

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

Temperatures and relative humidities moderated during the last reporting period and generally quiet weather prevailed. Scattered showers and thunderstorms moved through northern and western Wisconsin early in the week, but no prolonged rainfall events occurred for the first time since early June. The recent warm weather has been very favorable for the development and activity of nearly all insects, including the western bean cutworm, which began appearing in substantial numbers in black light and pheromone traps. Colonies of soybean aphids that were previously too low to detect are reproducing at a rapid rate and have dispersed to 100% of the plants in many soybean fields. Japanese beetles and grasshopper nymphs were noticeably abundant and damaging in a variety of field crops, orchards and residential areas this week.

LOOKING AHEAD

EUROPEAN CORN BORER: Pupation of the first generation has begun and moths of the second flight are expected to emerge in the southern half of the state in the week ahead. Surveys for second generation egg masses and larvae should be initiated by July 25 near Beloit, August 2 near Madison, and August 8 near Stevens Point. A greater percentage of egg masses are

likely to be found on leaves near the ear zone. The treatment interval for second generation corn borers extends from 1,550-2,100 degree days (base 50°F).

SOYBEAN APHID: Surveys to assess population densities and the rate of aphid build-up should be performed this week, while most soybean fields are in the early reproductive stages of growth. Chemical treatments are most effective in controlling aphids and minimizing their resurgence when applied during the R2-R4 (full bloom to full pod) stages. Regular visits to fields may be required to determine if the aphid colonies are actively increasing.

JAPANESE BEETLE: Heavy infestations are present in yards and home gardens in Dane County, and orchards in Kenosha and Racine counties are reporting large numbers of these beetles. Infestations likewise have been severe in nurseries in Jefferson County. Trapping in residential areas generally attracts more beetles than normally would be present, and is not recommended unless areas are isolated from other Japanese beetle breeding sites or if mass trapping is used.

GRASSHOPPERS: Populations have increased greatly in the southern and central areas. Due to the erratic distribution of the infestations and the magnitude of some of the current populations, farmers are strongly advised

to check alfalfa, corn and soybean fields, and consult their county agent for control recommendations.



Defoliation caused by grasshoppers Krista Hamilton DATCP

TRUE ARMYWORM: Examination of field corn in south central, southeast and central counties revealed no active armyworm infestations. However, the second generation of larvae is developing quickly under current temperatures and their feeding damage should become evident in fields in the next 1-2 weeks.

FORAGES

POTATO LEAFHOPPER: Numbers are variable in alfalfa at the present time. Populations average about 1.0 per sweep, but range from 0.1-1.0 in the southwest counties, 0.2-3.1 in the south central counties, and 1.2-4.8 in the central counties. Yellowing has become more pronounced in the tallest alfalfa and in those fields on sandy soils in Adams, Juneau and Marquette counties. Nymphs in all stages of development constitute 40-50% of the population, indicating that reproduction is heavy. Economic numbers of adults and nymphs were found in only 4 of 38 (11%) fields sampled this week. Counts continue to be low (< 1 per sweep) in the southwest district, particularly in Crawford, Grant, Iowa, Lafayette and Richland counties. The economic threshold for this insect is 0.2 per sweep in 3 inch alfalfa, 0.5 per sweep in 6 inch alfalfa, 1.0 per sweep in 8-11 inch alfalfa, and 2.0 per sweep in alfalfa taller than 12 inches.

PLANT BUG: Mixed populations of the tarnished plant bug and alfalfa plant bug average 1.1 per sweep in alfalfa in the southern half of the state, which is well below the economic threshold of 5 per sweep. Nymphs

DEGREE DAYS MARCH 1 - JULY 24

LOCATION	50°F	2007	NORM	48°F	40°F
Dubuque, IA	1528	1733	—	1600	2521
Lone Rock	1395	1668	—	1471	2329
Beloit	1537	1700	—	1588	2523
Madison	1382	1623	1588	1478	2315
Sullivan	1458	1550	1611	1517	2414
Juneau	1394	1546	—	1482	2323
Waukesha	1358	1510	—	1447	2288
Hartford	1331	1532	—	1430	2253
Racine	1289	1492	—	1375	2213
Milwaukee	1267	1488	1418	1351	2184
Appleton	1299	1501	1453	1386	2191
Green Bay	1216	1384	1400	1305	2104
Big Flats	1276	1532	—	1340	2143
Hancock	1291	1515	1572	1359	2163
Port Edwards	1232	1506	1492	1300	2087
La Crosse	1395	1796	1719	1461	2317
Eau Claire	1258	1631	1546	1327	2134
Cumberland	1083	1482	1468	1145	1906
Bayfield	846	1139	1112	891	1596
Wausau	1113	1394	1412	1178	1933
Medford	1058	1349	1273	1123	1868
Crivitz	1114	1330	—	1197	1967
Crandon	999	1255	1156	1046	1774

Method: ModifiedB50; Sine48; ModifiedB40 as of March 1, 2008. NORMALS based on 30-year average daily temps, 1971-2001.

are relatively common in most fields and comprise about 50-75% of sweep net collections.

PEA APHID: Surveys of alfalfa in the southern and central districts showed counts below 3 per sweep, with the exception of Adams County where numbers varied from 4-5 per sweep. The highest count of 8 per sweep was detected near Otsego in Columbia County.

GRASSHOPPERS: Moderate to high numbers exist in a few fields in the sandy central areas. Average counts in Adams, Columbia, Juneau and Marquette counties were 2-3 nymphs per 10 sweeps, but exceptional fields contained as many as 15 per sweep. Hot and dry weather, such as has occurred recently, is very favorable for grasshopper development and activity.

ALFALFA CATERPILLAR: Larvae ranging from ½-1¼ inches long were collected in Adams, Columbia and Juneau counties at the rate of 1-4 per 10 sweeps. Low

numbers of the adults (pale yellow butterflies) were observed in the same fields.



Alfalfa caterpillars collected in sweep net

Krista Hamilton DATCP

MARGINED BLISTER BEETLE: This species was detected in 2 of 14 alfalfa fields surveyed in Adams and Columbia counties. Surveys of fields ranging from 12-24 inches tall in the Grand Marsh area of Adams County failed to reveal any additional beetles.

CORN

EUROPEAN CORN BORER: Development has progressed rapidly in the past week. Pupae and mature 5th instar larvae were found in Dane and Columbia counties and large 4th instar larvae were noted as far north as Arkdale in Adams County. Damage by the first generation was light in the southern and central fields surveyed, with 2-14% of the plants showing evidence of feeding, and the occasional field with 19-24% of the plants infested. Many of the youngest fields, particularly those replanted late in June, had virtually no larval population. Tunneling into stalks and unemerged tassels is occurring, and consequently control treatments are ineffective until the second generation of larvae begin to appear in the next week. Corn that is behind normal in growth will be most attractive to female moths of the second flight of corn borers.

ARMYWORM: Low populations have been noted in corn, alfalfa and oats. This insect appears to be a localized problem thus far, but a watchful eye is recommended since the second generation should become increasingly conspicuous in southern corn in the next week. Counts of 1-3 per 10 sweeps were collected from scattered

alfalfa fields in the south central and central districts. Damage to corn has been infrequent, usually with only a few of the marginal rows showing trace amounts of feeding. Based on the irregular geographical pattern of the populations and the variety of crops affected, the potential for outbreaks cannot be accurately predicted. Isolated fields may develop populations high enough to warrant treatment, and it is imperative that this insect be detected early, before significant damage occurs.

WESTERN BEAN CUTWORM: The emergence of western bean cutworm moths escalated this week with the capture of over 641 moths at 110 Wisconsin trap locations. A pheromone trap high count of 157 moths was registered near Princeton in Green Lake County, and a black light trap high count of 97 moths was reported from Sparta in Monroe County. According to the degree day model for this species, the numbers reported represent 25% emergence (1,319 degree days) in the southeast and west central counties, 50% emergence (1,422 degree days) in the south central counties, and 75% emergence (1,526 degree days) in advanced southern areas of the state. Egg deposition is occurring in corn and fields should be inspected at this time for eggs and young larvae.



Western bean cutworm pheromone trap

Krista Hamilton DATCP

CORN ROOTWORM: Adults of the western corn rootworm species were noted in Adams, Columbia and Dane counties this week. Surveys revealed low counts of 1 beetle per 25 plants in the corn fields checked. The first northern corn rootworm beetles of the season were observed on July 23 feeding in the corn silks in a Columbia County field. Peak emergence remains about 2-3 weeks away.

SOYBEANS

JAPANESE BEETLE: Observations indicate that this insect is causing moderate to severe (20-40%) defoliation of soybeans in Rock and Walworth counties and light (10-15%) defoliation in Lafayette County. The economic threshold for Japanese beetle and other leaf feeding insects in soybeans is 20% defoliation between bloom and pod fill.

SOYBEAN APHID: A statewide survey is currently underway. Preliminary results from 122 soybean fields in the southern and central districts indicate that aphid densities are mostly low, with significant populations (>250 aphids per infested plant) encountered in only 4 fields distributed in Adams, Fond du Lac, Lafayette and Racine counties. Densities per 20 plants examined ranged from 1-250 aphids on 25-90% of the plants in the southwest district, 1-166 aphids on 25-100% of the plants in the south central district, 1-325 aphids on 20-85% of the plants in the southeast district, 1-330 aphids on 100% of the plants in the central district, and 1-318 aphids on 30-100% of the plants in the east central district. The highest population this week was 250-330 aphids per plant on 25% of the plants in Adams County, where parasitism by the braconid wasp *Lysephlebus testaceipes* was noted. Several of the fields surveyed in Adams, Columbia, Dodge, Fond du Lac, Juneau, Kenosha, Ozaukee, Racine, Rock, Sheboygan, Walworth and Winnebago counties were 100% infested with moderate densities of aphids, and some of these may develop economic populations within the next 2 weeks. No economic densities of 250 aphids per plant on 80% of the plants were detected from July 18-24.



Soybean aphids

Krista Hamilton DATCP

WHITE DWARFS: The “white dwarfs” referred to in last week’s bulletin are a distinct morphological form of soybean aphid thought to develop in response to physiological stress, possibly hot temperatures, high humidity, reduced nutritional quality, predator populations, shorter day-length, or a combination of factors. These tiny, white aphids should be included in population estimates to determine if the economic threshold has been reached.

GRASSHOPPERS: Nymphs have become more prevalent in the southern and central areas. A particularly heavy population of 21 per sweep was observed in a soybean field near the town of Easton in Adams County, where 90% of the plants showed defoliation ranging in severity from 5-65%. Evidence of feeding was found in several other soybean, alfalfa and corn fields surveyed, but to a lesser degree. It is doubtful that all of the eggs have hatched and more nymphs should be expected in the next few weeks.



Defoliation caused by grasshoppers

Krista Hamilton DATCP

FRUITS

APPLE MAGGOT: High captures of 13 flies on an unbaited red sphere and 14 flies on a baited red sphere were reported from Gays Mills in Crawford County and Plymouth in Sheboygan County during the period of July 17-24. Peak emergence of flies may occur in orchards with sufficient soil moisture levels following the accumulation of 1,600 degree days (base 50°F) next week.

CODLING MOTH: Pheromone traps should be checked frequently in the week ahead to determine the BIOFIX, or

continuous capture of moths (of the second flight). Orchards in southern Wisconsin are within one week of this event.

APPLE CURCULIO: Non-economic levels of damage attributed to this pest have been observed in Racine County. The apple curculio reproduces more readily in apples than the plum curculio, and Orchard IPM Specialist John Aue warns that it may deserve closer scrutiny in the future.

PLUM CURCULIO: The oviposition scars evident on fruits in southern Wisconsin suggest that plum curculio activity occurred later than usual this season, likely within the last few weeks.

OBLIQUEBANDED LEAFROLLER: Larvae ranging widely in development from 1st - 5th instar were present in southern orchards as of July 19, according to John Aue.

SPOTTED TENTIFORM LEAFMINER: The peak of the second flight has passed in most southern orchards. By contrast, high trap counts reported from Bayfield, Brown, Marinette and Sheboygan counties indicate that the second flight is gaining momentum in east central and northern Wisconsin. Sapfeeder larvae should be detectable on the undersides of apple leaves in those orchards where large flights were registered in the last 2 weeks. The economic threshold for second generation leafminers is 1 mine per leaf.

REDBANDED LEAFROLLER: Although large flights of moths continue to be registered in the southern half of the state, hatch of second generation larvae has not yet occurred.

JAPANESE BEETLE: Orchardists near Rochester in Racine County and Burlington in Kenosha County have reported captures as high as ½ a jar Japanese beetles per day, and John Aue noted that these insects had devoured plum, tart cherries, wild grapes, and raspberries in a northern Illinois orchard. Even the smallest blemish or surface injury to fruit attracts large concentrations of beetles.

VEGETABLES

CABBAGE LOOPER: An increase from 5 to 49 cabbage looper adults was noted at the Bourbonnais, IL trap site

in the past week. Counts at Chippewa Falls remained static at 1 moth.

SQUASH VINE BORER: Moths were observed depositing eggs on zucchini plants at a home garden in northeastern Dane County on July 20. Ordinarily, pumpkins, squash, gourds, and other vine crops should be examined for evidence of larval feeding from 900-1,000 degree days (base 50°F), but this standard has been surpassed statewide. Young plants are most susceptible to infestation by the larval borers, which feed for a period of 14-39 days.

WEEDS

WEED SURVEY IN SOYBEANS: Of the 30 fields included in the systematic survey of weeds in soybeans, only 2 were not treated with herbicides or cultivated as of July 21. In one of the fields, the combination of grass species averaged 26 inches tall and giant ragweed plants averaged 30 inches (see image below), while the soybeans averaged 24 inches tall. Competition from weeds continues to reduce yields in those fields where the weeds have not been effectively managed, although the losses are not yet apparent. Research has demonstrated that season-long weed competition may reduce plant height and grain yield by as much as 10% and 68%, respectively.



Weedy soybean field

Clarissa Hammond DATCP

MUSK THISTLE: Mature seeds are beginning to develop on plants in southern areas of the state. Further spread of this biennial thistle can be prevented now by removing the seed heads. Measures that may contribute to seed

dispersal, such as mowing, should be avoided while the seeds are present.



Musk thistle maturing

Clarissa Hammond DATCP

SPOTTED KNAPWEED: Flowering spotted knapweed plants are prevalent along roadsides and in the margins of fields from Waukesha to Adams County. This short-lived and highly invasive perennial plant overruns open areas and pastures, crowding out native species by exuding the allelopathic substance *catechin* from its roots, which inhibits the growth of adjacent plants. Control options include physical removal, mowing, repeated herbicide applications, burning, tillage and introducing biological control agents. Persons interested in moving biological agents for the control of spotted knapweed into Wisconsin must first apply for a Federal PPQ 526 permit and a State of Wisconsin 414 permit. Please direct questions regarding the release of biological control agents to Clarissa Hammond at (608) 244-4544 or clarissa.hammond@wi.gov.



Spotted knapweed

Clarissa Hammond DATCP

VENICE MALLOW: Seedlings ranging from 4-6 inches tall were observed in the bare soil gaps within several soybean fields in Walworth, Racine and Kenosha counties. Venice mallow emerges comparatively later than other agricultural weed species and is not particularly competitive, except in fields where emergence was poor and the distribution of plants is irregular. Its showy flowers are visible for only a few short hours before the petals drop.

NURSERY & LANDSCAPE

JAPANESE BEETLE: Large numbers of beetles were observed in Dane and Jefferson County nurseries, where substantial defoliation to several varieties of trees was apparent. Adults of this species skeletonize the foliage, leaving only the network of veins, while the subterranean grubs feed on roots of grasses and frequently damage turf in lawns, parks and golf courses. Of the range of control measures that may be directed against the adult or larval stages (i.e. trapping, insecticides, milky spore disease, insect parasitic nematodes, etc.), none is as effective as physically removing the adults from plants in the early morning or late evening hours, when they are less active. The beetles may be killed by dropping them into a container of soapy water or by placing them in a plastic bag and freezing the contents for a minimum of 72 hours.



Japanese beetles and feeding damage

Liz Meils DATCP

PHOMOPSIS BLIGHT: Symptoms of this juniper disease were observed by inspectors in Brown and Dane counties this week. Diagnostic characteristics are tip blight, shoot blight, twig cankers and dieback, all of which may occur on juniper, arborvitae, fir, larch, false-cypress,

pine or yew. The most common symptom is tip blight. The occurrence of phomopsis blight can be reduced by pruning out and destroying diseased branches and twigs by cutting 4-6 inches below the diseased area and disinfecting pruning shears between each cut. Maintaining adequate spacing and airflow between plantings will also help to prevent it from spreading.



Phomopsis tip blight on

Liz Meils DATCP

FALL WEBWORM: Enlarging webs are evident on ornamental crabapples in Dane County and on other tree species throughout the south central counties. A single web may envelop numerous branch tips and measure several feet across. Removal and destruction of the web is the best way to eliminate the larvae. Fall webworm populations are naturally regulated by more than 50 different species of parasites and 36 species of predators.

APPLE SCAB: This fungal disease of apple and ornamental crabapple trees was found in light to moderate amounts on crabapples in Dane, Brown, Jefferson and Washington counties. Scab development is favored by wet, cool weather in spring and early summer. Generally fungicide applications are not warranted in nursery settings, except in years when the disease is particularly severe. Fallen leaves should be removed in autumn to reduce the number of spores that can start the infection cycle the next year.

FOREST

GYPSY MOTH SPRAY PROGRAM: The final pheromone flake applications proposed for sites in Ashland and Bayfield counties were delayed due to inclement

weather. Approximately 6,090 acres received flakes on July 18, concluding aerial applications for the year. A total of 31,064 acres in 10 counties were treated with *Bacillus thuringiensis* var. *kurstaki* (Btk) and roughly 48,341 acres in seven counties were treated with pheromone flakes in 2008.

GYPSY MOTH TRAPPING PROGRAM: As of July 23, a total of 828 male moths were detected in pheromone traps distributed in 12 counties south of Highway 10. The emergence of gypsy moths has been slow this summer, except in the most heavily infested counties where the adult flight period began more than one week ago. Moths have been reported as far north as Jackson, Marathon and Marinette counties. Approximately 29,891 traps are in place in the western and central areas of the state, as well as in Brown, Douglas, Marinette and Milwaukee counties.

TRAPPING NETWORKS

BLACK LIGHT TRAPS: Emergence of western bean cutworm adults accelerated for the second week at the southern and west central trap locations, while the first moths of the season were registered near Manitowoc and Wausau. Egg deposition in corn and other susceptible hosts is in progress. The high count for the July 18-24 reporting period was 97 moths at Sparta in Monroe County.

CORN EARWORM TRAPS: No large flights of moths were reported this week, but network cooperators should continue to monitor pheromone traps closely for the forthcoming arrival of migrant adults. Cumulative weekly counts were as follows: Chippewa Falls (4); Coon Valley (0); Cottage Grove (2); Janesville (0) Lancaster (0); Madison (2); Manitowoc (0); Marshfield (1); Sparta (2); Stoughton (4); Sun Prairie East (2); Sun Prairie North (1); Wausau (9).

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 18 - 24

COUNTY	DATE	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	AM RED ⁵	AM YELLOW ⁶
Bayfield	7/18-7/24	Apple Hill			1.5			0
Bayfield	7/18-7/24	Bayfield Apple						0
Bayfield	7/18-7/24	Blue Vista	774		4.6	16	2.3	0
Bayfield	7/18-7/24	Erickson's			2.5			0
Bayfield	7/18-7/24	Hillcrest			2	3.5		0
Bayfield	7/18-7/24	Lobermeier	77	5	0	8	0	0
Bayfield	7/15-7/22	Oriente	19	0	0	3	0	0
Brown	7/18-7/24	Oneida	1540	86	11	5	3	0
Crawford	7/18-7/24	Gays Mills	411	86	11	0	13	0
Dane	7/17-7/24	Deerfield	151	55	8	1	1	0
Dane	7/18-7/24	Stoughton	21	25	5	1	0	3.5
Dane	7/18-7/24	West Madison	60	0	6	0	0	0
Dodge	7/18-7/24	Brownsville	14	37	1	1	0	0
Fond du Lac	7/18-7/24	Campbellsport 1	50	30	0	5	0	0
Fond du Lac	7/18-7/24	Campbellsport 2	50	75	0	0	0	0
Fond du Lac	7/18-7/24	Malone	160	55	1	0	0	0
Green	7/18-7/24	Brodhead	12	24	2	0	0	0
Iowa	7/18-7/24	Mineral Point	43	160	0	0	0	0
Kenosha	7/18-7/23	Burlington	117	39	0.67	0	0.33	0.17
Marinette	7/18-7/24	Niagara	1119	15	4	7	0	0
Marquette	7/18-7/24	Montello	144	5	0	0	0	0
Ozaukee	7/18-7/24	Mequon	0	6.5	1	0	**0.3 *0	0
Pierce	7/18-7/24	Beldenville	110	21	10	0	0	1
Pierce	7/17-7/21	Spring Valley	459	57	1.3	0	0	0
Racine	7/11-7/24	Raymond	1283	155	19	4	0	0
Racine	7/18-7/24	Rochester	275	45	0.93	1	*2.1	0
Richland	7/17-7/23	Hill Point	508	46	8	4	**4.5	1
Sheboygan	7/18-7/24	Plymouth	684	132		17	**14	1
Walworth	7/18-7/24	East Troy	15	4	3	5	0	0
Walworth	7/18-7/24	Elkhorn	20	5	0	3	2	1
Waukesha	7/11-7/24	New Berlin	549	33	27	0	0	0

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵Apple maggot red ball; ⁶Apple maggot yellow board; *Unbaited red ball; **Baited red ball.

COUNTY	DATE	SITE	ECB ¹	TA ²	BCW ³	SCW ⁴	DCW ⁵	CE ⁶	CEL ⁷	WBC ⁸	FORL ⁹	VCW ¹⁰
Chippewa	7/16-7/23	Chipp. Falls	3	1	0	0	0	0	0	0	0	0
Columbia	7/17-7/24	Arlington	0	3	0	0	2	0	0	19	1	0
Dane	7/17-7/24	Mazomanie	0	2	0	0	0	0	0	72	2	0
Grant	7/16-7/23	Lancaster	0	9	1	0	0	0	12	2	12	0
Manitowoc	7/17-7/24	Manitowoc	5	14	0	0	0	0	12	1	9	0
Marathon	7/17-7/24	Wausau	2	6	1	3	4	1	2	3	17	0
Monroe	7/17-7/23	Sparta	3	0	0	0	0	0	0	97	0	0
Rock	7/16-7/23	Janesville	0	29	0	0	0	0	25	7	7	0
Walworth	7/17-7/24	East Troy	0	2	0	0	2	0	0	9	6	0
Wood	7/17-7/24	Marshfield	35	10	2	0	2	3	6	1	7	3

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