

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

Mild, dry weather replaced recent wetness across the state. After a rainy start to the month, drier conditions allowed fieldwork to resume in full. Daytime temperatures were above normal for the week and ranged from the lower 60s to mid-80s. The weather was very suitable for alfalfa harvesting, weed management and planting of corn, oats, soybeans and snap beans. According to the USDA NASS Wisconsin Field Office, corn and soybeans were 57% and 16% planted, respectively, as of May 14, well ahead of last season's pace for both crops. Prospects for winter wheat are also mostly favorable in the main production areas of the state. Warmer temperatures during the week accelerated insect development and reproduction, resulting in increased pest pressure in field, fruit and vegetable crops. Insects in alfalfa have shown a marked increase since early May, although numbers are expected to be greatly reduced by current harvest operations.

LOOKING AHEAD

EUROPEAN CORN BORER: Moths are depositing eggs on vegetables and weed hosts at southern and central locations where 450 degree days (base 50°F) were recently surpassed. Snap beans, lima beans, peppers and potatoes are at increased risk of infestation since

corn taller than 18 inches is not yet available. The spring flight of moths may peak as early as next week at advanced sites.

EASTERN TENT CATERPILLAR: Many tents are now vacant and pupation has begun. Complete defoliation of individual roadside trees is apparent in all areas of the state. The first adults could begin collecting in black light traps by May 25, following the accumulation of 725 degree days (base 50°F).

BLACK CUTWORM: Economic damage to corn was noted in northern Dane and Rock counties from May 14-15. Based on the DATCP surveyor's account, 3-13% of the plants showed signs of feeding and a few plants had been cut just below the soil surface. The larvae responsible for the damage could not be found. This development emphasizes the need for close inspection of corn and other vegetable crops. A rescue treatment is warranted if 3% or more of plants are damaged.

STALK BORER: Larvae are expected to begin migrating from grassy areas into corn in the next two weeks. The recommended scouting procedure is to spot check the marginal 4-6 rows for plants with holes in the leaves, wilted whorls and other signs of damage, starting at 1,400 degree days (base 41°F). Control measures may be in order for corn fields with infestation rates of 5-10%. Stalk borer degree day accumulations through May 16

were as follows: Madison 1,047, La Crosse 1,064, and Wausau 843.



Stalk borer larva

jclucier flickr.com

POTATO LEAFHOPPER: Nymphs are appearing in alfalfa in the southern and west-central counties. Populations are well below the economic threshold of 1.0 per sweep in the first crop, but with the potential for leafhoppers to multiply under present hot conditions, regrowth alfalfa should be scouted consistently for an abrupt increase in numbers.

TRUE ARMYWORM: Larvae were swept in low numbers from alfalfa in Monroe and Sauk counties from May 11-16. The ¼- ½ inch caterpillars are the offspring of moths that arrived last month. Black light traps also registered another 259 moths in the past week and growers should anticipate more armyworms appearing in fields by early June.

FORAGES

PLANT BUG: Adults and nymphs were found in low numbers of 0.1-1.2 per sweeps again this week. Nymphs were noted in 21 of 39 fields (54%) checked in southern and central counties.

ALFALFA WEEVIL: Surveyed fields in Dane, Juneau, Monroe and Sauk counties contained populations of 1-16 of first- to third-instar larvae per sweep, with an average of 4 per sweep. Larval infestations of consequence were confined mostly to northwestern Dane County where leaf tip damage averaged 40%, but ranged as high as 80%. Lower numbers of 0.3-1.1 per sweep were observed in Brown, Calumet, Manitowoc, Outa-

DEGREE DAYS JANUARY 1 - MAY 16

LOCATION	50°F	2011	NORM	48°F	40°F
Dubuque, IA	600	278	373	617	1110
Lone Rock	595	258	—	599	1067
Beloit	607	291	382	615	1103
Madison	561	229	357	571	1029
Sullivan	553	243	333	559	1019
Juneau	514	206	—	520	969
Waukesha	449	177	—	459	894
Hartford	437	167	—	445	875
Racine	404	143	—	421	844
Milwaukee	392	136	281	405	825
Appleton	430	143	296	430	858
Green Bay	365	110	275	371	787
Big Flats	509	182	—	493	940
Hancock	495	175	345	479	925
Port Edwards	472	159	335	459	899
La Crosse	545	230	397	552	1022
Eau Claire	458	180	341	460	903
Cumberland	379	155	287	375	803
Bayfield	265	102	—	247	594
Wausau	399	134	286	383	800
Medford	395	134	250	387	808
Crivitz	331	104	—	323	731
Crandon	334	114	230	312	710

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

gamie and Washington counties. Management plans at this time should include harvesting fields as soon as possible and monitoring new growth of the second crop for possible treatment needs.

POTATO LEAFHOPPER: Numbers are escalating in alfalfa fields across the state. Migrant adult populations are still below threshold levels at 1-4 per 10 sweeps, but reproduction was noted as early as May 2 this season and warmer temperatures could cause rapid succession of generations by early June. Second growth alfalfa is particularly susceptible to leafhopper feeding and should be closely monitored.

PEA APHID: Aphids are abundant in field collections in southern and central fields where they occasionally average 16 per sweep. The average is about 6-7 per sweep. Counts of this level are considered non-economic in alfalfa, but pea aphid populations can escalate rapidly when their natural enemies are disrupted by alfalfa

weevil insecticide sprays. Harvesting fields on time rather than using insecticidal control is important for preserving natural enemies.

MEADOW SPITTLEBUG: Spittle masses are increasing in size and most nymphs are currently $\frac{1}{4}$ to $\frac{1}{2}$ grown. The highest population encountered was 22 per 50 stems near Reedsburg in Sauk County, which is moderate in comparison to the economic threshold of 1 nymph per stem. Most surveyed fields had significantly fewer spittlebugs.



Meadow spittle bug spittle mass

Krista Hamilton DATCP

CORN

TRUE ARMYWORM: Larvae of the first generation were swept from alfalfa fields in Monroe and Sauk counties this week, signaling that scouting of corn and small grains fields should continue. Black light traps have registered high counts of 74-166 moths per week at the East Troy, Janesville, Manitowoc and Ripon locations since late April, although armyworm counts are often an unreliable criterion for predicting larval outbreaks. Reduced tillage corn fields following sod or small grains cover crops and fields with early-season grassy weed pressure are candidates for armyworm problems. Damage usually appears first at the margins of fields, where the worms have migrated from another food source.

CORN ROOTWORM: A report issued by the University of Illinois-Extension confirms that larval hatch began in east-central Illinois and far western Indiana from May 4-6, the earliest hatch noted in 35 years. Drier soils and an early planting season suggest conditions will be favorable for larval establishment in Wisconsin corn fields this

spring. The first larvae could begin emerging here over the weekend, with 50% hatch expected from May 25-June 1 in the Madison and La Crosse areas. This event occurs from 684-767 degree days (base 52°F).



Western corn rootworm beetle M. Auer www.raabauen.fauna.inseketen

BLACK CUTWORM: Larval infestations in corn have been noted in Dane, Rock, Sauk and Walworth counties. Surveys this week found indicators of black cutworm activity, including small irregular holes in the leaves and cut plants, in a few fields checked. Damage estimates ranged from 1-22%, with an average of 4%. In most instances, no larvae were observed in association with the affected plants. The primary damage period is now in progress and could extend through mid-June this year. Crop advisors and field scouts must remain vigilant for signs of feeding injury until the V5 stage.

FRUITS

FLATHEADED APPLETREE BORER: Emergence of this pest was noted in the past week near Rio in Columbia County. Newly transplanted trees, those that have sustained bark damage, trees newly exposed to full sunlight, or trees that are stressed by environment changes (i.e., frost, drought, flooding, soil compaction) are all susceptible to attack. Hail-damaged areas on trees are also preferred egg laying sites. This borer is particularly damaging to trees in the first 2-3 years after transplanting. The primary entry spot is the cut area above the bud that was grafted onto the rootstock.

Control of the flatheaded apple tree borer consists of insecticide sprays applied when adults first emerge, wrapping trees to prevent oviposition, avoiding injuries

to bark which attract females and proper planting site selection. The adult form of this insect is a metallic wood-boring beetle in the family Buprestidae.



Flatheaded appletree borer larva

M. H. Shour, ISU Extension

CODLING MOTH: Large flights were registered in pheromone traps from Racine to Polk County. The biofix was set at most monitoring locations in the past two weeks. Controls directed against first generation larvae should be applied from 250-350 degree days (base 50°F) post-biofix, or about 12-24 days after biofix at current temperatures.

A larvicide application made 250 degree days post-biofix is recommended for orchards which registered large and consistent flights during the first week in May. Orchards that documented inconsistent or very small numbers of moths this month may benefit from an application at 350 degree days post-biofix, once a greater percentage of the larval population has emerged. Hatch of most first generation codling moth eggs occurs from 350-650 degree days (base 50°F) in Wisconsin.

REDBANDED LEAFROLLER: Moth counts are expected to increase as the second flight begins next week. This event is projected for 780 degree days (base 50°F), or May 24 at Brodhead, May 27 at Madison, June 7 at Racine and June 12 at Eau Claire. The average count this week was only 25 moths per trap, which compares to 32 last week and 101 when the flight peaked during the week of April 12-18.

PLUM CURCULIO: Beetle activity has intensified across the state. Reports indicate that the beetles are migrating farther into the interiors of orchards since most border

trees have no fruits. Under normal circumstances, an insecticide application applied to borer trees in advance of the weevil migration is an acceptable form of control, but this approach may not be effective this year for orchards with few fruits on the perimeter trees. If an orchard cover insecticide is warranted, growers are advised to apply a reduced-risk material as an alternate middle application for as much of the orchard as possible.

VEGETABLES

VARIEGATED CUTWORM: UW-Extension Entomologist Phil Pellitteri reports that there exists a strong potential for outbreaks of this insect in the northern half of the state this spring. He has received several images of cutworm eggs on the windows, eaves and siding of homes in Ashland, Barron, Door, Douglas, Marathon, Oneida and Washburn counties. In addition, the Bayfield County Agent has responded to over 25 calls on the topic and states that eggs have been found on "every house" in Ashland. The larval stages of the variegated cutworm feed on a variety of crops and garden plants, which could spell trouble for growers in these counties next month.



Variiegated cutworm larvae on tomatoes

Shirely Copeland Oklahoma

ASTER LEAFHOPPER: Surveys in alfalfa continue to yield moderate to high numbers of this pest. Counts have been comparatively high since the first migrants arrived in April. According to the latest UW-Madison Vegetable Crop Update, testing at the UW-Madison found an 8-12% infectivity rate in the migrant population, indicating that susceptible hosts such as lettuce, carrots and onions are at a moderate risk for aster yellows infection this season. The symptoms of aster yellows disease vary by host but

generally include yellowing or chlorosis which progresses to stunting and distortion of the foliage.

Economic thresholds for the aster leafhopper are based on an index calculated by multiplying the percent infectivity by the number of leafhoppers per 100 sweeps (25 sweeps in four locations within a field). The treatment threshold index is 25 for lettuce, 35 for celery and 50-100 for carrots, depending on the variety resistance level.

CABBAGE LOOPER: Migrant moths were registered at the rate of 1-10 per trap for the second week in a row at 10 southwestern Wisconsin locations. Their arrival signals that growers should begin sampling for eggs and small larvae at this time. The yellowish-white, hemispherical eggs are laid singly on the undersides of cabbage, broccoli and cauliflower leaves.

An infestation level of 30% in the cabbage transplant to cupping stage indicates the need for control. The economic threshold for broccoli and cauliflower in the transplant to first flower or curd stage is 50% infestation. If insecticidal treatment is required, it is recommended that growers use a selective material such as *Bacillus thuringiensis* (Bt).



Cabbage looper moth

www.utcrops.com

WEEDS

WEEDS IN CORN: Most corn fields in the south-central and southwest counties are in the V1-V2 stage of growth. Now is an important time to identify the predominant weed species present in fields and plan controls accordingly. Factors influencing corn's competitiveness at this early stage vary based on row spacing, available

nitrogen, moisture levels and weed composition. To prevent early yield losses, all fields should be evaluated for site-specific weed problems. Corn is most susceptible to yield loss from weed competition during the V3-V8 stages and should be kept as weed-free as possible during this period.

WINTER ANNUALS: Dense populations of winter annual weed species such as chickweed, shepherd's purse, field pennycress, speedwell and yellow rocket are common in unplanted no-tillage fields. Presumably, many of these fields will be planted to soybeans in the coming weeks. With winter annuals at advanced stages of growth, it is critical to apply a burndown herbicide prior to or shortly after planting. Delaying control until soybeans are in the VC-V1 growth stage can result in yield reductions of 8-9 bu/acre.



Yellow rocket

Krista Hamilton DATCP

VELVETLEAF: Planting operations have triggered velvetleaf emergence in southern Wisconsin corn fields. Small plants ranging 2-3 inches in height were observed in Dane, Rock and Walworth counties this week. A velvetleaf infestation of only three plants per foot of row has been shown to cause yield losses of 20% or more. Monitoring potential problem areas in corn fields is recommended through the eight-leaf stage (V8).

NURSERY & FOREST

VIRUS SURVEY OF ORNAMENTALS: A spring survey of ornamental perennials and annuals propagated in 17 greenhouses has found a range of hosts with plant viruses. Numerous anemone, astilbe, barrenwort, bleeding heart, hosta and phlox have been diagnosed with

tobacco rattle virus (TRV). Cucumber mosaic virus (CMV) has also been found on many different host plants (see table on page 39). Both viruses are readily transmitted through cuttings and pruning tools, whereas other viruses are vectored by nematodes, aphids and thrips. These viral plant diseases could infect most perennials and annuals as well as vegetables planted into gardens this season. Preventing the introduction of TRV and CMV into nurseries, greenhouses and home gardens is the best control measure.



Impatiens necrotic spot virus on begonia

Anette Phibbs DATCP

BRISTLY ROSE SLUG: The green, bristly larvae of this sawfly are feeding on the undersides of rose foliage in Kenosha and Marquette counties, and skeletonizing the leaves. Defoliation may be reduced by removing the larvae and infested leaves. Horticultural oils or residual insecticides are also effective.

APHIDS: Assorted euonymus, plums, sedums and viburnums at retailers in Marquette, Racine, Walworth and Washington counties are moderately to heavily infested with aphids. These insects can directly damage nursery stock hosts when densities are high, but in most instances aphids are an aesthetic problem. Of larger concern is the secondary growth of sooty mold which results from their honeydew production. Insecticidal control is usually not required as there are many natural enemies that regulate populations.

SEPTORIA LEAF SPOT: Dogwood, phlox and spirea in Dane, Kenosha, Marquette, Racine, Walworth and Washington counties are showing symptoms of this common fungal disease, characterized by small reddish or purple lesions that first appear on the lower leaves

and stems and later enlarge and spread to the upper leaves. Preventive measures such as increasing the spacing between plants and promoting air circulation can reduce its spread. Once symptoms appear, control is difficult to achieve.



Septoria leaf spot on Spirea

Liz Meils DATCP

FOREST TENT CATERPILLAR: A prepupal, "wandering" larva was noted on May 14 in the DeForest area of Dane County. This species, unlike the similar eastern tent caterpillar, does not make a web. Reports of larvae were also received from Crawford, Grant and Sauk counties.

GYPSY MOTH: Gypsy moth Btk treatments were applied from May 10-16 to sites in Barron, Chippewa, Clark, Eau Claire, Jackson, Polk and Trempealeau counties. An estimated 15,652 acres were treated. In addition, the gypsy moth-specific nucleopolyhedrosis virus (NPV) was applied twice to another 3,606 acres in Eau Claire and Jackson counties. Btk treatment is scheduled to continue through the end of this week, in Burnett, Dunn, Marinette and Rusk counties. Spraying has been completed for the year in Clark, Grant, Green, Iowa and Lafayette counties.

APPLE INSECT COUNTS MAY 10 - 16

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	OBLR ⁵	AM RED ⁶	YELLOW ⁷	GDD 50°F
Bayfield	Keystone	0	45	0	0				
Bayfield	Orienta	43	16	—	—				
Brown	Oneida	400	42	4	—				
Chippewa	Chippewa Falls	0	14	3	0				
Columbia	Rio	0	0	29	0				
Crawford	Gays Mills	50	15	4	4				
Dane	Deerfield	113	0	4	0				
Dane	McFarland	116	123	5	—				
Dane	Mt. Horeb	0	—	9	6				
Dane	Stoughton	12	24	12	0				
Dane	West Madison	—	—	—	—				
Dodge	Brownsville	0	0	3	4				
Fond du Lac	Campbellsport	20	25	0	2				
Fond du Lac	Malone	1	0	7	1				
Fond du Lac	Rosendale	35	24	2	0				
Grant	Sinsinawa	—	—	—	—				
Green	Brodhead	4	0	0	2				
Iowa	Mineral Point	0	2	12	0				
Jackson	Hixton	16	4	6	0				
Kenosha	Burlington	5	1	1	0				
Marathon	Edgar	136	119	0	2				
Marinette	Niagara	110	11	3	0				
Marquette	Montello	5	9	3	0				
Ozaukee	Mequon	70	7	4	—				
Pierce	Beldenville	3	32	31	2				
Pierce	Spring Valley	10	87	1	0				
Polk	Turtle Lake	12	62	26	2				
Racine	Raymond	26	5	5	0				
Racine	Rochester	30	2	34	0				
Richland	Hillpoint	47	0	15	0				
Sheboygan	Plymouth	41	—	49	27				
Walworth	East Troy	—	—	—	—				
Walworth	Elkhorn	—	—	—	—				
Waukesha	New Berlin	0	2	21	2				

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

BLACK LIGHT TRAP COUNTS MAY 10 - 16

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	6	2	0	0	0	0	8	0	0	0
Columbia	Arlington	—	—	—	—	—	—	—	—	—	—
Crawford	Prairie du Chien	0	0	0	0	0	0	2	0	14	0
Dane	Mazomanie	0	5	0	0	0	0	0	0	29	2
Fond du Lac	Ripon	1	98	0	0	0	0	2	0	4	0
Manitowoc	Manitowoc	0	68	23	0	0	0	15	0	24	0
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	0	0	0	3	0	0	0	0	4	2
Portage	Plover	0	0	0	0	0	0	0	0	0	0
Rock	Janesville	0	28	0	0	0	0	9	0	36	1
Walworth	East Troy	21	14	1	0	0	0	0	0	0	0
Wood	Marshfield	1	31	4	0	0	0	18	0	4	7
Vernon	Coon Valley	8	13	3	0	0	0	5	0	14	2

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

RESULTS OF DATCP'S SURVEY FOR VIRUSES OF PERENNIALS & ANNUALS

COMMON NAME	SCIENTIFIC NAME	VARIETY	VIRUSES DETECTED
Astilbe	<i>Astilbe arendsii</i>	Rheinland'	Cucumber mosaic virus, Tobacco rattle virus
Astilbe	<i>Astilbe arendsii</i>	'Fanal'	Cucumber mosaic virus
Azure monkshood	<i>Aconitum fischerii</i>	'Azure'	Cucumber mosaic virus
Barrenwort	<i>Epimedium</i>		Tobacco rattle virus
Begonia	<i>Begonia x hiemalis</i>		Impatiens necrotic spot virus
Bleeding heart	<i>Dicentra spectabilis</i>	'Alba'	Tobacco rattle virus
Bleeding heart	<i>Dicentra spectabilis</i>	'Pink'	Cucumber mosaic virus, Tobacco rattle virus
Clematis	<i>Clematis paniculata</i>		Undetermined virus
Dahlia	<i>Dahlia</i>		Tobacco mosaic virus
Grapeleaf anemone	<i>Anemone tomentosa</i>	'Robustissima'	Tobacco rattle virus
Hosta	<i>Hosta sp.</i>	'Paul's Glory'	Hosta Virus X, Arabis mosaic virus
Hosta	<i>Hosta sp.</i>	'Blue Angel'	Tobacco rattle virus
Hosta	<i>Hosta sp.</i>	'August Moon'	Hosta virus X
Hosta	<i>Hosta sp.</i>	'Wide Brim'	Hosta virus X
Larkspur	<i>Delphinium sp.</i>	'Magic Fountains'	Tobacco mosaic virus
Ligularia	<i>Ligularia sp.</i>		Tomato spotted wilt virus
Lobelia	<i>Lobelia sp.</i>		Cucumber mosaic virus
Peruvian lily	<i>Alstroemeria sp.</i>		Tomato spotted wilt virus
Phlox	<i>Phlox sp.</i>	'Pink Lady'	Cucumber mosaic virus, Tobacco rattle virus
Purple coneflower	<i>Echinacea purpurea</i>	'Magnus'	Cucumber mosaic virus
Shamrock	<i>Oxalis sp.</i>		Undetermined virus
Sneezeweed	<i>Helenium</i>	'Chelsey'	Cucumber mosaic virus

Records are based on nursery inspections conducted from March 2-May 16, 2012. Diagnostic testing was performed at the DATCP Plant Industry Laboratory.