

WISCONSIN PEST BULLETIN

Timely crop pest news, forecasts, and growing season conditions for Wisconsin



Wisconsin Department of Agriculture, Trade and Consumer Protection

Division of Agricultural Resource Management | Bureau of Plant Industry

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WEATHER & PESTS

Early June heat accelerated crop emergence and growth across Wisconsin. Afternoon temperatures were the warmest of the year so far, with highs on June 2 reaching or exceeding 90°F at Appleton, Eau Claire, Racine, Wausau and many other locations. A daily-record high of 93°F was set in Milwaukee. The very warm and humid atmosphere on Tuesday also provided a favorable environment for storms that became severe, producing damaging winds, large 2-inch hail, and downpours across central and portions of southern Wisconsin. Rainfall was otherwise scattered and light during the week, and the weather was suitable for gardening, weed management and other fieldwork. Alfalfa producers continued harvesting the first crop and soybean planting reached 88% complete, with 53% of acreage emerged. Crop prospects generally continued to improve with the heat, and the latest USDA NASS report rates 82-83% of the state's corn, oats and soybeans in good to excellent condition.

LOOKING AHEAD

BLACK CUTWORM: The primary damage period for corn is now open. Much of the state's corn acreage is under a low threat of larval infestation this year based on early field preparation and the relatively late arrival of significant moth flights. However, localized infestations are still

possible this month. Routine inspection of emerging corn (including Bt hybrids) for larvae and cut plants is advised until the five-leaf (V5) stage.

EUROPEAN CORN BORER: Degree-day accumulations across southern and central Wisconsin have surpassed the 374 heat units (modified base 50°F) required for spring moth emergence. The first ECB moth of the season was collected in the Columbia County black light trap site in the past week. Egg laying is beginning, and the spring flight is expected to peak by June 11 in advanced southern areas.

ALFALFA WEEVIL: Surveys indicate that leaf feeding damage in first-crop alfalfa remains well below the 40% threshold, but leaf tip damage should intensify next week in uncut alfalfa fields. It will be particularly important to scout remaining first-crop alfalfa in the week ahead.

MONARCH BUTTERFLY: The first butterflies arrived over three weeks ago and egg laying is underway. Wisconsin farmers have historically been conservationists of monarchs and other pollinators and can again contribute to their recovery by reducing herbicide use on critical milkweed habitat on farmlands and by supporting milkweed restoration.

COLORADO POTATO BEETLE: Overwintered beetles are locally abundant this spring. Damaging populations have

been reported from several western Wisconsin CSAs where the beetles are causing severe defoliation of young potato and eggplant crops. If scouting shows that early-season pressure is high, the first of two foliar applications of the biological insecticide Btt can be made at the beginning of egg hatch and again 5-7 days later. In smaller gardens, manual removal of beetles and larger larvae is the preferred way to control populations, but growers must check plants every few days.



Colorado potato beetle

Phillippe_Boissel flickr.com

CODLING MOTH: Emergence of spring moths increased markedly during the past week. The biofix was set May 24-30 in most apple orchards and controls directed against first-generation larvae are likely to begin next week. Orchards with a history of high CM pressure that record a large first flight of >10 moths per week are candidates for a first larvicide application at 250 degree days (base 50°) from biofix, expected to be reached June 6-9 at advanced locations.

FLEA BEETLE: Damage to beets, leafy greens, potatoes and other vegetables reportedly had been severe in gardens and larger field production areas this spring. Significant defoliation can usually be tolerated by host plants and treatment is not advised unless large numbers of beetles are present on all plants and defoliation exceeds 30%.

FORAGES & GRAINS

ALFALFA WEEVIL: Larval counts are low for early June. Surveys in western Wisconsin alfalfa, including Chippewa, Dunn, Eau Claire, Pierce and St. Croix counties, found 0-51 larvae per 100 sweeps, and an average of 17 per 100

DEGREE DAYS JANUARY 1 - JUNE 3

LOCATION	50°F	2019	NORM	40°F
Dubuque, IA	567	536	606	1133
Lone Rock	525	493	—	1052
Beloit	535	494	619	1080
Sullivan	464	439	560	967
Madison	504	473	582	1028
Juneau	428	392	—	895
Racine	392	349	—	874
Waukesha	437	412	—	924
Milwaukee	401	365	471	882
Hartford	405	387	—	864
Appleton	410	332	—	856
Green Bay	381	314	475	804
Big Flats	450	376	—	916
Hancock	407	347	573	849
Port Edwards	427	354	557	871
La Crosse	510	431	648	1024
Eau Claire	520	395	570	1009
Cumberland	370	304	505	765
Bayfield	299	199	—	652
Wausau	335	280	494	725
Medford	339	280	443	730
Crivitz	373	303	—	765
Crandon	315	265	398	672

Method: Modified B50; Modified B40 as of January 1, 2020. NORMALS based on 30-year average daily temps, 1981-2010.

sweeps. Alfalfa in Adams, Green Lake, Fond du Lac, Juneau and Monroe counties also had low counts, with a range of 6-41 per 100 sweeps. In Calumet, Manitowoc and Winnebago counties in eastern Wisconsin, egg hatch had just begun as of May 29 and surveys found no more than 10 larvae per 100 sweeps. Leaf tip feeding was below 20% in all sampled fields, but harvesting the first crop in the week ahead will be important for avoiding damage by the larger late-stage weevil larvae. Scouting is recommended until new growth of the second crop is established.

PLANT BUG: Reproduction has increased and nymphs are common in sweep net collections. Combined counts of the tarnished and alfalfa plant bug species were below 1.0 per sweep in all fields surveyed in the past week.

POTATO LEAFHOPPER: Surveys indicate that levels of this insect remain low in first-crop alfalfa. Counts in 52 fields checked from May 28-June 3 were less than 0.4 per sweep (40 per 100 sweeps). The economic threshold

for leafhoppers in alfalfa taller than 12 inches is 2.0 per sweep. Second-crop alfalfa is very susceptible to leafhopper injury and should be regularly sampled later this month.

PEA APHID: Populations ranged from 0.2-6.8 per sweep and averaged 2.7 per sweep, a marked increase from last week's average of 0.8 per sweep. The weekly high count of 6.9 per sweep was noted in Pierce County. Winged aphids were observed in most surveyed fields.

MEADOW SPITTLEBUG: Nymphs are currently $\frac{1}{4}$ - $\frac{1}{2}$ grown. The highest population encountered was about 12 per 100 stems, which is very low in comparison to the economic threshold of one nymph per stem.



Meadow spittlebug nymph

Krista Hamilton DATCP

CORN

EUROPEAN CORN BORER: The spring flight began by June 3 with the first reported moth capture in the Columbia County black light trap. Based on the European corn borer phenology model, the majority of moths should emerge by June 11 in advanced southern areas and June 19 in the central counties. Egg laying is starting in areas of the state where 450 degree days (modified base 50°F) have accumulated, such as Beloit, Madison, La Crosse and Lone Rock.

TRUE ARMYWORM: Small caterpillars ranging in length from $\frac{1}{2}$ - $\frac{3}{4}$ inch are fairly common in alfalfa sweep net collections. Based on this observation and the moderate local flights of 40-60 moths reported during the previous two weeks, more concentrated scouting of corn and wheat should begin next week.



True armyworm larva

Krista Hamilton DATCP

STALK BORER: Larvae will 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 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 in the range of 5-10%.



Stalk borer larva

Krista Hamilton DATCP

BLACK CUTWORM: The primary damage period for seedling corn is now in progress and will extend through mid-June this year. No larval infestations were observed in corn surveyed May 28-June 3. A rescue treatment is justified if more than 3% of plants are damaged and larvae are still present in the field. Spot treatment is an option for sites with patchy damage.

SLUGs: Longitudinal leaf streaks indicative of slug activity are evident in damp cornfields. These mollusks

become prevalent during periods of wet weather and are usually most damaging in no-till or reduced-till systems and very weedy corn, where surface residue and high moisture favor their development. Corn in the V4 stage or younger is particularly vulnerable to slug feeding.

SOYBEANS

SLUGS: Persistent moist soils in eastern Wisconsin this spring are extremely favorable for slug activity. Spot-checking newly emerged soybeans for feeding scars on the hypocotyls and cotyledons, as well as for distorted or tattered unifoliate leaves, is recommended. Stand losses from slugs usually occur when soils are wet and seed furrows do not close fully during planting, creating a “highway” for the slugs to feed on and destroy the growing point of consecutive seedlings. A sample size of 20 plants in each of five areas of the field is suggested. No specific thresholds have been developed for slugs in soybeans, and spot application of a molluscicide bait to problem areas should be considered only as a last resort for severe infestations. Growers must follow labeled use rates and distribute the product evenly over the infested area.



Slug defoliation on soybeans

Krista Hamilton DATCP

SOYBEAN APHID: The spring dispersal of winged aphids to soybeans is likely to begin in the week ahead. Currently over 53% of the state’s soybean acreage has emerged, 18 days ahead of last year and six days ahead of the 5-year average.

FRUITS

PLUM CURCULIO: Movement into orchards is underway and feeding and oviposition scars are becoming notice-

able on fruitlets. Warm temperatures at petal-fall have provided optimal conditions for plum curculio (PC) migration and egg laying this season. Close inspection of fruits for injury should continue until 308 degree days (base 50°F) accumulate after McIntosh petal fall. As of June 3, most sites are about 125-175 degree days from petal fall. Female weevils show a strong preference for early-sizing apples, with fruitlets 10 mm in size most attractive. Organic control options include PyGanic (pyrethrin) applied at dusk to the outer rows and Surround WP (kaolin) on interior trees.



Plum Curculio oviposition scars

Peter Jentsch Cornell University

CODLING MOTH: Spring moth emergence continued for the second week, with a sharp increase in counts reported from southern Wisconsin orchards. Most monitoring locations recorded a sustained flight with a well-defined biofix last week, and this week eight of 26 cooperating sites registered high captures of 10 or more moths. Apple orchards with a history of high CM pressure that record a large first flight of >10 moths per week are candidates for a first larvicide application at 250 degree days (base 50°) from biofix, which will be reached by June 6-9 in advanced areas of the state. For locations where the spring flight has been inconsistent, it is recommended that growers delay applications until 350 degree days after biofix (June 12-15), when a greater percentage of the larval population has emerged. A density of one trap per 2.5 acres, or one per five acres where blocks are uniform in size, shape and topography, is suggested for accurate CM monitoring.

OBLIQUEBANDED LEAFROLLER: Moths are beginning to emerge in southern Wisconsin, though most larvae in the central and northern areas are still in the late larval instars. Apple growers who have experienced OBLR problems in

recent years should consider setting additional traps to determine specific blocks or varieties in which to concentrate scouting and control. Deploying only one or two traps may not be adequate for accurately assessing OBLR pressure. If the goal is to save an insecticide application, it is important to set additional OBLR traps next week.

WOOLY APPLE APHID: Apple growers should begin scouting areas infested with this aphid last season to confirm the first appearance of aerial colonies, expected to become noticeable by mid-June.

GRAPE PLUME MOTH: This sporadic defoliator is appearing in Dane County vineyards. Larvae of the grape plume moth are late-spring pests that fold and web together grape leaves and feed within the fold. With rare exceptions, their defoliation is generally low impact and usually does not require control. Grape growers who notice shoots with young leaves webbed together are advised to unroll the leaf to verify that the larvae inside is grape plume moth.



Grape plume moth larva

Mike Cesarz

BLACK STEM BORER: Emergence was confirmed May 8-21 in apple orchards where survey traps have been set this season as part of a USDA-DATCP ambrosia and bark beetle survey. Lindgren funnel traps deployed in five orchards in Kenosha, Lafayette, Rock and Walworth counties all collected this ambrosia beetle in that timeframe. Black stem borer attacks a wide range of fruit trees and hardwoods and has been documented by DATCP in 22 Wisconsin counties since 2013. Until June 2019 when an infested apple tree was identified in a Lafayette County orchard, there had been no confirmed cases of BSB apple tree damage in the state. Orchards

in Michigan, Ohio and other northeastern states have had serious issues with this pest in the last few years, and in western New York, the beetles have killed large numbers of apple trees. The BSB captures recorded in southern Wisconsin last month align with studies from the eastern U.S. that show an early flight for this beetle around 100-145 GDD (base 50°F).



Ambrosia beetle frass (toothpick-like projections)

Jiri Hulchr

PLANT BUGS: An increase in plant bug pressure on apples, strawberries and other fruits is anticipated in the week ahead as more first-crop alfalfa acreage is harvested. Nymphs are currently very common in alfalfa sweep net collections.

SPOTTED WING DROSOPHILA: Berry growers planning to monitor SWD this season should set their traps soon to document the first capture date. SWD flies have been detected as early as first week of May in the upper Midwest. The earliest recorded emergence date for Wisconsin is June 6, 2016 in Door County.

VEGETABLES

COLORADO POTATO BEETLE: Reports from several western Wisconsin CSA farms indicate that overwintered beetles are abundant and early-season pressure has been higher than usual. The beetles have been active for two weeks and larvae are now appearing on potato and eggplant foliage. Bacterial insecticide treatment with *Bacillus thuringiensis* var. *tenebrionis* (Btt) will be most effective while the larvae are very small and in the early instar development stages. Growers using a bacterial product should be aware that these materials persist only a few days and must be reapplied 2-3 times for effective

control. Treatment is justifiable for pre-flowering potato plants when defoliation exceeds 20-30%. In home gardens, hand picking beetles and larger larvae is the preferred way to keep populations under control, but growers must be persistent and check plants every few days until the peak colonization period has ended.



Colorado potato beetle

Megan Eames DATCP

FLEA BEETLE: Damage to beets, leafy greens, potatoes and other vegetables has intensified in home gardens and larger field production areas. Heavy populations of 5-20 beetles per plant were observed earlier this week on eggplant in a La Crosse County garden and a report from Waukesha County notes that the beetles are particularly numerous there this year. Significant defoliation can usually be tolerated by host plants and treatment is not advised unless large numbers of beetles are present on all plants and defoliation exceeds 30%. Controls are most effective if applied in the morning, when the beetles are less active.



Flea beetles on eggplant

Krista Hamilton DATCP

BLACK CUTWORM: Vegetable gardens should be monitored for signs of black cutworm feeding now that first-generation larvae are in the damaging late-instar stages. Beans, cabbage, carrots, celery, corn, lettuce, peas, peppers, potatoes and tomatoes are all susceptible to cutting during the transplant establishment period. Most damage occurs at night as the larvae feed on the stems of young plants at or slightly above or below the soil line. Placing a plastic or cardboard collar around plants, with one end pushed a few inches into the soil and the other end extending several inches above ground, will provide a barrier to prevent feeding by most species of cutworms.

STRIPED CUCUMBER BEETLE: Economic counts of 5-6 beetles per plant were observed this week on young squash and zucchini plants in western Wisconsin community gardens. These yellow and black striped beetles can severely defoliate vine crops, but are most damaging as vectors of bacterial wilt. The bacteria is acquired from infected weeds and spread to cucurbits through feces or contaminated mouthparts. The first symptom of bacterial wilt on cucumber and melon is flagging of lateral and individual leaves.



Striped cucumber beetle

Krista Hamilton DATCP

A count of one beetle per plant for melons, cucumbers, and young pumpkins and five beetles per plant for less susceptible cucurbits (squash, older pumpkins, watermelon) signals a high risk of bacterial wilt if the beetle population is not controlled.

IMPORTED CABBAGEWORM: Egg hatch and larval damage to cabbage and other vegetables in gardens and field production areas has intensified. Larvae observed in Sauk County were approximately ¼ inch long on June 2. Manual removal of the caterpillars from the undersides of

cabbage leaves is suggested for control in gardens. Bt or another insecticide may be useful for larger plantings.

POTATO LEAFHOPPER: Surveys in alfalfa indicate a large migration occurred approximately two weeks ago. The nymphs produced by these migrants usually appear during the second or third week of June. Vegetable fields in close proximity to alfalfa could see an influx of adult leafhopper populations as harvesting of first-crop hay increases in the week ahead.

NURSERY & FOREST

BOTRYTIS BLIGHT: DATCP inspectors report that this common pathogen of bedding plants, notably geraniums, impatiens and phlox, is prevalent at retailers this spring. Also known as “gray mold,” botrytis blight is a widely distributed disease caused by the fungus *Botrytis cinerea*. It can infect vegetables, soft fruits, flowers, trees and shrubs, especially when conditions are cool and damp. The fungus usually occurs on plant debris or weak plant tissue, such as old flowers, leaves and overripe fruit. Botrytis spreads quickly to healthy plant tissue and may be very destructive.



Botrytis or gray mold

Michelle Grabowski UMN Extension

Symptoms of botrytis vary by the type of plant infected. As its name suggests, gray mold usually causes a gray, fuzzy coating on leaves, aging flower blossoms and soft, ripe fruits. Infection begins as brown to gray circular spots that later appear fuzzy when the fungus produces masses of gray spores. The disease can cause spotting and decay of flowers, leaves, fruits and berries. Corms and bulbs may rot when infected. In roses, it can cause slightly sunken cankers on the stems.

Botrytis is not difficult to control using cultural methods. Following good sanitation practices such as collecting and discarding faded flower blossoms and fallen petals, keeping leaves dry by avoiding overhead watering, and adequately spacing plants are the best ways to reduce occurrence of this disease.

BOXWOOD LEAFMINER: This serious pest of boxwoods was identified on a boxwood sample from a Milwaukee County retailer. The larvae feed between the upper and lower leaf surfaces, causing distinct blisters on the undersides of leaves. Foliage infested by boxwood leafminer becomes yellow and stunted. The adult fly is a yellow to orange-red gall midge that swarms around boxwoods in spring, around the time that weigelas bloom.



Boxwood leafminer fly and emergence “windowpane” Joe Boggs OSU

Controls include planting the more resistant English boxwood (*Buxus sempervirens* 'Pendula,' 'Suffruticosa,' 'Handworthiensis,' 'Pyramidalis,' 'Argenteo-variegata' and 'Varder Valley,'), encouraging natural enemies, and maintaining plant vigor. Pruning shrubs before adults emerge or right after adult flies lay their eggs in May reduces the overall population. Pesticide applications can be made when the new leaves are fully formed, around May 1, with a second treatment between mid-June and mid-July.

VOLUTELLA BLIGHT: This destructive disease was recently noted on ‘Green Carpet’ pachysandra in Washington County, as well as on the boxwood varieties ‘Green Gem,’ ‘Green Velvet,’ ‘Variegata’ and ‘Wintergem,’ in Dane and Walworth counties. Symptoms include stem cankers and circular leaf spots that gradually increase in size until the entire leaf turns necrotic and dies. Volutella blight is an opportunistic pathogen often infecting plants weakened

by other abiotic or biotic factors such as moisture stress or scale insects. Management includes sanitary, cultural, and chemical measures such as removal of diseased plants and debris, maintaining the growth and vigor maintenance of plant stock, and prudent application of approved fungicides.



Volutella blight on pachysandra

Shanon Hankin DATCP

VIBURNUM LEAF BEETLE: Nursery inspections in Waukesha County found extreme defoliation of viburnum trees caused by the adult and larval stages of this invasive pest. Feeding by VLB can lead to shrub mortality after successive years of defoliation, and both ornamental landscape viburnums and native viburnums—an important understory component in Wisconsin woodlands—are at risk.



Viburnum leaf beetle defoliation

Mitchell Lannan DATCP



Viburnum leaf beetle multiple life stages

Mitchell Lannan DATCP

The most effective non-chemical control against this pest is to locate and prune out branches and twigs infested with eggs during the fall and winter months (October-

April). Egg hatch has been documented in southeastern Wisconsin by early to mid-May.

Most common hardware store pesticides are also effective against VLB, but all are toxic to honeybees and other pollinators and caution must be used to avoid treating flowering shrubs. Honeybees and beneficials can be protected by waiting to spray until after petal-fall and by preventing drift onto nearby landscape plants.

APPLE INSECT & BLACK LIGHT TRAP COUNTS MAY 28 - JUNE 3

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	DWB ⁵	LPTB ⁶	BMSB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	35	49	0	0		3			
Bayfield	Oriente	11	1	—	—		—			
Brown	Oneida	575	34	10	0		0			
Columbia	Rio	—	—	—	—		—			
Crawford	Gays Mills	32	36	—	—		—			
Dane	Mt. Horeb	0	6	4	—		0			
Dane	McFarland	20	40	8	—		—			
Dane	Stoughton	11	8	10	0		0			
Fond du Lac	Campbellsport	37	14	0	0		0			
Fond du Lac	Malone	18	4	8	—		0			
Fond du Lac	Rosendale	17	3	0	—		12			
Green	Brodhead	—	—	—	—		—			
Iowa	Mineral Point	2	0 ^{MD}	13 ^{MD}	0		0			
Jackson	Hixton	27	23	2	0		0			
Kenosha	Burlington	28	2	11	0		—			
Lafayette	Belmont	0	0	1 ^{MD}	0		0			
Marathon	Edgar	0	12	5	0		4			
Marinette	Niagara	18	6	0	0		0			
Marquette	Montello	9	84	0	0		1			
Ozaukee	Mequon	10	0	3	0		0			
Pierce	Beldenville	131	0	6	0		15			
Pierce	Spring Valley	28	36	0 ^{MD}	0		—			
Racine	Raymond	20	17	19	0		1			
Racine	Rochester	0	15	28	0		1			
Richland	Hill Point	25	14	19	1		3			
Sheboygan	Plymouth	55	24	0 ^{MD}	—		0			
Walworth	East Troy	2	6	0 ^{MD}	0		0			
Walworth	Elkhorn	10	4	0 ^{MD}	0		1			
Waukesha	New Berlin	10	9	16	0		2			

¹Spotted tentiform leafminer; ²Redbanded leafroller; ³Codling moth; ⁴Obliquebanded leafroller; ⁵Lesser peachtree borer; ⁶Dogwood borer; ⁷Brown marmorated stink bug; ⁸Apple maggot red ball; *Unbaited; **Baited; ⁹Apple maggot yellow board.

COUNTY	SITE	BCW ¹	CEL ²	CE ³	DCW ⁴	ECB ⁵	FORL ⁶	SCW ⁷	TA ⁸	VCW ⁹	WBC ¹⁰
Columbia	Arlington	0	0	0	0	0	0	0	31	0	0
Columbia	Pardeeville	0	1	0	0	1	1	0	9	0	0
Dodge	Beaver Dam	0	0	0	0	0	0	0	1	0	0
Fond du Lac	Ripon	0	2	0	0	0	0	0	3	1	0
Grant	Prairie du Chien	0	0	0	0	0	0	0	0	0	0
Langlade	Antigo	0	0	0	0	0	6	0	35	0	0
Manitowoc	Manitowoc	0	2	0	0	0	0	0	8	0	0
Marathon	Wausau	0	0	0	0	0	0	0	9	0	0
Rock	Janesville	—	—	—	—	—	—	—	—	—	—
Walworth	East Troy	1	0	0	0	0	0	0	2	0	0
Waushara	Hancock	2	4	0	0	0	0	0	2	0	0
Wood	Marshfield	1	1	0	0	0	0	0	4	0	0

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