, Manitowoc 0, McFarland 96, Ripon 178, Sun Prairie N 145, Sun Prairie W 39, and Watertown 60.



Corn earworm moth

pk-photography.blogspot.com

ONION MAGGOT: The third generation of flies is expected to begin emerging in the southwest, south-central and west-central areas in the week ahead following the accumulation of 3,230 degree days (base 40°F). Since this final generation will produce larvae that overwinter in cull onions and old bulbs left behind in fields, thorough sanitation or rotating to a non-crop host is recommended for growers who experienced onion maggot problems earlier this season.

LATE BLIGHT: Conditions in recent weeks have been favorable for late blight development. Potato fields infected with this disease have to date been confirmed in Adams, Brown, Dunn, Juneau, Langlade and Portage counties. Two cases of the disease on tomato have also been verified in Brown and Sauk counties. Continued scouting of potatoes and tomatoes for symptomatic leaves and stems is advised. Organic growers should maintain preventative copper-containing fungicide treatments (approved for organic use) on a 5- to 7-day schedule.

NURSERY & FOREST

FALL WEBWORM: Webs constructed by the larvae of this pest are conspicuous on alder, aspen, birch and other host trees statewide. Fall webworm is a native species that feeds on a wide range of deciduous forest, shade, fruit, and ornamental trees. Its characteristic webs appear at this time of year, later than nests made by other web- and tent-making species found in Wisconsin. This pest is primarily a cosmetic problem that can be controlled by removing and destroying the web and the surrounding branches. Insecticides or *Bacillus thuringiensis* (Bt) products are also effective against small larvae. Fall webworm feeding rarely results in severe or long-term damage and populations are usually regulated by more than 50 different species of parasites and 36 species of predators.



Fall webworm larvae

Marcia Wensing DATCP

CEDAR-HAWTHORN AND CEDAR-QUINCE RUST:

Symptoms of cedar-hawthorn and cedar-quince rust are appearing on hawthorns throughout the state. In the case of cedar-hawthorn rust, bright orange leaf spots are evident on the leaves, while cedar-quince rust is infecting the fruits and twigs. Both rust diseases require two hosts to complete their life cycles: a rosaceous host such as hawthorn and a juniper host. Selecting resistant hawthorn cultivars and thorough sanitation (removing as much of the infected twigs, fruit and leaves as possible) are the recommended controls. Fungicide treatments applied as new growth appears and flower buds start to open may be justified for severe cases.

BIRCH ERINEUM GALL: Nursery inspectors identified the reddish-pink, felt-like patches appearing on river birch

leaves in Ozaukee County as birch erineum galls. The galls are caused by tiny eriophyid mites and have no impact on tree health. Control is not necessary.



Erineum gall on birch

Marcia Wensing DATCP

GYPSY MOTH: The DNR Northern Region Forest Health Specialist reports that defoliation by this pest was generally less severe than expected in northern Wisconsin this season. Moderate defoliation of aspen stands occurred in Ashland and Florence counties, while damage in parts of Bayfield County was light. A number of homeowner inquiries were received concerning large infestations of caterpillars, but in all cases follow-up inspections found most of the larvae were dead or dying as a result of disease promoted by cool, wet spring weather. Due to the extensive larval mortality, major problems are not anticipated in these areas in 2014.

SPRUCE BUDWORM: This conifer pest has also been less of a problem than anticipated. Larvae did not defoliate thousands of spruce and fir acres in northeastern Wisconsin, as DNR foresters had predicted. Considerable balsam fir mortality did occur in a few Florence and Forest County townships, but the death resulted from infestations in previous years. The decline in larval populations was likely influenced by low temperatures and excessive rain this spring.

APPLE INSECT & BLACK LIGHT TRAP COUNTS AUGUST 1 -7

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	AM RED ⁵	YELLOW ⁶
Bayfield	Keystone	19	9	0	3	7	3
Bayfield	Orienta	136	0	0	22	0	0
Brown	Oneida	250	17	7	1	0	0
Chippewa	Chippewa Falls	0	0	5	0	0	0
Columbia	Rio	350	0	0	0	3	0
Crawford	Gays Mills	45	5	8	1	*25	0
Dane	Deerfield	490	0	0	2	0	0
Dane	Mt. Horeb	74	3	4	0	0	0
Dane	Stoughton	44	16	18	0	0	1
Dane	West Madison	24	4	6	5	5	1
Fond du Lac	Campbellsport	50	18	0	3	3	0
Fond du Lac	Malone	18	12	2	2	1	0
Fond du Lac	Rosendale	61	14	4	0	4	3
Grant	Sinsinawa	13	0	0	12	0	0
Green	Brodhead	—	—	—	—	—	—
Iowa	Mineral Point	460	3	27	0	0	1
Jackson	Hixton	38	0	1	3	0	1
Kenosha	Burlington	—	—	—	—	—	—
Marinette	Niagara	170	14	2	1	2	0
Marquette	Montello	972	0	3	0	0	1
Ozaukee	Mequon	75	9	3	0	*1	0
Pierce	Beldenville	—	—	—	—	—	—
Pierce	Spring Valley	60	16	4	0	2	0
Polk	Turtle Lake	136	34	16	0	*4	0
Racine	Raymond	102	3	11	3	0	0
Racine	Rochester	164	3	12	0	*15	0
Richland	Hillpoint	405	4	5	1	4	3
Sheboygan	Plymouth	—	—	—	—	—	—
Walworth	East Troy	51	0	1	0	0	0
Walworth	Elkhorn	76	1	0	0	0	0
Waukesha	New Berlin	51	0	5	6	0	0

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵Apple maggot red ball;

*Unbaited AM trap; **Baited AM trap; ⁶Apple maggot yellow board.

COUNTY	SITE	ECB ¹	TA ²	BCW ³	SCW ⁴	DCW ⁵	CE ⁶	CEL ⁷	WBC ⁸	FORL ⁹	VCW ¹⁰
Chippewa	Chippewa Falls	10	0	4	0	0	0	2	8	0	0
Columbia	Arlington	0	0	0	0	0	0	0	0	0	0
Crawford	Prairie du Chien	0	0	0	0	0	0	1	1	0	0
Dane	Mazomanie	0	0	0	0	1	2	0	0	0	0
Fond du Lac	Ripon	0	0	0	0	0	4	4	12	0	0
Manitowoc	Manitowoc	0	0	0	21	0	0	0	0	13	8
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	0	0	0	0	0	0	0	7	0	0
Portage	Plover	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	2	3	1	0	0	0	0	0	4	0
Walworth	East Troy	—	—	—	—	—	—	—	—	—	—
Wood	Marshfield	0	0	4	1	4	0	4	3	2	1

¹European corn borer; ²True armyworm; ³Black cutworm; ⁴Spotted cutworm; ⁵Dingy cutworm; ⁶Corn earworm; ⁷Celery looper;

⁸Western bean cutworm; ⁹Forage looper; ¹⁰Variegated cutworm.