

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

Oppressive heat and humidity prevailed at the start of the week, easing late on Wednesday as temperatures returned to near normal values for late July. Although beneficial moisture fell across much of the state, the rain was not enough to make a significant improvement in the drought situation. Seasonal rainfall totals remain below average in all areas and soil moisture levels are still 95% or more short to very short in four of the nine crop reporting districts. Approximately 43% of the corn crop and 33% of the soybean crop is in poor or very poor condition. Pastures have stopped growing and producers are reducing livestock numbers due to the scarcity of hay. According to the latest U.S. Drought Monitor report, at least 50% of the state is currently experiencing drought. Farmers in 23 southern Wisconsin counties now qualify for assistance after being designated as primary natural disaster areas by the USDA. Eligible farmers expect to lose 40% or more of their crops because of this season's historic drought conditions.

LOOKING AHEAD

CORN ROOTWORM: Surveys conducted in the south-central and central districts found variable counts of 0.1-9.3 beetles per plant this week, with an average of 0.9 per plant. Economic populations of 0.75 or more beetles

per plant were documented in 6 of 36 (17%) sampled fields. Preliminary results of the annual beetle survey indicate that populations are generally high in the south and low to moderate in the central area. Emergence of rootworm adults is expected to peak by early August, although egg deposition in corn fields should continue for several more weeks.

EUROPEAN CORN BORER: The treatment window for second generation larvae has closed in locations where the degree day standard has surpassed 2,100 (base 50°F). Corn fields should be inspected next week for egg masses and larvae. Management decisions must be made very soon, before the larvae have bored into corn stalks and ears.

WESTERN BEAN CUTWORM: Moth numbers have declined substantially at most monitoring locations, signaling the end of the adult flight. The cumulative state total as of July 25 is 3,078 moths in 129 pheromone traps. Moth counts for the trapping period of June 13-July 25 are provided in the map on page 97.

BROWN MARMORATED STINK BUG: Extension Entomologist Phil Pellitteri confirms that a single specimen of the brown marmorated stink bug (BMSB) was collected "at lights" in west Madison on July 14. This latest find, in combination with an earlier detection at a Middleton residence last spring, strongly suggests that the invasive

stink bug is established in Dane County. The BMSB has been found indoors or in association with shipping materials on at least seven occasions since 2010, but to date has not been detected in any agricultural setting in Wisconsin.



Brown marmorated stink bug

KatanaZ flickr.com

JAPANESE BEETLE: Defoliation was observed at the rate of 5-15% in soybeans as far north as Eau Claire County. The most serious infestations were found in Grant, Monroe and Sauk counties in the past week. Leaf injury by the combination of Japanese beetles, grasshoppers, green cloverworms and various other defoliators should not exceed 20% between the bloom and pod-fill stages.

CORN EARWORM: Significant flights of 45-157 moths were registered in Dane, Fond du Lac, Jefferson and Waushara counties again this week. Egg laying has intensified and is likely to continue throughout August, so regular scouting and control measures are in order. Sweet corn is susceptible to infestation as long as green silks are present.

FORAGES

POTATO LEAFHOPPER: Counts remain much the same as previously reported. Surveyed fields in Adams, Juneau, Monroe, Richland and Sauk counties contained 0.4-4.5 per sweep, with an average of 2.2 per sweep. Economic populations were noted at about 30% of sites checked. Nymphs are still common in most fields.

PEA APHID: Sweep net counts in the central and southwest counties ranged from 1.5-6.2 per sweep and averaged about 3.1 per sweep during the period of July

DEGREE DAYS JANUARY 1 - JULY 25

LOCATION	50°F	2011	NORM	48°F	40°F
Dubuque, IA	2126	1726	1666	1901	3423
Lone Rock	2087	1660	—	1838	3349
Beloit	2186	1747	1689	1897	3504
Madison	2088	1603	1611	1823	3363
Sullivan	2068	1602	1591	1796	3340
Juneau	2001	1532	—	1739	3236
Waukesha	1884	1412	—	1690	3078
Hartford	1867	1402	—	1682	3055
Racine	1849	1328	—	1704	3034
Milwaukee	1815	1318	1485	1658	2993
Appleton	1843	1366	1530	1664	3015
Green Bay	1756	1269	1421	1618	2900
Big Flats	1876	1412	—	1650	3048
Hancock	1883	1425	1563	1644	3072
Port Edwards	1820	1384	1528	1647	2970
La Crosse	2070	1614	1763	1842	3318
Eau Claire	1892	1463	1581	1729	3071
Cumberland	1635	1306	1469	1593	2740
Bayfield	1339	1003	—	1371	2302
Wausau	1644	1269	1436	1548	2726
Medford	1643	1296	1311	1629	2732
Crivitz	1624	1194	—	1556	2710
Crandon	1461	1147	1124	1430	2480

*Method: ModifiedB50; Sine48; ModifiedB40 as of Jan 1, 2012.
NORMALS based on 30-year average daily temps, 1981-2010.*

19-25. The higher populations were found in Adams and Juneau counties. Aphid densities in alfalfa are relatively low at this time.

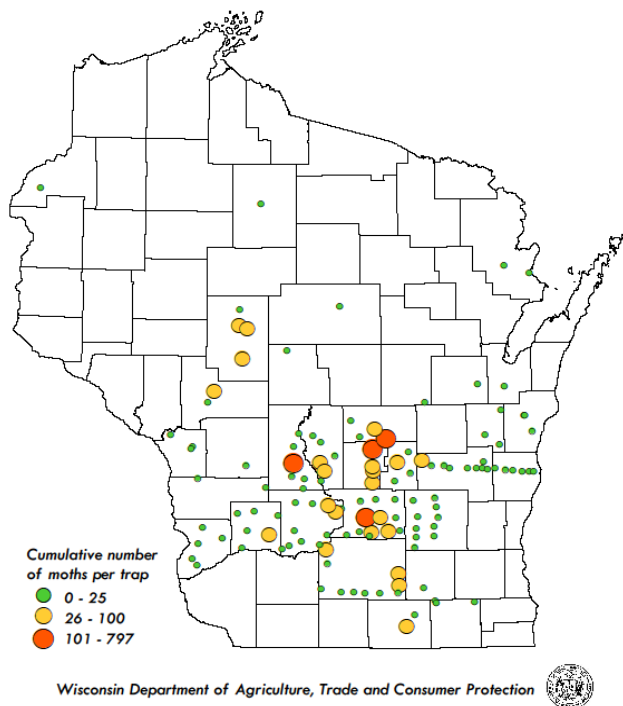
BLACK BLISTER BEETLE: Alfalfa fields surveyed in Adams and Juneau counties had low counts of 1-3 beetles per 20 sweeps. Blister beetles can be an indicator of potentially high grasshopper populations since the immature stages are predaceous upon grasshopper eggs.

CORN

WESTERN BEAN CUTWORM: Moth collections have declined to low levels at most sites as the annual flight subsides, although a few locations in Clark, Calumet, Marinette and Outagamie counties registered higher numbers this week. Early results of the trapping survey show a decrease in the state moth count, from 3,466 last year to 3,078 as of July 25. However, this figure is preliminary and subject to revision. Cumulative totals for

the 129 pheromone traps distributed throughout Wisconsin are illustrated in the map below. Sites that registered 101 or more moths are represented by the orange symbols.

2012 Western Bean Cutworm Trap Counts



CORN ROOTWORM: Surveys in the past week yielded economic populations of 0.75 or more beetle per plant in 6 of 36 (17%) fields sampled in the south-central and central areas. This represents a decrease from the 33% that had economic counts when the same sites were examined last season. Beetle counts in Columbia and Dodge counties varied from 0.1-9.3 per plant and averaged 1.3 per plant. In the central counties of Adams, Juneau, Green Lake, Marquette, Portage, Waupaca and Waushara, counts were lower and ranged from 0.2-4.5 per plant, with an average of 0.5 per plant. The high count of 9.3 beetles per plant was noted in the Cambria area of Columbia County. The annual survey is now in progress and the final results should be available in August.

CORN EARWORM: The significant migration that began three weeks ago has accelerated. Large flights of 45-157 moths have been registered in Dane, Fond du Lac, Jefferson and Waushara counties and treatments are under way. Trap counts for the period of July 19-25 were: Aztalan 157, Bloomington 0, Chippewa Falls 2, Columbus 18, Hancock 70, Janesville 9, Manitowoc 0, Marshfield 4,

Oregon 45, Ripon^a 47, Ripon^b 59, Sun Prairie 56, Wausau 0 and Westport 22. A pheromone trap count of 10 or more moths for two consecutive nights indicates the need for protective treatment of sweet corn fields with green silks.

JAPANESE BEETLE: Light to moderate beetle infestations were observed this week in scattered corn fields in the south-central area. In Columbia County, approximately 2-3% of the plants in one field had silks pruned to the ear tip and as many as six beetles per plant were feeding on the silks, thus impairing pollination. Control is warranted if populations exceed three beetles per ear and pollination is incomplete.



Japanese beetles feeding on corn silks

Clarissa Hammond DATCP

SOYBEANS

SOYBEAN APHID: Densities are still abnormally low for late July. The average count in 65 fields surveyed from July 19-25 was only 3.2 aphids per 20 plants. The highest count documented this week was 26 aphids per 20 plants, or 1.3 per plant. Foliar insecticide treatments directed against this pest have not been justified for any Wisconsin soybean field sampled by DATCP this season.

JAPANESE BEETLE: This insect continues to cause light to moderate (5-15%) defoliation of soybeans, particularly along field margins. Infestations were noted in Dane, Eau Claire, Grant, Green, Jefferson, Monroe and Sauk counties this week. The economic threshold for Japanese beetle and other leaf feeding soybean pests is 20% defoliation between bloom and pod fill. Spot treatment is an acceptable form of control for fields with the heaviest injury occurring in the peripheral areas.

TWO-SPOTTED SPIDER MITE: Leaf bronzing, stippling and other symptoms associated with the mite have become more pronounced in soybeans in the last 2-3 weeks, and numerous fields have been treated. Nearly all of the 65 fields examined this week were infested to some degree, with the most severe symptoms appearing on plants along the field edges. Although recent rainfall may have temporarily slowed their build-up, scouting and spray schedules should be maintained.



Two-spotted spider mite leaf stippling

Krista Hamilton DATCP

FRUITS

APPLE MAGGOT: Counts in several Wisconsin orchards have shown an increase in the past week. The cooperators near Gays Mills and Plymouth reported high counts of 12 flies per red sphere trap, and in Beldenville, Spring Valley and Chippewa Falls, traps collected 4-9 flies. Economic counts of one or more flies per unbaited trap or five or more flies per baited trap were registered at 11 of 23 (48%) locations from July 19-25. Apple growers should continue to maintain traps through mid-September.

CODLING MOTH: Degree day totals of 350-500 (base 50°F) have accumulated since the second biofix occurred. Controls for second generation larvae have been applied at most sites. Scouting is recommended for another 2-3 weeks, or until 650-750 degree days post-biofix. A late-season spray may be warranted if counts exceed five moths per trap per week.

STINK BUG: Nymphs are appearing in apple orchards and field crops statewide. Minor fruit injury has been reported from a few locations in the past two weeks.

Stink bug activity often escalates in August, and damage to fruits is a distinct possibility next month. The brown (*Euschistus servus*) and green (*Acrosternum hilare*) stink bugs are the most prevalent species at this time. These common, native pests should not be mistaken for the invasive brown marmorated stink bug (*Halomorpha halys*), which to date has not yet been found in any Wisconsin apple orchard.

NEW STATE RECORD: An adult citron bug (Coreidae: *Leptoglossus gonagra*) was found on squash near Wisconsin Rapids in Wood County, representing the first report of *L. gonagra* in Wisconsin. This leaf-footed bug is a pest of citrus fruits in Florida and causes premature color break and fruit drop as well as providing access for various fungal diseases and insects. The citron bug is dark brown to black in color with the front margin of the thorax yellow. It is about $\frac{3}{4}$ inch in length and, like other leaf-footed bugs, is recognized by the fourth segment of the hind leg which is wide and leaf-shaped. Since its preferred host is citrus, this detection is not expected to have economic implications for Wisconsin growers.



Citron bug

gailhampshire flickr.com

VEGETABLES

BLOSSOM END ROT: This physiological disorder of tomatoes, peppers, watermelons and squash is prevalent in commercial and home gardens, according to grower reports. The dark, water-soaked spot that starts at the blossom end of the fruit and enlarges around the fruit surface is caused by calcium deficiency or inconsistent soil moisture levels. Since this disease is physiological in nature, fungicides and insecticides are useless as control measures. Adjusting calcium levels in spring and main-

taining even soil moisture levels throughout the season will usually limit its development.



Blossom end rot on tomato

mofga.org

CABBAGE CATERPILLARS: Populations of diamondback moths, cabbage loopers and imported cabbageworms are reportedly high in 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.



Defoliation caused by diamondback moth larvae

ent.uga.edu

ONION MAGGOT: The third generation of flies should begin appearing in the southeastern and central counties

next week, following the passage of 3,230 degree days (base 40°F). As mentioned in last week's issue, this third and final generation eventually overwinters as pupae in cull onions or bulbs left behind in fields. Thorough field sanitation and rotating to a non-crop host are suggested controls for growers with a history of onion maggot problems. On a positive note, larval populations could be reduced next spring due to this year's hot, dry weather pattern. The onion maggot cannot survive in dry soils.

WEEDS

PURSELANE: This, drought-tolerant, annual plant has become increasingly common in home gardens and landscaped areas. Purslane is easily identified by its smooth, prostrate growing purplish-red stem and thick succulent leaves. Because it reproduces from seeds and stem pieces, long-term control requires removing entire plants prior to seed production for several years in a row.



Purslane

Richard Old XID Services, Inc.

GIANT RAGWEED: Recent surveys in row crops indicate that giant ragweed control was ineffective in many fields again this season. Unsatisfactory control of this summer annual usually results from a combination of its competitive characteristics (i.e. early seedling emergence, staggered emergence times, and rapid growth rate) and failed management programs. In addition, prevailing drought conditions have also contributed to poor control this year.

Giant ragweed is well adapted to survive newer agronomic practices, such as earlier planting and reduced tillage. The most consistent control programs are those that combine a **sequential management** approach that

includes the use of both preemergence (PRE) and post-emergence (POST) herbicide applications. Guidelines for giant ragweed management include the following:

- Control weeds that emerge prior to planting with tillage or a preplant burndown application.
- Apply PRE herbicides with activity on giant ragweed to reduce competition with crops, provide flexibility in the timing of POST applications, and minimize the need for additional POST glyphosate applications.
- Where a PRE herbicide is used, apply POST herbicides before plants are 6-10 inches tall. If a PRE is not used, apply when giant ragweed is less than 6 inches tall. With most non-glyphosate herbicides, applications should be made prior to 4 inches tall.
- Scout fields two weeks after the POST application. Control escapes or plants that emerge after the initial POST application with a second POST application.

NURSERY & FOREST

ASTER YELLOWS: This aster leafhopper-transmitted disease was found on echinacea 'Alba White Swan' and 'Pink Double Delight' at a nursery in Sawyer County. Symptoms of infection include abnormal flowers, irregular stem growth, and green, stunted ray and disk petals. The aster yellows phytoplasma persists in both wild and cultivated coneflowers and other perennial or biennial hosts over the winter months, thus infected plants may act as reservoirs next spring. Removal and destruction of symptomatic plants is the recommended control method.



Aster yellows on purple coneflower

Konnie Jerabek DATCP

POTATO LEAFHOPPER: Red maples, white and green ash and honey locust trees in Bayfield, Oneida, Ozaukee and Washington counties are showing leaf cupping and tip-burn, typical symptoms of potato leafhopper feeding injury. Activity and reproduction by this insect is favored during periods of hot, dry weather and densities have been comparatively high this summer. Treatment of nursery stock is justified when nymphs and adults are present and symptoms are obvious.



Potato leafhoppers on red maple leaf

Liz Meils DATCP

FLEA BEETLE: Several species of flea beetles were observed on hydrangea, weigela and a variety of other plants at garden centers in Outagamie and Ozaukee counties. Their pattern of feeding results in shallow pits and small rounded, irregular holes. Heavy feeding can cause wilted or stunted plants. Most flea beetles prefer vegetable crops, but some also feed on ornamental flowers, shrubs and trees. When populations reach damaging levels, there are a range of cultural, physical, biological and insecticidal options available for their control.

RHIZOSPHAERA NEEDLECAST: Discoloration of both Colorado blue and white spruce trees in Oneida and Outagamie counties has been attributed to this fungal disease, characterized by browning and early needle loss starting on the lower branches. Needles are infected in spring, turn yellow in July, and then become purplish-brown by late summer and fall. Spruce trees may be treated with a fungicide in spring when the new growth reaches ½-2 inches long, and again 4-6 weeks later to prevent infection.

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 19-25

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	OBLR ⁵	AM RED ⁶	YELLOW ⁷	GDD 50°F
Bayfield	Keystone	0	23	2	9		0	0	
Bayfield	Oriente	15	5	0	1		0	0	
Brown	Oneida	120	70	14	10		1	0	
Chippewa	Chippewa Falls	—	—	8	0		*9	—	
Crawford	Gays Mills	182	3	7	4		*12	0	
Dane	Deerfield	—	—	—	—		—	—	
Dane	McFarland	—	—	—	—		—	*10	
Dane	Mt. Horeb	4	6	12	1		0	0	
Dane	Stoughton	37	12	6	1		0	0	
Dane	West Madison	—	21	8	0		0	0	
Fond du Lac	Campbellsport	130	97	0	16		0	0	
Fond du Lac	Malone	64	9	7	6		0	**1	
Fond du Lac	Rosendale	—	—	—	—		—	—	
Grant	Sinsinawa	—	—	4	1		—	—	
Green	Brodhead	0	21	8	1		0	0	
Iowa	Mineral Point	200	13	15	2		0	0	
Jackson	Hixton	34	0	2	2		0	0	
Kenosha	Burlington	40	0	1	2		3	0	
Marathon	Edgar	—	—	—	—		—	—	
Marinette	Niagara	44	5	0	4		0	0	
Marquette	Montello	171	2	2	2		*1	**0	
Ozaukee	Mequon	—	—	—	—		—	—	
Pierce	Beldenville	295	11	56	3		0.5	4	
Pierce	Spring Valley	137	15	8	0		0	*4.5	
Polk	Turtle Lake	137	0	18	1		**0	0	
Racine	Raymond	192	3	4	3		0	0	
Racine	Rochester	215	11	25	0		*4	0	
Richland	Hillpoint	626	2	14	9		1	**0	
Sheboygan	Plymouth	198	63	7	4		**12	—	
Waukesha	New Berlin	205	3	5	4		0	0	

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller EASTERN; ⁵Obliquebanded leafroller WESTERN; ⁶Apple maggot red ball; ^{*}Unbaited AM trap; ^{**}Baited AM trap; ⁷AM yellow board; ^{*}Two-week counts.

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	28	0	0	0	2	0	0	7	0	0
Columbia	Arlington	—	—	—	—	—	—	—	—	—	—
Crawford	Prairie du Chien	0	0	0	0	0	0	0	0	0	0
Dane	Mazomanie	1	2	0	0	0	0	0	2	0	0
Fond du Lac	Ripon	16	0	0	0	0	0	0	7	0	0
Manitowoc	Manitowoc	0	6	4	0	4	0	0	0	21	0
Marathon	Wausau	3	0	6	1	17	1	2	26	17	0
Monroe	Sparta	31	0	0	0	0	18	0	16	6	0
Portage	Plover	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	0	0	0	0	0	0	0	0	1	0
Vernon	Coon Valley	3	0	0	0	0	0	5	1	9	0
Walworth	East Troy	0	0	0	0	4	0	0	4	3	0
Wood	Marshfield	0	4	3	0	2	1	3	10	15	0

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