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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

Intermittent rainfall throughout the week disrupted alfalfa harvesting and prevented farmers from planting the last intended acres of corn, oats and potatoes. Showers and thunderstorms soaked much of the state on June 1 and 2, with more than two inches of precipitation reported in parts of southern and central Wisconsin. The rain benefited winter wheat, pastures and emerging summer crops, although excess moisture remains a problem in some fields. At the start of June, the outlook for the state's field crops is very favorable, despite recent heavy rain and a sluggish start to the planting season. Corn planting advanced 19 percentage points for the week and is now 86% complete, 13% ahead of last year and only four percentage points behind the 5-year average. Statewide, more than 52% of the corn crop has emerged. Soybean planting advanced 30 points to 69% complete as of June 1, and alfalfa conditions are reported as 88% good to excellent.

LOOKING AHEAD

EUROPEAN CORN BORER: Moths are depositing eggs on vegetable and weed hosts in southern and central locations where 450 degree days (modified base 50°F) were recently surpassed. Snap beans, lima beans, peppers and potatoes will be used for oviposition until corn taller than 18 inches becomes available. The spring flight is expected to peak by June 15 near Beloit, Lancaster, Spring Green and other advanced sites.

BLACK CUTWORM: The primary corn-cutting window is now open and could extend through late June this year. Crop consultants and corn growers should continue to inspect fields for evidence of this pest during the next 2-3 weeks or until plants have reached the five-leaf (V-5) stage. A rescue treatment is justified if 3% of corn plants are damaged.

CODLING MOTH: Emergence of spring moths accelerated from May 29-June 4 and the biofix was set at most monitoring sites. Controls directed against first generation larvae are most effective when applied at approximately 250 degree days (base 50°F) post-biofix, which is the equivalent of 17 days at daily high temperatures of 75°F and lows of 55°F. Exact treatment dates will vary by location and with temperatures in the week ahead.

ALFALFA WEEVIL: Defoliation is expected to become more pronounced next week as larvae transition into the larger and most destructive third and fourth-instars. Alfalfa should be harvested as soon as possible to limit larval feeding and avoid the need for insecticidal control.

EASTERN TENT CATERPILLAR: Most tents in roadside trees are vacant and pupation has started. The earliest

adults could begin emerging by June 12, following the accumulation of 725 degree days (modified base 50°F).

MONARCH BUTTERFLY: Migrants have arrived in Wisconsin and were noted this week in Columbia, Grant, Green and Monroe counties. The return of monarchs was uncertain after the number of butterflies completing the 2013 fall migration from the northern United States and Canada to a mountainside forest in Mexico dropped precipitously to the lowest level yet documented.

According to surveys carried out by World Wildlife Fund and Mexico's National Commission on Protected Areas, 2013 was the worst year in recorded history for the butterflies. The entire hibernating population in the 2013-2014 winter season occupied a mere 1.6 acres of forest, a 44% decrease from the previous year and the lowest level documented since data collection began two decades ago.

Monarch butterfly Austinareaphotos.com

Reasons for the decline include extreme climate events in the U.S. and Canada, deforestation in Mexico, and particularly widespread destruction of milkweed across much of the monarch's range in the Midwest, the butterfly's spring and summer breeding area.

Wisconsin farmers have historically been effective conservationists of monarchs and other pollinators and can again contribute to their recovery by reducing herbicide use on critical milkweed habitat on farm lands and by supporting milkweed restoration. Agricultural milkweed conservation has never been more important now that the monarch migration is in peril and at risk of disappearing entirely.

DEGREE DAYS JANUARY 1 - JUNE 4

LOCATION	50°F	2013	NORM	48°F	40°F
Dubuque, IA	591	513	619	603	986
Lone Rock	538	491	—	551	923
Beloit	610	582	631	609	1019
Sullivan	428	510	571	445	774
Madison	524	487	594	539	909
Juneau	458	447	—	481	811
Racine	398	401	—	429	761
Waukesha	428	433	—	445	774
Milwaukee	400	387	480	423	746
Hartford	428	407	—	445	774
Appleton	393	384		415	729
Green Bay	345	335	487	374	677
Big Flats	469	409	—	467	771
Hancock	469	414	585	467	771
Port Edwards	439	387	569	436	733
La Crosse	526	430	662	533	892
Eau Claire	448	384	583	457	776
Cumberland	366	338	517	379	634
Bayfield	238	204	—	234	413
Wausau	360	355	506	372	635
Medford	348	354	453	363	617
Crivitz	326	304	—	344	600
Crandon	312	326	407	319	539

Method: ModifiedB50; SineB48; ModifiedB40 as of Jan 1, 2014. NORMALS based on 30-year average daily temps, 1981-2010.

FORAGES & GRAINS

ALFALFA WEEVIL: Larval populations in the southern half of the state continue to be low. Surveys in Adams, Buffalo, Columbia, Green Lake, Juneau, La Crosse, Marquette, Portage, Trempealeau, Waupaca and Waushara counties found counts of 0-48 larvae per 100 sweeps, with an average of only eight per 100 sweeps. Rates of leaf tip feeding injury associated with this insect were less than 5% in the fields sampled, but defoliation is expected to become more conspicuous next week as larvae transition into the larger and most destructive third and fourth-instars. Any first-crop alfalfa that is not cut soon could be severely degraded. Management plans at this time should include harvesting fields during the next rain-free period and monitoring regrowth for carryover of weevil larvae.

PEA APHID: Densities varied from 0.1-2.7 aphids per sweep and averaged 2.0 per sweep, which is a minor

increase from last week's average of 1.6 per plant. The appearance of winged aphids, an indicator of imminent dispersal from alfalfa into nearby pea and vegetable fields, was noted in most of the 40 fields surveyed from May 29-June 4.

POTATO LEAFHOPPER: Migrant adult populations are still well below-threshold at 0-0.2 per sweep. The weekly high count was found near Galesville in Trempealeau County. Reproduction has not started as of June 4.

PLANT BUG: Populations increased sharply this week with the addition of many small nymphs. Representative counts now range from 0.1-2.0 per sweep in the south-central, central and west-centrals areas compared to less than 0.3 per sweep found during the previous week's survey. Both the tarnished and alfalfa plant bug species were observed in sweep net collections.

Tarnished plant bug nymph *Scott Bauer USDA ARS*

CORN

BLACK CUTWORM: Larvae resulting from migrants that arrived last month are now in the destructive late-instar cutting stages. Perhaps the most important factors influencing their damage potential are previous weed infestation and reduced tillage, but crop advisors and corn growers should be aware that problems can develop in conventionally tilled and Bt fields as well. Timely detection of cutworm infestations is critical for insecticide treatments to be effective and economical. A rescue treatment is justified if 3% of corn plants are damaged.

EUROPEAN CORN BORER: The spring flight of corn borer moths began this week, with low counts of 1-4 moths per trap registered in the Chippewa Falls, Coon Valley and Mazomanie black light traps. The degree day model for this pest suggests egg deposition is starting in areas of the state where 450 degree days (modified base 50°F) have accumulated, such as Beloit, Hancock, Madison and La Crosse. If warm temperatures continue, the first flight could peak by June 15 in the south-central and southwestern counties, June 21 in the southeastern and central areas, and about one week later in the north.

TRUE ARMYWORM: Minor flights have been documented on warmer evenings for several weeks, signaling a potential for larval infestations in small grains and corn. Reduced tillage corn following sod or a small grains cover crop, and fields with early-season grassy weed pressure are candidates for armyworm problems. Damage usually appears first in the marginal rows of fields, where the larvae arrive when moving from another food source.

STALK BORER: Larvae are expected to begin migrating from grassy areas into corn in the next two weeks. Spot checking the peripheral 4-6 rows for plants with holes in the leaves, wilted whorls and other early signs of damage is advised starting at 1,400 degree days (sine base 41°F). Control measures may be in order for fields with infestation rates of 5% or greater. Stalk borer degree day accumulations as of June 4 were: Beloit 976, Madison 887, La Crosse 862, and Platteville 956.

Stalk borer larva *Krista Hamilton DATCP*

SOYBEANS

SOYBEAN APHID: Surveys conducted in Buffalo, Columbia, La Crosse, Monroe, Portage, Trempealeau, Wau-

paca and Waushara counties were negative. The first soybean aphids of the growing season are likely to appear in fields next week.

BEAN LEAF BEETLE: Soybean fields in La Crosse, Monroe, and Trempealeau counties are showing 2-5% of plants with minor defoliation caused by this insect. Damage is currently limited to a few holes in the leaves, but injury could become more severe as additional beetles migrate to emerging soybeans this month.

Bean leaf beetle Krista Hamilton DATCP

FRUITS

CODLING MOTH: A significant increase in codling moth activity was charted in the last week. Counts varied from 0-62 per trap and averaged 13 per trap. Seven of the 25 reporting orchards registered very high counts of 20 or more moths per trap. The spring biofix has now been set in most southern Wisconsin orchards and growers should make preparations to apply controls at 250 degree days (base 50°F) from their specific biofix date. Treatment during this window is intended to eliminate most of the newly-hatched larvae before they enter fruits.

PLUM CURCULIO: Beetle activity continued in southern and central orchards. Reports from Columbia and Racine counties indicate the first feeding and oviposition scars are appearing on apples and plums. According to Orchard IPM Specialist John Aue, examination of fruits for oviposition scars should be under way in apple orchards beyond petal fall, while sampling for adults using a beating tray is the preferred method for far northern orchards where tree development is less advanced. Female weevils show a strong preference for early-sizing apples and fruits beyond 10 mm will be most attractive. Organic control options include PyGanic (pyrethrin) applied at dusk to the outer rows and Surround WP (kaolin) on the interior trees. Both materials should be applied on a warm evening since most oviposition occurs at night.

Plum curculio crescent-shaped egg laying scar www.uvm.edu

SPOTTED TENTIFORM LEAFMINER: Moth counts are expected to increase abruptly by mid-June as the second flight begins. Numbers this week were mostly low and ranged from 0-450 moths per trap, with an average of 46 per trap. This is the lowest average since the first flight began in early May. The economic threshold for STLM increases from 0.1 to 1.0 mine per leaf for the second generation of sapfeeder larvae.

OBLIQUEBANDED LEAFROLLER: The first of two flights expected this season has begun in portions of southern Wisconsin with the accumulation of 600 degree days (base 43°F). Sampling of 10 fruit clusters and 10 terminals in the outsides, centers, and tops of five trees per orchard should occur on a weekly basis after pheromone traps indicate that emergence of spring moths has started. Control is warranted for populations averaging three or more larvae per tree.

PLANT BUGS: Fruit growers can anticipate more plant bug adults appearing on apples, strawberries and other fruits as alfalfa harvesting accelerates next week. Nymphs are abundant in alfalfa sweep net collections, and could contribute to problems in fruit crops this month.

LEAFROLLER: Larvae of an unidentified leafroller species, possibly RBLR or OBLR, were the cause of severe damage to apple trees in a north-central Wisconsin

orchard. The grower observed leaves rolled together with webbing and silken threads, classic signs of leafroller activity. As noted, OBLR moths are beginning to emerge across southern Wisconsin, but most larvae in the central and northern areas are still in the intermediate to late-instars and could continue to damage apple foliage and expanding buds before pupation occurs. Chemical intervention may be justified for orchards experiencing significant leafroller pressure.

Leafroller larva *whatcom.wsu.edu*

VEGETABLES

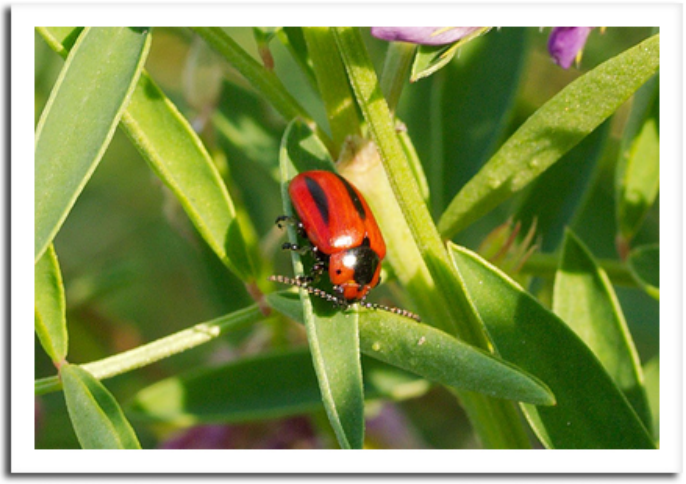
STRIPED CUCUMBER BEETLE: Seedling and transplanted cucurbits such as cucumbers and melons will be at risk of direct feeding injury and bacterial wilt transmission as beetles continue to emerge this month. This insect is such an effective carrier of the bacterial wilt pathogen that serious crop damage can occur when only 10% of the population is infected. Scouting field edges and interiors 2-3 times per week is advised. Beetle counts should not be allowed to exceed 4-5 per 50 plants.

COLORADO POTATO BEETLE: Adults continue to colonize potato fields and ovipostion has started. The presence of widely-distributed, in-field populations of adults and early larvae suggests that systemic insecticides are not adequately controlling populations and a foliar spray may be warranted. The first of two foliar applications of an insect growth regulator or the biological insecticide Bt can be made at egg hatch and again 7-10 days later.

IMPORTED CABBAGEWORM: Larvae have emerged statewide. Home gardens and larger cabbage plantings should be checked weekly for the yellow eggs laid singly on plants and velvety green caterpillars with a yellow, longitudinal stripe. The economic threshold for this pest in cabbage is 30% infestation at the transplant to cupping stages.

ONION MAGGOT: First generation flies are active near Appleton, Eau Claire, Fond du Lac and Hancock in central Wisconsin. Flies of the spring generation are often the most abundant and damaging, particularly in fields or home gardens where onions are grown in succession. Rotating this year's plantings as far away as possible from last year's onions is perhaps the most basic approach to onion maggot control. Preventative soil insecticides may be considered if maggot damage to the 2013 crop exceeded 5-10%.

RED TURNIP BEETLE: This occasional pest of vegetables in the Central Sands area of the state was observed in Waushara County alfalfa on June 3, likely feeding on weeds in the field margins. Its hosts include broccoli, cabbage, kohlrabi, radish and turnip, although hoary alyssum, yellow rocket and other mustards are thought to be the primary food plants. Damage to home gardens is rare and was last documented 5-6 years ago near Hayward in Sawyer County.



Red turnip beetle *Doug Waylett flickr.com*

NURSERY & FOREST

IMPATIENS DOWNY MILDEW: This destructive disease of impatiens was diagnosed by the Plant Industry Bureau Laboratory on samples from a Wood County greenhouse. Impatiens downy mildew (IDM) has been widespread in U.S. greenhouses and landscape settings in the last two

years, with Wisconsin and more than 30 other states reporting cases. In 2013, the disease was found by DATCP and the UW-Madison in Dane, Clark, Jackson, Kewaunee, Monroe and Oneida counties, as well as in Waukesha County where it devastated a garden planting in September.

To reduce IDM problems this season, commercial growers of impatiens are advised to dispose of plants with light green stippled leaves, curled leaves, or the characteristic white, downy mycelia growth on the undersides of foliage. Home gardeners should also carefully examine impatiens for symptoms before purchasing flowers, and consider planting the mildew-resistant New Guinea impatiens or a New Guinea hybrid. Infected plants should be immediately removed and destroyed.

Impatiens downy mildew *georgeweigel.net*

RHIZOSPHAERA NEEDLE CAST: Discoloration of Colorado blue spruce trees in Sheboygan County has been attributed to this fungal disease, a common and widespread problem in Wisconsin this season. The UW-Madison Plant Disease Diagnostic Clinic has also reported 13 cases on spruce in at least 11 counties. Rhizosphaera is characterized by browning and early needle loss starting on the lower branches. Needles are infected in spring, turn yellow in July, and then become purplish-brown by late summer or fall. The presence of rows of small black dots or fruiting bodies on the surface of shed needles is 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.

AZALEA SAWFLY: This insect has been feeding on azaleas in the past week, and if uncontrolled, will defoliate entire plants, leaving only the leaf midrib. Larvae observed in Dane County varied in color from green to dark brown depending on whether they had fed on the leaves or flowers. Insecticidal soaps or manual removal of the larvae will usually give reasonable control. Severe infestations may require Neem oil or an insecticide spray.

PSEUDOMONAS BLIGHT: Potted lilacs in Kenosha, Sheboygan and Walworth counties were showing symptoms of this disease. The principal diagnostic characteristics are yellowish-brown leaf lesions, black streaks along the leaf veins and midribs, and withered, black shoots which bend to form a distinctive shepherd's crook. Pseudomonas blight develops on lilacs during cool, wet weather and spreads by rain and splashing water. Control consists of pruning out blighted twigs as soon as they occur, thinning plants to increase air circulation, and growing resistant varieties. Pruning shears should be disinfected with bleach or 70% alcohol between cuts to prevent spread of the disease.

BOTRYTIS BLIGHT: Nursery inspectors observed this gray mold disease of greenhouse floral crops on geranium, impatiens and peony in Kenosha, Milwaukee, Racine, Sheboygan and Walworth counties. Symptoms of botrytis appear as brown spots on flower petals and irregularly-shaped necrotic areas on the leaves. The leaf spots develop a grayish mass of fungal spores that disperse on splashing water or wind. Botrytis can develop at any stage and may affect any plant part. Measures that reduce humidity levels below 85% and increase air circulation can help minimize its occurrence. Treatment with an appropriate fungicide or removal from the greenhouse is recommended for symptomatic plants.

POWDERY MILDEW: This common fungal disease of ornamental plants was found on various roses at garden centers in Marinette and Milwaukee counties. Powdery mildew is characterized on most plants by its grayish white powdery dusting on the upper leaves, which later causes the foliage to turn yellow and senesce prematurely. This disease is favored by high humidity and wet weather. Reducing humidity levels and increasing air circulation will help to alleviate the problem. Fungicidal control is usually not necessary as this disease is usually only a cosmetic concern.

APPLE INSECT & BLACK LIGHT TRAP COUNTS MAY 29 - JUNE 4

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	AM RED[5]	YELLOW[6]
Bayfield	Keystone	18	21	0	0		
Bayfield	Orienta	9	3				
Brown	Oneida	450	45	6			
Columbia	Rio	60	40	13	0		
Crawford	Gays Mills	19	12	7			
Dane	Deerfield	10	2	18	0		
Dane	McFarland	11	6	4			
Dane	Mt. Horeb	39	30	15	0		
Dane	Stoughton	44	25	62	0		
Dane	West Madison	7	39	0	0		
Fond du Lac	Campbellsport	33	20	0	0		
Fond du Lac	Malone	7	10	4	0		
Fond du Lac	Rosendale	16	5	0	0		
Grant	Sinsinawa	0	0	24	6		
Green	Brodhead						
Iowa	Mineral Point	4	2	34	0		
Jackson	Hixton	22	5	0			
Kenosha	Burlington	27	7	28	1		
Marathon	Edgar	209	57	0			
Marinette	Niagara	35	5	0			
Marquette	Montello	23	2	2	0		
Ozaukee	Mequon	60	6	14			
Pierce	Beldenville	45	161	32	3		
Pierce	Spring Valley	11	57		0		
Racine	Raymond	10	11	19	0		
Racine	Rochester	0	13	32			
Richland	Hillpoint						
Sheboygan	Plymouth	36	33	9			
Walworth	East Troy						
Walworth	Elkhorn						
Waukesha	New Berlin	10	0	22	0		

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller; [5]Apple maggot red ball; *Unbaited AM trap; **Baited AM trap; [6]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]
Chippewa	Chippewa Falls	0	5	0	0	1	0	0	2	0	0
Crawford	Prairie du Chien	0	0	0	0	0	7	1	5	0	0
Dane	Mazomanie	0	3	1	0	1	0	0	2	0	0
Fond du Lac	Ripon	0	4	0	0	0	2	0	2	0	0
Manitowoc	Manitowoc	2	0	0	0	0	0	0	5	0	0
Marathon	Wausau	0	13	0	0	0	6	0	3	0	0
Monroe	Sparta	—	—	—	—	—	—	—	—	—	—
Portage	Plover	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	0	2	0	0	0	0	0	2	1	0
Vernon	Coon Valley	0	4	0	0	4	0	0	7	0	0
Walworth	East Troy	0	3	0	0	0	0	0	3	0	0
Wood	Marshfield	0	5	0	0	0	1	0	4	0	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.