

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
2811 Agriculture Dr., Madison, WI 53718 • <http://pestbulletin.wisconsin.gov>

WEATHER & PESTS

Hot weather with periods of heavy rain prevailed in Wisconsin in the past week. For only the third time on record, the remnants of a tropical storm system tracked directly through the state, bringing downpours and gusty winds to the southern and western areas on June 9. Rainfall totals of 1-3 inches were widespread, with localized amounts approaching 4 inches in Buffalo County. In addition, new record low pressure readings for the month of June were set in Madison and Green Bay as the tropical system caused pressure to drop on June 10 to 988 and 986 millibars, respectively. Wisconsin has experienced only two other tropical systems since record-keeping began in the 1850s, but those affected only the far southeastern counties. Crop prospects generally continued to improve with the heat and surplus precipitation, and the latest USDA NASS report rates 84-86% of the state's corn, oats and soybeans in good to excellent condition. The heat and moisture also stimulated insect activity, resulting in a noticeable increase in pest pressure in field, fruit and vegetable crops.

LOOKING AHEAD

EUROPEAN CORN BORER: Egg laying is underway in all but the far northern counties of the state. Snap beans, peppers, potatoes and various weed hosts will be used

for oviposition until corn taller than 18 inches becomes more widely available. The first moth flight has likely peaked in the south-central and southwestern areas and is expected to peak across southeastern and central Wisconsin by June 18.

CODLING MOTH: Most southern and central Wisconsin apple orchards are 200-325 degree days (modified base 50°F) beyond the spring biofix, and treatments to control first-generation larvae have started. Reapplication of CM products may be necessary if heavy rainfall of two or more inches has occurred and weekly trap counts remain consistently above five moths per trap. Scouting fruits for tiny, circular entry wounds should begin in the week ahead.

EURASIAN HEMP BORER: Moths have become abundant in the past two weeks and egg laying has likely intensified. Signs of first-generation larvae should be detectable by late June. The Eurasian hemp borer (EHB) is diurnal and cannot be monitored with black light or sticky traps, therefore routine scouting of hemp plants is the only effective approach to determining the need for EHB control.

LILY LEAF BEETLE: This invasive red beetle has been confirmed by UW Insect Diagnostician PJ Liesch in three more counties this month: Clark, Milwaukee and Waukesha. Lily leaf beetle (LLB) was also reported from Vernon County in May, for a total of four new county detections so far this year. The latest cases are the first reports from

southeastern Wisconsin and are a significant expansion in the distribution of this pest. Manual removal of the adults, larvae and eggs from lily foliage is advised. Although lilies and fritillaria are the primary hosts, LLB also occasionally feeds on bittersweet, hollyhock, hosta, lily of the valley, potato and Solomon's seal.

COLORADO POTATO BEETLE: Damaging populations of beetles and small larvae are appearing in gardens and on farms in western Wisconsin, and likely statewide. In home gardens, manually removing the beetles and larger larvae is the preferred way to keep populations under control. Vegetable growers must be persistent and check plants every few days until the peak colonization period has ended.

TRUE ARMYWORM: Larvae and minor leaf feeding injury has been observed on plants in the perimeter rows of cornfields, suggesting that more concentrated scouting of corn, oats and wheat should begin next week. True armyworm outbreaks are sporadic in Wisconsin and last occurred in July of 2018.

JAPANESE BEETLE: Beetle emergence was noted on June 10 in La Crosse County. Damage to fruit trees, ornamentals, nursery stock and field crops should be anticipated during the next two months, with peak activity occurring in mid-July. Populations of this invasive beetle are now established as far north as Bayfield County.



Japanese beetles

Krista Hamilton DATCP

FORAGES & GRAINS

ALFALFA WEEVIL: Larval counts have been low in first-crop alfalfa. Surveys in 120 fields since the earliest emerg-

DEGREE DAYS JANUARY 1 - JUNE 10

LOCATION	50°F	2019	NORM	40°F
Dubuque, IA	742	691	719	1378
Lone Rock	673	634	—	1270
Beloit	700	628	728	1316
Sullivan	613	556	665	1186
Madison	664	608	691	1258
Juneau	568	508	—	1106
Racine	522	451	—	1074
Waukesha	582	518	—	1139
Milwaukee	532	465	570	1083
Hartford	542	498	—	1070
Appleton	548	451	—	1064
Green Bay	509	427	573	1002
Big Flats	584	499	—	1121
Hancock	536	465	678	1048
Port Edwards	556	472	659	1069
La Crosse	659	569	767	1242
Eau Claire	663	531	677	1222
Cumberland	489	422	951	951
Bayfield	399	300	—	818
Wausau	445	389	591	905
Medford	447	390	530	905
Crivitz	486	412	—	944
Crandon	419	374	473	844

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

ing larvae were collected on May 22 have found average counts below 0.6 weevil larvae per sweep (60 per 100 sweeps). In the vast majority (88%) of fields, populations were far lower at less than 0.2 larvae per sweep. Estimates of leaf tip feeding made by DATCP surveyors have not exceeded the 40% economic threshold in any field sampled this spring. The peak weevil damage period, which occurs between 600 and 800 degree days (base 48°F), is underway and will extend until approximately June 23 this season. With the first alfalfa harvest already over 50% complete, nearly all fields will have been cut well before the upper range of this threshold is reached.

PLANT BUG: Nymphs are currently more abundant than the adults in most fields. Counts for the survey period ending June 10 were less than one per sweep and averaged 0.4 per sweep, which is still very low in comparison to the 5.0 per sweep economic threshold.

POTATO LEAFHOPPER: Surveys from Grant to Marathon County found low counts of less than 0.4 leafhoppers per

sweep in remaining first-crop fields. Economic populations of 1.0 per sweep for alfalfa 8-11 inches and 2.0 per sweep for fields 12 inches or taller have not yet been recorded this season.

PEA APHID: Densities are typical for early June at approximately 2-7 aphids per sweep, with a few exceptional fields having higher counts of 9-10 per sweep. Counts of this level are far below the 100-per-sweep threshold for alfalfa. The appearance of winged aphids in the past two weeks signals that scouting should begin in pea fields, where the threshold is much lower at 35 aphids per sweep or two per plant. For alfalfa, harvesting fields on time is usually the most effective aphid control.



Pea aphids

Krista Hamilton DATCP

CORN

BLACK CUTWORM: Localized cutworm infestations remain a possibility in eastern and northern Wisconsin. Crop advisors and growers should continue to inspect fields until corn plants have reached the five-leaf (V5) stage. Signs of cutworm activity have not been encountered in fields surveyed this month, and economic infestations (>3% of plants damaged) have not been reported. The cumulative moth count for the period of April 8-June 5 was 1,341 moths in 44 traps, with a high of 95 moths near Platteville in Grant County. Cooperators may remove their traps now that the DATCP BCW trapping program has ended for the season.

STALK BORER: Surveys indicate that 1-22% of edge row plants in several Grant, Green, Green Lake, Iowa, La Crosse, Rock and Walworth County fields are infested with small larvae. This mid-season pest migrates from

perennial grasses and broadleaf weed hosts in early June and infests the first 4-6 border rows of corn. Scouting is recommended for all fields through the V7 stage since Bt corn hybrids suppress but will not completely control stalk borers.



Stalk borer damage

Krista Hamilton DATCP

EUROPEAN CORN BORER: The spring flight continued for the second week, with low counts of 1-5 moths registered in black light traps near Pardeeville and Ripon. Moth emergence and egg laying has already peaked the south-central and southwestern areas and should peak across southeastern and central Wisconsin by June 18. The treatment window for first-generation larvae will open next week.



European corn borer

Jean Jacques Beaumont

CORN EARWORM: Recent weather systems carried a few early corn earworm migrants into southern Wisconsin. Two moths were captured at the Arlington monitoring site on the night of June 5. Corn is not at a critical growth stage for corn earworm damage to occur, but other favor-

ed vegetable hosts include asparagus, cabbage, cantaloupe, cucumber, eggplant, lettuce, lima bean, melon, okra, pea, pepper, potato, pumpkin, snap bean, spinach, and squash.

WESTERN BEAN CUTWORM: Pheromone traps are now being set in preparation for the annual moth flight. Participants in the western bean cutworm monitoring program are reminded to begin reporting counts to Tracy Schilder at tracy.schilder@wisconsin.gov by June 24 and each Wednesday during the 10-week trapping survey.

TRUE ARMYWORM: First-generation armyworm caterpillars are appearing in the perimeter rows of cornfields. Surveys on June 9-10 found $\frac{3}{4}$ to $1\frac{1}{4}$ -inch larvae (intermediate to late-stage) in corn whorls from Lafayette to Walworth County. Leaf feeding injury is expected to become pronounced by late June.



True armyworm larva

Randy Wendler DATCP

SOYBEANS

SOYBEAN APHID: Dispersal to soybeans has been documented in southern and western Wisconsin. Surveys of VC-V3 soybeans found aphids in four of 45 (9%) fields sampled during the week ending June 10. Densities ranged from 1-10 aphids per infested plant and no more than 7% of plants were colonized in any field. Specific counties in which the aphids were detected were Grant, La Crosse, Lafayette and Rock. Early colonies should become increasingly noticeable over the next two weeks.

BEAN LEAF BEETLE: Light defoliation was observed at 33% of sites surveyed in the southern half of the state.

Despite the prevalence of feeding injury, less than 5% of soybean plants were affected in the infested fields and very few beetles were found. Chemical control specifically for this pest is seldom justifiable, but could be considered in the rare event that defoliation exceeds 30% or for populations of 39 or more beetles per foot of row during the vegetative stages. Economic soybean damage directly resulting from bean leaf beetle feeding has never been documented in Wisconsin.



Bean leaf beetle

Randy Wendler DATCP

ROSE CHAFER: This tan beetle has been noted on perennials, field crops, and in home gardens since the last report. Defoliation is expected to increase during the next 3-4 weeks, especially in areas of the state with sandy soils. The economic threshold is 30% defoliation for soybean fields in the pre-bloom vegetative stages, although leaf damage caused solely by the rose chafer is unlikely to reach this level before beetle activity subsides in July.



Rose chafer

Krista Hamilton DATCP

FRUITS

CODLING MOTH: Economic counts of five or more moths per trap were recorded at 19 of 25 cooperating orchards, with 10 of those sites registering heavy flights of 10-42 moths per trap. Apple orchards that recorded biofix May 23-26 have accumulated about 200-325 degree days (modified base 50°F) as of June 10 and first treatments are beginning. Locations that are not using mating disruption should target the first CM applications for 250-350 degree days from biofix if trap counts have been high (≥ 10 per trap per week). For orchards where some traps have reached the 5 moths-per-week threshold and other traps have stayed below-threshold, delaying treatment until 350 degree days is suggested. Orchards using mating disruption can follow the same approach for determining the need for a larvicide.

PLUM CURCULIO: Orchards are seeing aggressive injury from plum curculio (PC) this spring, according to John Aue of Threshold IPM Services. The hot temperatures in late May provided ideal conditions for PC migration and egg laying, and injury will likely extend past the normal 308 degree days (base 50°F) from McIntosh petal fall this season. Apple growers are advised to continue monitoring for fresh oviposition strikes longer than usual. John is predicting that all growers should expect to see PC injury in the packing line due to extreme heat after petal fall.



Plum curculio weevil

umaine.edu

ROSE CHAFER: These tan beetles with orange-brown spiny legs are beginning to appear in vineyards and orchards. Scouting twice weekly is recommended for vineyards on sandy soils and those with a history of rose chafer problems, once the first beetle is observed. An

average of two beetles per vine has been suggested as the basis for initiating controls, although the feeding period is usually brief (<3 weeks) and the beetles usually disappear by July without causing permanent damage.



Rose chafer beetles feeding on wild grape

Krista Hamilton DATCP

SPOTTED TENTIFORM LEAFMINER: Trap counts are expected to increase abruptly by mid-June as the second flight begins. Numbers this week were very low and ranged from 0-121 moths per trap. The economic threshold for STLM increases from 0.1 to 1.0 mine per leaf for the second generation of sapfeeder larvae.

OBLIQUEBANDED LEAFROLLER: Apple growers planning to reduce the number of treatments this spring should set additional OBLR traps to determine the potential for problems by second-generation larvae at harvest. There is no established threshold for OBLR based on trap counts, but an OBLR larvicide may be needed if trap counts exceed 50 moths per week.



Obliquebanded leafroller moth

Derrick Ditchburn www.dereila.ca

GRAPE PHYLLOXERA: The appearance of leaf galls suggests that monitoring for egg hatch should begin. Control of the first generation is usually ineffective once the galls have formed, but scouting for the mobile crawlers will help to determine the timing and need for management of the second and third generations later this season. As is the case with San Jose scale, a 10x hand lens is required to view the crawlers.



First generation grape phylloxera leaf gall

blogs.cornell.edu

SAN JOSE SCALE: A few more days remain for apple growers to tape scaffold branches to monitor for crawlers. Concentrating the tape on younger limbs (2-3 inches in diameter) in blocks with a history of SJS damage is advised. A 10x hand lens is required to view the oval, bright-yellow crawlers. A capture of 10-15 crawlers in a few days or 10 crawlers on one tape may warrant control.

TARNISHED PLANT BUG: Nymph production has intensified with the recent heat. Strawberry plants beginning to bloom should be sampled once a week for both adults and nymphs. Controlling the smallest nymph stages is most effective. The economic threshold for this insect in strawberries is four adults per 20 sweeps at first flower bud formation or one nymph in four flower clusters.

VEGETABLES

SQUASH VINE BORER: Moth emergence and egg laying can be expected by June 20 in advanced southern areas. Pumpkins, squash, gourds and other vine crops should be examined daily for eggs and evidence of larval boring from 900-1,000 degree days (simple base 50°F). Chemical controls will only be effective if applied to the stems of plants when the adults are first observed, especially

while runners are less than two feet long. Floating row covers may also be used during the adult flight period to prevent egg-laying on susceptible plants.



Squash vine borer adult

qwen wan flickr.com

COLORADO POTATO BEETLE: Larvae in southern and western Wisconsin are primarily in the first and second instars. Bacterial insecticide treatments with *Bacillus thuringiensis* var. *tenebrionis* (Btt) are most effective at this time, while the larvae are very small. Most bacterial products persist only a few days and must be reapplied 2-3 times to effectively control populations. Treatment can be considered when 6-8 inch plants show 20-30% defoliation. In home gardens, hand-picking beetles and larger larvae is the preferred way to keep populations under control.



Colorado potato beetle larvae

Krista Hamilton DATCP

STRIPED CUCUMBER BEETLE: Cucumbers, melons and other vine crops are at risk of feeding injury and bacterial wilt transmission as beetles continue to emerge this

month. Bacterial wilt infection can develop when only 10% of the population are carriers of the pathogen. Scouting field edges and interiors two times per week is recommended. Beetle counts in excess of 4-5 per 50 plants may warrant control.



Striped cucumber beetles inside squash blossom Krista Hamilton DATCP

IMPORTED CABBAGEWORM: Larvae have emerged statewide and are appearing on cabbage, cauliflower and broccoli leaves. Manual removal of the caterpillars is suggested for smaller gardens, while treatment with a product containing the bacterial insecticide *Bacillus thuringiensis* (Bt) subspecies *aizawi* (Agree, Xentari) or subspecies *kurstaki* (Biobit, Cutlass, DiPel, Javelin, Lepinox, MVP, Thuricide) can be considered for larger production fields. Bt is most effective against small larvae but may not control full-grown caterpillars.



Imported cabbageworm larvae

www.insectpod.com

POTATO LEAFHOPPER: Recent harvesting of first-crop alfalfa has likely driven leafhoppers into nearby vegetable

crops. Commercial potato and snap bean fields may be monitored with a standard 15-inch sweep net by taking 25 sweeps per site, sampling from at least five sites per 30 acres. Counting nymphs and adults by turning over 25 leaves from the middle of the plant is the protocol for gardens or smaller-acreage farms. Recommended treatment thresholds for potatoes are one adult per net sweep or a total count of 2.5 nymphs and adults on the undersides of 25 potato leaves. In snap beans, the threshold is 0.5 adults and nymphs per sweep for seedlings, and one leafhopper per sweep for larger plants in the third trifoliate to bud stages.

NURSERY & FOREST

MAPLE SHOOT BORER: Minor damage caused by this tortricid moth (*Proteoteras aesculana*) was recently observed on 'Autumn Blaze' maples in Eau Claire County. The adult moths lay eggs on new maple shoots in May and the resulting larvae bore into apical shoots, cause flagging and dieback. In addition to flagging, the tip dieback creates new forked growth that requires corrective pruning to remove all but a single leader that may need to be trained using supports.



Maple shoot borer damage

Konnie Jerabek DATCP

Pheromone traps can be used to monitor the early-season moth flight and determine the optimal timing of a single insecticide application, if warranted. The male moth is a look-alike of the codling moth and commonly appears as a non-target in orchard traps about one week in advance of codling moth emergence.

ELM SAWFLY: Adult emergence and mating is underway in northern Wisconsin. After mating, the female sawfly

cuts slits in the undersides of leaves into which eggs are laid. Hatch occurs 7-10 days later and the pale yellow larvae with a black dorsal stripe feed until early autumn. Elm sawfly larvae can grow up to two inches long and are one of the largest North American sawflies. This native species prefers elms, but has a broad host range that also includes apple, aspen, birch, maple and willow. Sawfly defoliation usually does not threaten tree health.

Elm sawfly adult (*Cimbex americana*)

Timothy Allen DATCP

FLETCHER SCALE: Emergence of first-instar nymphs, or crawlers, from beneath the female scale's hard shell will begin next week where 730 degree days (base 50°F) have been reached, including most of southern and portions of central Wisconsin. Upon hatching, the crawlers immediately migrate to the ends of branches to feed on the newest growth. Heavy infestations on arborvitae, juniper and yew can cause needle drop and branch dieback. The stress associated with sap loss can also make infested trees more susceptible to opportunistic pests.



Fletcher scale on yew

Konnie Jerabek DATCP

A horticultural oil or soap application targeting the crawlers is an option for severe cases. Timing applications when the crawlers are active is crucial for effective control. In instances where Fletcher scale is found at a retail site, DATCP requires that the infested host plants be shipped back to the wholesaler for treatment as crawlers emerge.

LILY LEAF BEETLE: Larvae are appearing on plants in areas of the state where populations have become established in the last six years. This invasive red beetle had been reported from 12 counties at the start of the season, but the recent addition of Clark, Milwaukee, Vernon and Waukesha counties in the last month brings the total number of confirmed counties to 16. The latest cases represent the first reports from southeastern Wisconsin and a significant range expansion for LLB. Milwaukee County is now the southernmost Wisconsin county in which the lily leaf beetle is known to occur. The northernmost record of the beetle is from Price County. Controls include manually removing the adults and larvae from lilies or applying an insecticide labeled for use on ornamental plants.



Lily leaf beetle larva Timothy Allen DATCP

APPLE INSECT & BLACK LIGHT TRAP COUNTS JUNE 4 - 10

COUNTY	SITE	STLM ¹	RBLR ²	CM ³	OBLR ⁴	DWB ⁵	LPTB ⁶	BMSB ⁷	AM RED ⁸	YELLOW ⁹
Bayfield	Keystone	17	44	0	0	4	0			
Bayfield	Oriente	34	2	—	—	3	0			
Brown	Oneida	10	6	17	0	3	8	0		
Columbia	Rio	—	—	8	—		0			
Crawford	Gays Mills	—	—	—	—		—			
Dane	Mt. Horeb	0	0	5	—		0	0		
Dane	McFarland	2	0	25	—		—			
Dane	Stoughton	20	9	11	0	0	12	0		
Fond du Lac	Campbellsport	11	10	0	2	40	0			
Fond du Lac	Malone	1	0	13	1		25	0		
Fond du Lac	Rosendale	31	3	14	3		4			
Green	Brodhead	0	0	6	3		2			
Iowa	Mineral Point	0	0 ^{MD}	17 ^{MD}	0		12	0		
Jackson	Hixton	17	6	6	0		1			
Kenosha	Burlington	12	0	6	0		—			
Lafayette	Belmont	0	0	2 ^{MD}	0		7			
Marathon	Edgar	121	9	8	0		37	0		
Marinette	Niagara	4	1	1 ^{MD}	0		4			
Marquette	Montello	4	7	6	0		38	0		
Ozaukee	Mequon	0	0	7	0		3	0		
Pierce	Beldenville	21	8	18	4	0	10			
Pierce	Spring Valley	18	7	0 ^{MD}	0		—			
Racine	Raymond	6	0	6	0		2			
Racine	Rochester	0	2	16	0		5			
Richland	Hill Point	4	2	24	0		20			
Sheboygan	Plymouth	12	0	0 ^{MD}	0		1			
Walworth	East Troy	—	—	—	—		—			
Walworth	Elkhorn	—	—	—	—		—			
Waukesha	New Berlin	13	9	42	0		11			

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	24	0	0
Columbia	Pardeeville	0	0	0	0	5	0	6	23	0	0
Dodge	Beaver Dam	0	1	0	0	0	0	2	1	0	0
Fond du Lac	Ripon	0	1	0	0	1	0	0	3	0	0
Grant	Prairie du Chien	—	—	—	—	—	—	—	—	—	—
Langlade	Antigo	3	2	0	0	0	0	0	15	0	0
Manitowoc	Manitowoc	0	0	0	0	0	0	0	4	0	0
Marathon	Wausau	0	0	0	0	0	0	0	4	0	0
Rock	Janesville	0	0	0	0	0	0	0	0	0	0
Walworth	East Troy	1	0	0	0	0	0	0	0	0	0
Waushara	Hancock	0	2	0	0	0	4	0	4	0	0
Wood	Marshfield	0	3	0	0	0	0	8	11	2	0

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