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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
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WEATHER & PESTS

Early June heat accelerated crop emergence and development across the state. Afternoon temperatures were the warmest of the year so far, with highs on June 3 briefly reaching or exceeding 90°F at Boscobel, Eau Claire, Menomonie, Prairie du Chien, Viroqua and several other western Wisconsin locations. A daily-record high of 97°F was set in La Crosse. Rainfall was generally scattered and light, and aside from intense weekend heat, the weather was very suitable for cutting alfalfa, weed management and other fieldwork. Alfalfa producers harvested an additional 32% of the first crop, for a total of 54% to date. Soybean planting reached 73% complete and 34% of acreage has emerged. Crop prospects generally continued to improve with the heat and drier weather, and the latest USDA NASS report rates 68-75% of the state's alfalfa, corn, oats and potatoes in good to excellent condition.

LOOKING AHEAD

SOYBEAN APHID: Colonization of soybeans was documented for the first time this season on June 5. Surveys found aphids in nine of 37 soybean fields sampled, in Buffalo, Eau Claire, Iowa, Lafayette, La Crosse, Richland and Trempealeau counties. Densities were low and ranged from 1-9 aphids per infested plant. This observation confirms that dispersal to soybean plants has started in western Wisconsin.

TRUE ARMYWORM: Light feeding damage to corn has been noted in Grant, La Crosse and Richland counties. The low to moderate moth flights documented since early May, and the prevalence of small larvae in alfalfa, suggest that small grains, corn and other susceptible crops are at risk of infestation this month and should be monitored for potential problems.

CODLING MOTH: Emergence has accelerated in the past two weeks and a definite potential exists for damaging populations if treatments directed against first-generation larvae are improperly timed. Apple orchards in the southern and central areas are approaching the 250-350 degree days (modified base 50°F) post-biofix treatment period and first larvicide applications are likely to be made next week. Counts for the period of June 1-7 ranged from 0-19 moths per trap, with 10 of 25 apple orchards reporting high or economic captures exceeding the five moths per trap threshold.

EUROPEAN CORN BORER: The spring flight is expected to peak by June 10 in the southern and west-central counties, June 17 in the central and eastern areas, and around June 21 in the north. Moths are appearing in black light traps and egg deposition is occurring as far north as Wausau.

ALFALFA WEEVIL: Larval counts and leaf tip damage have exceeded economic levels in scattered fields. Any remaining first-crop alfalfa should be harvested as soon as possible to disrupt further feeding by the larger and more destructive late-instar weevil larvae now common in uncut fields. Continued scouting is recommended until second-crop regrowth is established.

EASTERN TENT CATERPILLAR: Pupation is underway in advanced areas of southern Wisconsin. The first moths should begin emerging in the next two weeks.

VIBURNUM LEAF BEETLE: A report from the UW-Madison Insect Diagnostic Lab confirms that larvae of this invasive European beetle have been found near Oshkosh in Winnebago County on viburnum shrubs. Winnebago is the third Wisconsin county in which viburnum leaf beetle (VLB) has been detected since 2009, following Milwaukee and Ozaukee. The report also notes that the affected viburnums are well-established shrubs, suggesting that the infestation may have originated from a local population and not from recently purchased nursery stock.

Viburnum leaf beetle defoliation *Marcia Wensing DATCP*

DEGREE DAYS JANUARY 1 - JUNE 7

LOCATION	50°F	2016	NORM	40°F
Dubuque, IA	757	716	668	1433
Lone Rock	668	682	—	1265
Beloit	690	745	677	1332
Sullivan	606	556	615	1200
Madison	641	650	641	1240
Juneau	593	564	—	1166
Racine	544	541	—	1123
Waukesha	571	556	—	1152
Milwaukee	544	520	524	1116
Hartford	563	556	—	1134
Appleton	514	513	—	1047
Green Bay	499	456	530	1020
Big Flats	588	600	—	1122
Hancock	528	600	631	1033
Port Edwards	520	575	614	1024
La Crosse	660	709	714	1268
Eau Claire	575	631	630	1125
Cumberland	407	548	560	880
Bayfield	260	347	—	679
Wausau	435	487	549	912
Medford	408	478	490	879
Crivitz	459	424	—	931
Crandon	357	432	439	800

Method: Modified B50; Modified B40 as of January 1, 2017. NORMALS based on 30-year average daily temps, 1981-2010.

FORAGES & GRAINS

ALFALFA WEEVIL: Counts in alfalfa vary widely. Larval populations in the southern and west-central areas have declined due to harvest operations, although a few taller first-growth fields now have serious infestations of 2-4 larvae per sweep and 40-60% leaf tip feeding. Damage and larval estimates are lower in the central and eastern counties of Brown, Calumet, Door, Green Lake, Kewaunee, Manitowoc, Marquette, Outagamie, Shawano, Sheboygan, Waupaca, and Waushara, where the average count is 0.2 per sweep and leaf feeding ranges from 5-30%. Larvae in all development stages are present, but third and fourth instars predominate in the southern half of the state. Pupae were observed on June 7 in Sauk County.

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 0.5 per sweep in all fields surveyed this week.

POTATO LEAFHOPPER: Surveys indicate that levels of this insect remain low in both the first and second alfalfa crops. Counts in 80 fields checked from June 1-7 were less than 0.3 per sweep (30 per 100 sweeps). The economic threshold for leafhoppers in alfalfa taller than 12 inches is 2.0 per sweep. Second growth alfalfa is very susceptible to leafhopper injury and should be regularly sampled this month, especially if hot, dry weather continues.

MEADOW SPITTLEBUG: Nymphs are currently ½-¾ grown. The highest population encountered was 25 per 100 stems near Kewaunee County, which is low in comparison to the economic threshold of one nymph per stem. Most surveyed fields had significantly fewer spittle masses.

CORN

STALK BORER: Migration of larvae from grassy areas into corn has started and is expected to accelerate in the week ahead. Spot checking the 4-6 border rows for plants with holes in the leaves, wilted whorls and other early signs of damage is recommended starting at 1,400 degree days (sine base 41°F). Control measures may be in order for fields with infestations affecting 5% or more of plants.

Stalk borer larva jclucier flickr.com

EUROPEAN CORN BORER: The spring flight of moths continued for the second week, with counts of 1-32 moths registered in the black light traps near East Troy, Janesville, Marshfield, Pardeeville and Sparta. The European corn borer degree day model suggests that the peak in moth activity has occurred near Beloit in Rock County and should occur by June 10 in the Madison area and before June 17 near Wisconsin Rapids. Most corn is unsuitable for larval development at this time, so egg deposition is likely occurring on peas, peppers, potatoes, snap beans and various weed hosts.

TRUE ARMYWORM: Larval infestations ranged from 1-5% in corn surveyed this week. These averages are very low in comparison to the economic threshold of 25% of plants infested with two or more small larvae (¾ inch or shorter), but the moderate moth flights documented since early May indicate the potential for damaging levels of armyworms this month. Continued scouting of corn and small grains is advised.

True armyworm larva Krista Hamilton DATCP

BLACK CUTWORM: Conditions remain favorable for localized cutworm infestations. Crop advisors and growers should continue to inspect fields for another two weeks or until corn plants have reached the five-leaf (V5) stage. Signs of cutworm activity have been encountered in a few surveyed fields this month, but significant damage has not been reported or observed.

SOYBEANS

BEAN LEAF BEETLE: Light defoliation was observed at 32% of sites surveyed from Walworth County northwest to Eau Claire County. Fewer than 10% of the plants were affected in most fields and beetle counts were very low, ranging no higher than 1-2 per 25 feet of row. Chemical control of this pest during the soybean vegetative stages should be considered only if field-wide defoliation levels exceed 40% or if populations of 39 or more beetles per foot of row are observed. Economic soybean damage directly resulting from bean leaf beetle feeding has never been documented during DATCP surveys.

SOYBEAN APHID: Surveys of VC-V2 soybeans found aphids in nine of 37 (24%) fields sampled during the reporting period ending June 8. Densities ranged from 1-9 aphids per infested plant on 1-12% of plants, based on 100 plants examined per field. Specific counties where the aphids were detected were Buffalo, Eau Claire, Iowa,

Lafayette, La Crosse, Richland and Trempealeau. These observations confirm that soybean aphids are dispersing to soybeans in western Wisconsin.

Soybean aphid adult and nymphs Krista Hamilton DATCP

ROSE CHAFER: This defoliator was noted on field crops and in home gardens this week. The beetles deposit eggs in the soil, which hatch into grubs that feed on the roots of grasses, weeds and garden plants. Adult emergence and defoliation are expected to increase during the next 3-4 weeks in areas of the state with sandy soils.

FRUITS

CODLING MOTH: A few southern Wisconsin apple orchards have accumulated 250 or more degree days (modified base 50°F) since the first spring biofix, and treatments targeting first-generation larvae have begun. Early larvicide applications made at the traditional 250 degree-day point coincide with 3% hatch and are appropriate for orchards that registered high trap counts of 10-15 moths or more in the first week after biofix. By contrast, apple orchards with initially low moth counts that increase later in the flight may benefit from delaying treatment until 350 degree days after biofix, or 15% hatch. Treating at this later window exposes more newly hatched larvae to the insecticide.

REDBANDED LEAFROLLER: Moth counts were extremely low again this week, ranging from 0-23 per trap at all orchards. The weekly average was only three per trap. The low number of RBLR moths appearing in traps since late May suggests that populations are still primarily in the late larval stages. The second flight is likely to begin within the next two weeks.

OBLIQUEBANDED LEAFROLLER: The first flight of moths increased this week and is expected to continue through early July. 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 sampling and control. Monitoring terminals over the next 2-3 weeks for the newly-hatched second-brood larvae will also indicate the potential for problems later this season.

SPOTTED WING DROSOPHILA: Fly emergence could begin next week. Berry growers planning to monitor SWD this season should set their traps as soon as possible to determine the first capture date.

SAN JOSE SCALE: Emergence of scale nymphs or "crawlers" is anticipated next week in southern orchard locations. Sampling by taping scaffold branches in blocks with a history of damage is advised to determine the relative abundance of scales, the start and end of the hatching period, and if treatments are successful. The tape should be changed every 7-10 days during the period of crawler activity.

San Jose scale crawlers www.organicgardeninfo.com

PLUM CURCULIO: Continued scouting is recommended for another week. If late immigration is suspected, a perimeter spray application may be beneficial. Distinguishing between new and old injury and determining the extent to which PC has migrated into the orchard interior is especially important if only perimeter sprays have been used as a barrier. An enlarging crescent-shaped scar or depression is typical of old injury. Organic options include maintaining a protective coating of Surround® WP (kaolin clay) on exposed blocks. The spring PC migration

into orchards subsides once 300 degree days (modified base 50°F) have accumulated from McIntosh petal fall.

GRAPE PHYLLOXERA: First-generation phylloxera leaf galls are appearing on the foliage of Frontenac and Frontenac gris grapes in western Wisconsin vineyards. This observation 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. A 10x hand lens is required to view the crawlers.

Grape phylloxera galls universitydisplaygardens.com

VEGETABLES

COLORADO POTATO BEETLE: Larvae in southern and west-central Wisconsin are primarily in the first and second instars. Bacterial insecticide treatments of *Bacillus thuringiensis* var. *tenebrionis* (Btt) are most effective at this time, while the larvae are very small. Growers using a bacterial product should be aware that these materials persist only a few days and must be reapplied 2-3 times to effectively control populations. Treatment is recommended when 6-8 inch plants show 20-30% defoliation.

RED TURNIP BEETLE: This red and black beetle was collected in extremely high numbers from Waushara County alfalfa on June 1. Red turnip beetle is an occa-sional pest in the Central Sands area of the state. Hosts include broccoli, cabbage, kohlrabi, radish and turnip, but hoary alyssum and yellow rocket are thought to be the primary food plants. Damage to home gardens is rare and was last documented 8-9 years ago near Hayward in Sawyer County. The counts noted this week suggest that 2017 may be a high population year for this beetle.

Red turnip beetle Doug Waylett flickr.com

IMPORTED CABBAGEWORM: Egg hatch and larval damage to cabbage and other vegetables in home gardens and larger field production areas have intensified. Manual removal of the caterpillars from the undersides of cabbage leaves will generally give reasonable control in gardens, but Bt or another insecticide may be required for larger commercial plantings.

Imported cabbageworm larva Krista Hamilton DATCP

POTATO LEAFHOPPER: Development has accelerated with warmer temperatures in the past two weeks. Nymphs have not been detected in alfalfa thus far, but first generation immature leafhoppers should soon begin appearing in sweep net collections. A corresponding population increase on vegetable hosts such as snap beans and potatoes can also be expected in the next two weeks.

BROWN MARMORATED STINK BUG: UW Extension Entomologist PJ Liesch reports that an adult brown marmorated stink bug was recently submitted to his lab from the Stevens Point area of Portage County. This find represents the northernmost confirmed detection of BMSB to date, and should serve as an early warning to Central Wisconsin vegetable and fruit producers to increase scouting for this newly-introduced pest.

NURSERY & FOREST

IMPATIENS DOWNY MILDEW: This destructive foliar disease of impatiens was found in a Sheboygan County greenhouse late last month. According to the inspector, all the impatiens at the facility were moderately to severely infected. The greenhouse operator noted that a preventative fungicide was not applied, though a rescue treatment was attempted.

Impatiens downy mildew *Marcia Wensing DATCP*

Impatiens downy mildew (IDM) thrives in cool, humid settings and may cause complete defoliation and/or plant collapse. Young impatiens are especially susceptible to infection. Inspecting and culling any plants showing light-green stippled leaves, curled foliage, or the characteristic white, downy mycelia growth on leaf undersides is strongly advised to control the spread of IDM. Home gardeners should carefully examine impatiens for symptoms before purchasing flowers, and consider planting the mildew-resistant 'New Guinea' impatiens or a 'New Guinea' hybrid instead.

LILY LEAF BEETLE: DATCP inspectors report that several nursery operations and gardeners in Central Wisconsin have expressed frustration in managing this new invasive pest of lilies, first detected in the state three years ago. Reproducing populations are currently known to exist in Lincoln, Marathon and Portage counties, from Plover north to Merrill. The increase in reports in the last year indicates that the beetle's range is expanding. Recommended controls include manually picking the adults and larvae from lilies or applying an insecticide labeled for use on ornamental plants. More than one application may be needed.

Lily leaf beetle eggs on 'Stargazer' lily *Timothy Allen DATCP*

BROAD MITES: Infestations were found recently on 'New Guinea' impatiens, gerbera, and Black-eyed Susan vine. The toxic saliva produced by these tiny mites results in curling, hardening, and twisting at growing points of the plant, symptoms similar to herbicide damage. Broad mites can be managed by isolating and treating infested plants with an appropriate miticide. Horticultural oil and hot water treatments may also have some efficacy. Reducing humidity below 80% should reduce broad mite damage.

Broad mite damage on Gerbera *Timothy Allen DATCP*

PESTALOTIOPSIS BLIGHT: This minor fungal disease was diagnosed on 'P.J.M.' rhododendron at a garden center Marathon County. Pestalotiopsis infects plants weakened by improper growing conditions such as overcrowding and inadequate sunlight exposure. Dead foliage should be removed to help limit spread of the disease.

Pestalotiopsis on 'P.J.M' rhododendron *Timothy Allen DATCP*

AMBROSIA BEETLES: Extruding frass tubes indicative of ambrosia beetles were observed on potted shade trees for sale at a nursery dealer in southeast Wisconsin. Ambrosia beetles excavate tunnels in living trees and cultivate "fungal gardens," which they rely on for nutrition. The fungal growth blocks water-conducting tissue, thereby reducing tree vigor. Ambrosia beetle boring permits the entry of wood-staining fungi that reduce log value. DATCP regulations require trees infested with these aggressive, destructive beetles to be removed from sale and destroyed.

Ambrosia beetle frass tubes *Marcia Wensing DATCP*

RHIZOSPHAERA NEEDLECAST: Several Colorado blue spruce trees shipped to Rothschild from a North Carolina supplier were heavily infected with this very common fungal disease. Rhizosphaera is typified by browning and early needle loss starting on the lower branches. Needles become infected in spring, turn yellow in July, and eventually change to purplish-brown by late summer or fall. The rows of small black dots or fruiting bodies on the surface of shed needles are diagnostic. To prevent infection, spruce trees may be treated with a fungicide in spring when the new growth reaches ½-2 inches long, and again 4-6 weeks later.

Rhizosphaera on Colorado blue spruce *Timothy Allen DATCP*

APPLE INSECT & BLACK LIGHT TRAP COUNTS JUNE 1 - 7

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	OFM[5]	LPTB[6]	DWB[7]	AM RED[8]	YELLOW[9]
Bayfield	Keystone	43	15	0	—	—	—			
Bayfield	Orienta	22	0	0	0	0	0			
Brown	Oneida	100	1	12	0	0	7			
Columbia	Rio	1	0	4	1	—	20			
Crawford	Gays Mills	58	0	2	1	—	24	16		
Dane	DeForest	—	—	—	—	—	—			
Dane	Mt. Horeb	0	0	3	7	11	15			
Dane	Stoughton	3	1	6	3	0	15			
Fond du Lac	Campbellsport	18	1	0	0	4	32			
Fond du Lac	Malone	1	0	4	0	0	28			
Fond du Lac	Rosendale	41	23	4	0	0	0			
Grant	Sinsinawa	30	0	19	23	0	0			
Green	Brodhead	0	0	9	20	—	16			
Iowa	Mineral Point	580	0	10	3	5	39			
Jackson	Hixton	26	13	11	0	1	0			
Kenosha	Burlington	5	0	1	4	5	18	5		
Marathon	Edgar	3	0	11	—	19	38			
Marinette	Niagara	21	0	0	0	0	20			
Marquette	Montello	117	6	1	0	0	24			
Ozaukee	Mequon	0	0	8	0	0	2			
Pierce	Beldenville	0	0	3	1	0	5	6		
Pierce	Spring Valley	9	7	0	0	0	41			
Racine	Raymond	—	—	—	—	—	—			
Racine	Rochester	0	0	19	3	4	6	0		
Richland	Hill Point	13	1	11	0	0	18			
Sheboygan	Plymouth	—	—	—	—	—	—			
Walworth	East Troy	—	5	0	0	3	15			
Walworth	Elkhorn	12	0	0	11	1	10			
Waukesha	New Berlin	—	—	—	—	—	—			

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller; [5]Oriental fruit moth; [6]Lesser peachtree borer; [7]Dogwood borer; [8]Apple maggot red ball; *Unbaited; **Baited; [9]Apple 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	1	0	3	0	3	0	6	0	0
Columbia	Pardeeville	0	0	0	0	2	0	0	2	0	0
Dodge	Beaver Dam	0	0	0	0	0	0	0	16	0	0
Fond du Lac	Ripon	0	0	0	0	0	0	0	6	0	0
Grant	Prairie du Chien	0	0	0	0	0	7	0	0	0	0
Manitowoc	Manitowoc	0	2	0	0	0	0	2	7	0	0
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	0	0	0	0	11	4	0	1	0	0
Rock	Janesville	0	3	0	0	2	6	0	8	0	0
Walworth	East Troy	0	0	0	0	32	1	0	0	0	0
Wood	Marshfield	1	4	0	0	1	0	4	3	7	0

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