

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

A wet and turbulent weather pattern prevailed since the last report. Several rounds of thunderstorms beginning on the evening of June 21 and continuing nightly through June 26 produced torrential rain and intense flash flooding across southwestern and south-central Wisconsin. Rainfall amounts in excess of eight inches were reported from many locations during the six-day event, notably 13.09 inches in the City of Boscobel in Grant County, which sustained unprecedented urban flooding. The heavy downpours of 1-2 inches per hour washed out roads and caused extensive damage to crops, farmlands and infrastructure. Preliminary damage estimates are well into the millions of dollars, though several more weeks will be needed to fully assess the full impact on 2013 crop production.

LOOKING AHEAD

SQUASH VINE BORER: Moth emergence and egg laying are anticipated during the first week of July in the southern areas, about the time chicory blooms. Pumpkins, gourds, squash and other vine crops should be examined daily for eggs and evidence of boring from 900-1,000 degree days (base 50°F). Insecticidal controls must be applied to the stems of plants when the adults are first noticed and while runners are less than two feet long.

Repeated applications may be required throughout the three-week oviposition period.

EUROPEAN CORN BORER: Larvae resulting from the spring flight are in the early instars and fresh whorl feeding injury is evident in non-Bt corn and Bt refuge areas. The optimal treatment window for first generation corn borers has opened in the southern and west-central areas of the state with the accumulation of 800 degree days (modified base 50°F).

WESTERN BEAN CUTWORM: The annual trapping survey is now in progress and the results obtained over the next eight weeks are expected to reveal the peak emergence period, potential problem areas and any significant changes in the state moth count. No moths were registered in the 95 pheromone traps set as of June 26.

JAPANESE BEETLE: The first beetles of the 2013 season could emerge in the next two weeks. Damage to fruits, perennials, nursery stock and field crops should be anticipated throughout July and possibly into August.

GRANULATE CUTWORM: This noctuid moth, which bears a close resemblance to the western bean cutworm adult, may appear in black light trap collections in advance of the western bean cutworm. The granulate cutworm is noticeably smaller, about $\frac{3}{4}$ of the size of the western bean cutworm moth. The annual flight of western bean

cutworm adults is unlikely to begin until the first or second week of July.

CORN EARWORM: Larvae from an early June migration of moths have been detected in corn in south-central Wisconsin. Cornfields should be checked regularly for this pest and treatment considered if 50% or more of the whorls are infested.

FORAGES

ALFALFA WEEVIL: Larvae populations are decreasing in second crop alfalfa. The average count in the last reporting period was very low at 0.03 per sweep and leaf feeding ranged from 5-10%. Damage is expected to subside by early July as the remaining third and fourth instar larvae enter the non-feeding pupal stage.

PEA APHID: Counts of this insect have also declined with the rainy, humid weather. Surveys in Dane, Green, Iowa, Richland, Sauk and Vernon counties yielded only 1-3 per sweep and an average of less than one per sweep. The humid and wet conditions experienced in the last week favor several fungal pathogens that regulate aphid populations.

PLANT BUG: Surveys conducted in the southern half of the state are showing low populations of 0.1-1.7 per sweep. The economic threshold is five per sweep for mixed counts of adults and nymphs. Adults are more abundant than the nymphs in most fields.



Alfalfa plant bug

fotomie2009 flickr.com

POTATO LEAFHOPPER: Alfalfa surveyed in the south-central and southwest areas contained low to moderate

DEGREE DAYS JANUARY 1 - JUNE 26

LOCATION	50°F	2012	NORM	48°F	40°F
Dubuque, IA	938	1354	1039	986	1603
Lone Rock	901	1343	—	947	1547
Beloit	1015	1398	1051	1030	1696
Madison	892	1319	998	939	1535
Sullivan	906	1304	973	945	1548
Juneau	824	1247	—	893	1447
Waukesha	786	1142	—	846	1395
Hartford	754	1129	—	816	1354
Racine	739	1086	—	806	1349
Milwaukee	718	1067	862	782	1314
Appleton	738	1120	918	802	1313
Green Bay	670	1035	852	733	1240
Big Flats	770	1182	—	820	1347
Hancock	777	1179	976	834	1348
Port Edwards	733	1123	948	792	1286
La Crosse	832	1302	1099	893	1445
Eau Claire	753	1149	976	821	1308
Cumberland	660	964	885	708	1169
Bayfield	439	744	—	444	855
Wausau	669	991	870	713	1179
Medford	674	984	785	727	1188
Crivitz	616	954	—	658	1139
Crandon	615	873	686	633	1077

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

counts of 0.1-1.6 per sweep. Circumstances have not justified treatment in any field surveyed as of June 26, but reproduction is occurring and populations are on the increase. Economic thresholds for this pest are as follows: 0.5 per sweep for 3- to 7-inch alfalfa, 1.0 per sweep for 8- to 11-inch alfalfa, and 2.0 per sweep for alfalfa 12 inches or taller.

MEADOW SPITTLEBUG: The adult stage of this insect was swept from alfalfa in La Crosse and Monroe counties, signaling that the population has matured and spittle masses should not reappear until next spring. The highest number collected from second crop alfalfa in the past week was one per sweep.

CORN

TRUE ARMYWORM: Environmental conditions remain favorable for armyworm infestations. Grassy corn and peas are common across the state and many acres of

wheat are lodged from recent storms. Consultants and growers should continue to monitor these crops through mid-July for developing problems. Minor infestations in corn were detected in Dane, Green, Richland and Vernon counties in the last week, as well as in Clark, Eau Claire, Jackson, Portage and Wood counties the week before.

STALK BORER: Damage is apparent on a small percentage of plants in individual fields, principally along the margins. Less than 3% of the plants were affected in corn checked in Richland, Rock and Sauk counties, although in Green County, some fields were noted to have 8% of the plants in the edge rows infested with third- and fourth-instar larvae.

CORN EARWORM: Surveys of V3-V7 field corn found light corn earworm infestations in Dodge, Green and Iowa counties, with larvae ranging in size from ½- to ¾-inch long. Leaf feeding by the early-instar caterpillars was noted on 1-4% of the plants in four of 45 fields sampled. The larvae observed are the result of an early migration of moths that began on May 29. Significant populations of corn earworm larvae seldom occur this early in Wisconsin and specific thresholds have not been established for vegetative-stage field corn, but treatment decisions can be made based on the percentage of fresh whorl feeding and the presence of live larvae. A comparable recommendation for the true armyworm calls for treatment when 50% of the whorls show injury and contain larvae.



Corn earworm feeding

Krista Hamilton DATCP

YELLOW-STRIPED ARMYWORM: Localized populations have been noted in Dane and Green counties and larvae are appearing in alfalfa fields. Damage attributed to this caterpillar has not surpassed economic levels, but the

combination of armyworms, corn earworms and variegated cutworms could push infestation levels above-threshold. Larvae of all three species are present in scattered cornfields at this time.



Yellow-striped armyworm

blackbird.smugmug.com

SLUGS: Reports indicate slug defoliation is common in cornfields, and recent surveys found minor leaf feeding on approximately 25-70% of plants in a few sites in Columbia, Dodge, Fond du Lac, Richland and Sauk counties. The problem is unlikely to subside until drier weather returns and control may be warranted if 40% or more of plants show defoliation, wet conditions persist, and the slugs are actively feeding.

EUROPEAN CORN BORER: The spring flight has peaked in the southern two-thirds of the state. Oviposition on corn, vegetable and weed hosts should have intensified with the warmer temperatures and high humidity in the last week, although the heavy rains on the nights of June 21-26 may have interfered with moth oviposition activity. According to the European corn borer degree-day model, the first flight is expected to peak around 631 degree days (modified base 50°F).

SOYBEANS

SOYBEAN APHID: Surveys indicate the soybean aphid population is widespread but low. Densities in 37 soybean fields sampled from June 20-26 varied from 1-27 aphids per infested plant, although two fields, one south of Brooklyn in Green County and another near Dodgeville in Iowa County, were found to have individual plants with 142-168 aphids. Infestation rates varied from 1-44%. Soybean aphid pressure is increasing, emphasizing the

need for sequential scouting earlier than usual this year. The economic threshold remains at 250 aphids per plant on approximately 80% of plants in the field.



Soybean aphids

Krista Hamilton DATCP

ROSE CHAFER: Light defoliation caused by these insects was observed this week in soybeans in Juneau and Monroe counties. Currently the infestations involve fewer than 5% of plants. Beetles were also reported on a variety of ornamental and garden plants in La Crosse and Waupaca counties. Rose chafer activity and leaf skeletonization should increase over the next 3-4 weeks, especially in sandier areas of the state.

FRUITS

APPLE MAGGOT: Degree day accumulations in south-central and southwestern Wisconsin are appropriate for fly emergence. Red sphere and yellow sticky traps should be placed now to detect the first adults of the season. Apple maggot sprays are most effective when applied 7-10 days after the first fly has emerged, with later applications following at 10- to 14-day intervals as long as flies are collecting on traps. The treatment threshold is five flies per trap per week for traps enhanced with an ammonia attractant and one fly per trap per week for unenhanced traps.

SPOTTED TENTIFORM LEAFMINER: The second flight began this week, with pheromone trap counts ranging from 3-891 per trap. The peak in moth activity should occur by July 10 throughout most of southern Wisconsin and a week or more later in the southeast, central and northern areas. Apple orchards with populations greater than one mine per leaf or a history of infestation are candidates for control of second generation leafminer larvae.

CODLING MOTH: The spring flight accelerated in some orchards and slowed in others. Twelve of the 31 monitoring locations registered an increase in moth counts from June 20-26, while 19 sites reported fewer moths. Apple growers should be aware that larvicides applied before heavy rains began on June 21 are unlikely to provide adequate protection against first brood larvae entering fruit and may need to be reapplied, particularly in areas that received two or more inches of rain. Scouting fruits for tiny, circular entry wounds is recommended in the week ahead.

ROSE CHAFER: This vineyard and orchard pest is emerging and may soon skeletonize grape leaves and consume developing fruit clusters in Wisconsin vineyards. Biweekly scouting is advised as soon as the first beetle is observed for vineyards in sandy areas of the state and those with past rose chafer problems. Although no formal economic threshold has been developed, an average of two beetles per vine has been suggested as the basis for initiating controls. If chemical intervention is required during the 3- to 4-week adult emergence period, systemic soil drench insecticides are usually most effective. Commercially available traps attract more beetles from surrounding areas and are not recommended for use in vineyards.



Rose chafer beetles

Krista Hamilton DATCP

VEGETABLES

STRIPED CUCUMBER BEETLE: Adults are expected to become increasingly active over the southern half of the state by early July. Growers of cucurbits should begin inspecting plants for these yellow and black striped beetles that transmit bacterial wilt and infect cucumbers,

melons and squash through feces or contaminated mouthparts. The first symptom of bacterial wilt on cucumber and melon is a distinct flagging of lateral and individual leaves. Early beetle control may be justified in home gardens and larger commercial muskmelon or cucumber operations for populations of 4-5 beetles per 50 plants.

EUROPEAN EARWIG: This insect is abundant this year in vegetable and flower gardens, greenhouses and basements, and is likely to remain so for several more weeks. Reports of damage to arugula, beans, lettuce, hostas, marigolds, potatoes and Swiss chard have been received from Dane, La Crosse and Sauk counties. Rainy weather this season is likely contributing to the high populations of this nocturnal, moisture-favoring pest.



European earwig

Pondman2 flickr.com

CORN EARWORM: The pheromone traps near Green Lake, Janesville and Ripon registered another 33 moths in last reporting period, indicating the early migration is still under way. Larvae resulting from June flights such as this one are rarely a problem in Wisconsin, except when large infestations develop in early-planted sweet corn. Low counts of earworm caterpillars are appearing in corn and were noted in Dodge, Green and Iowa counties this week.

NURSERY & FOREST

OAK LEAF BLISTER: This common oak disorder, identifiable by blisters scattered over upper leaf surfaces and corresponding gray depressions on the lower surfaces, was observed on red oak in St. Croix County. The oak leaf blister fungus infects only expanding leaves in the

spring, while mature leaves are not susceptible. Blisters turn from yellow to reddish brown with pale yellow margins, eventually becoming dull brown with age. Heavy infection degrades the appearance of trees, but rarely endangers tree health. In circumstances where prevention is important, a fungicide spray can be applied in early spring just before buds begin to swell. Fungicides applied after bud break are ineffective.



Oak leaf blister on red oak

Konnie Jerabek DATCP

POWDERY MILDEW: The perennials astilbe, evening primrose, monarda and phlox at nurseries in Milwaukee, Polk, Rock and Washington counties were infected with this common fungal disease. Powdery mildew is characterized and easily diagnosed on most plants by a grayish white powdery dusting on the upper leaves, which later causes foliage to turn yellow and senesce prematurely. Cultural practices that increase air circulation can reduce mildew development.

WHITE PINE WEEVIL: Close inspection of spruce and pine trees for evidence of larval infestation, such as wilted leaders and brown, discolored needles on the top lateral growth is recommended at this time. This insect can be controlled by pruning the infested area 6-10 inches below the wilted leader before adults emerge in July. Pruned tops should be removed and disposed of away from fields to prevent reinfestation, as the adults will continue to emerge from cut leaders.

BAGWORM: The distinctive cone-shaped "bags" of this insect were noted on arborvitae in Jefferson County, where eggs will soon be hatching. Bagworms attack both deciduous and evergreen trees, but needled evergreens such as arborvitae and juniper are favored. Larvae spread by wind or by crawling to nearby plants, as well

as on infested nursery stock. Manual removal of the bags (which contain overwintering eggs) from fall through spring is the preferred control method for localized populations. For larger infestations, insecticides are most effective when the larvae are young.



Bagworm on arborvitae

Marcia Wensing DATCP

PARROT FEATHER: Nursery inspectors found the invasive plant parrot feather (*Myriophyllum aquaticum*) for sale at retailers in Douglas and Pierce counties. This aquatic species invades shallow lakes, ponds, ditches, and river backwaters and is classified as “Prohibited” under the Wisconsin DNR Chapter NR 40 rule. With certain exceptions, the transport, possession, transfer and introduction of any Prohibited species is banned in Wisconsin. Accordingly, the parrot feather was removed from the sales floor and returned to the out-of-state supplier who was also notified of Wisconsin’s NR 40 rule.

Parrot feather, *Myriophyllum aquaticum*

Konnie Jerabek DATCP

because some may be available from out-of-state sources. Refer to the following website for a list of Chapter NR 40 invasive species: <http://dnr.wi.gov/topic/invasives/classification.html>. Additionally, summaries of quarantine regulations by state are available on the National Plant Board website under Laws and Regulations.

DIESEL FUMES DAMAGE: The large, conspicuous areas of brownish, dead needles appearing on evergreens on a St. Croix County Christmas tree farm were diagnosed by the DATCP Northwest Region Nursery Inspector as diesel fume damage resulting from diesel fumes being exhausted in close proximity to the needles of evergreens. Symptoms can develop in just 1-2 minutes whenever diesel fumes from Bobcat tractors or other machinery used to dig and move evergreen stock from fields is emitted too close to the trees. Damaged needles may be trimmed out, but growers should be aware of the symptoms of and potential for damage by diesel machinery in Christmas tree fields.



Diesel fumes damage to white pine

Konnie Jerabek DATCP

It is important for nursery operators and brokers to become familiar with prohibited and restricted species

APPLE INSECT & BLACK LIGHT TRAP COUNTS JUNE 20 - 26

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	AM RED ⁵	YELLOW ⁶
Bayfield	Keystone	7	8	0	0		
Bayfield	Oriente	38	8	0	0		
Brown	Oneida	325	1	22	16		
Chippewa	Chippewa Falls	—	2	10	28		
Columbia	Rio	300	0	4	5		
Crawford	Gays Mills	39	0	3	0		
Dane	Deerfield	76	1	1	9		
Dane	McFarland	0	0	2	2		
Dane	Mt. Horeb	49	11	23	6		
Dane	Stoughton	26	8	7	19		
Dane	West Madison	4	0	0	2		
Fond du Lac	Campbellsport	11	0	0	1		
Fond du Lac	Malone	5	0	6	9		
Grant	Sinsinawa	18	0	12	7		
Green	Brodhead	0	0	2	6		
Iowa	Mineral Point	218	16	11	2		
Jackson	Hixton	43	0	3	4		
Kenosha	Burlington	130	10	0	4		
Marinette	Niagara	0	0	2	11		
Marquette	Montello	891	0	3	9		
Ozaukee	Mequon	0	0	2	3		
Pierce	Beldenville	3	1	3	0		
Pierce	Spring Valley	0	0	18	9		
Polk	Turtle Lake	0	2	37	13		
Racine	Raymond	124	2	10	21		
Racine	Rochester	90	11	8	4		
Richland	Hillpoint	240	0	8	6		
Sheboygan	Plymouth	20	16	12	2		
Walworth	East Troy	3	0	0	3		
Walworth	Elkhorn	20	0	0	6		
Waukesha	New Berlin	500	0	29	32		

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵Apple maggot red ball; ⁶Unbaited 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	3	2	0	0	0	0	0	0	0	0
Columbia	Arlington	0	1	0	0	0	0	4	0	0	0
Crawford	Prairie du Chien	0	0	0	0	0	0	0	0	0	0
Dane	Mazomanie	0	0	0	0	0	0	0	0	0	0
Fond du Lac	Ripon	2	7	0	0	0	2	0	1	0	0
Manitowoc	Manitowoc	0	12	0	0	0	0	2	0	0	0
Marathon	Wausau	0	6	1	0	0	0	5	0	0	0
Monroe	Sparta	6	0	0	0	0	0	0	0	2	0
Portage	Plover	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	0	8	0	0	0	0	6	0	3	0
Walworth	East Troy	0	2	1	0	0	1	2	0	0	0
Wood	Marshfield	1	25	0	3	0	0	6	0	0	0

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