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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

Unsettled weather with frequent rainfall and poor alfalfa harvest conditions characterized the past week. Scattered showers and storms over most of the state provided needed moisture for seedling corn and soybeans, but delayed alfalfa harvest and permitted populations of alfalfa weevil larvae to build to economic levels in many southern fields. Insect and plant development accelerated with the warmer temperatures and high humidity late in the week, while strong winds originating in the south central region of the U.S. directed migrant potato leafhoppers, aster leafhoppers, corn earworm moths, true armyworm moths, and various aphids into Wisconsin. Although recent temperatures were appropriate for the first week of June, the season continues to be delayed from 6-17 days behind normal and 10-23 days behind last year.

LOOKING AHEAD

EUROPEAN CORN BORER: In the next week, the first egg masses of the season will be deposited on vegetables and herbaceous hosts with stems large enough for the larvae to enter. Degree day accumulations were adequate for egg deposition to begin by June 1 near Beloit and by June 4 in other advanced southwest and south central locations. In 2007 the first egg masses were noted in Dane County on May 30. Emergence of the first flight of European corn borer moths should continue to escalate during the next 2 weeks and peak by June 10 near Beloit, June 15 near Madison, and June 17 near Hancock.

EASTERN TENT CATERPILLAR: Fully developed larvae are dispersing from tents in the southern counties and pupation has begun. Wandering caterpillars were noted crossing roadways on June 1 in Columbia County. Populations throughout the central and south central areas appear to be much higher than in previous years and complete defoliation of trees is particularly noticeable along Interstate Highway 39/51 in Columbia, Marquette and Waushara counties.

SPOTTED TENTIFORM LEAFMINER: The second of three flights this season is expected to begin next week in the southern and central counties, once 539-750 degree days (base 50°F) are surpassed. By contrast, counts in Bayfield County orchards should decline as populations there transition into the larval stages.

WESTERN BEAN CUTWORM: DATCP field specialists along with several cooperators are planning to establish a network of pheromone traps to monitor the emergence, activity and relative abundance of the adult western bean cutworm this season. Milk carton traps will be deployed

beginning Thursday, June 12 and checked weekly through mid-August. Persons interested in participating in the network should email Krista Hamilton at krista.hamilton@wisconsin.gov or call 1-866-440-7523 before June 11. Please supply your name, address, telephone number, and indicate the number of traps to be placed.

FORAGES

ALFALFA WEEVIL: Larval numbers and tip feeding have increased considerably in the southern counties where counts ranged from 45-334 larvae per 50 sweeps (0.9 - 7.4 per sweep) and many unhatched eggs are still present in the alfalfa stems. In Columbia and Grant counties, injury to alfalfa tips varied from 30-100% in several uncut fields. Timely harvest of the first crop would have prevented much of the injury that is now occurring. Surveys in the east central and north central areas found substantially lower numbers of larvae, rarely exceeding 11 per 50 sweeps. Counts averaged 9 per 50 sweeps in Manitowoc County, and 6 per 50 sweeps in both Marathon and Portage counties. Second and 3rd instar larvae were the most common stages this week.

ALFALFA BLOTCH LEAFMINER: Pinhole feeding and leaf mines attributed to the alfalfa blotch leafminer were noted on 0-4% of alfalfa stems during surveys in Columbia and Sauk counties. These numbers are very low relative to the economic threshold of 30-40% pinhole feeding.

Alfalfa blotch leafminer *Krista Hamilton DATCP*

POTATO LEAFHOPPER: This insect has become more prevalent over the southern and central districts in the past week. Potato leafhoppers are now distributed in low numbers over the southern half of the state and were encountered as far north as Marathon County. Counts ranged from 0.4-5 adults per 50 sweeps in the areas sampled. The economic threshold for adults and nymphs combined is 0.2 per sweep in <3 inch alfalfa, 0.5 per sweep in 3-6 inch alfalfa, 1.0 per sweep in 6-12 inch alfalfa, and 2.0 per sweep in 12-14 inch alfalfa. No nymphs were detected in fields surveyed as of June 5.

MEADOW SPITTLEBUG: Spittle masses are much more conspicuous in comparison to last week, but nymphs are still only about ½ grown. Counts of 1-14 per 50 stems were found in uncut alfalfa fields from May 30-June 5. Economic numbers of 1 nymph per stem have not been observed in any field examined this season.

PLANT BUG: Populations generally are well below the economic threshold of 5 per sweep, with mixed counts of the alfalfa and tarnished plants bugs ranging from 3-13 per 50 sweeps in the fields sampled in Columbia,

DEGREE DAYS MARCH 1 - JUNE 5

LOCATION	50°F	2007	NORM	48°F	40°F
Dubuque, IA	511	750	—	540	1012
Lone Rock	465	704	—	468	912
Beloit	532	721	—	550	1023
Madison	445	659	619	454	888
Sullivan	498	635	609	501	955
Juneau	464	622	—	464	902
Waukesha	430	602	—	432	869
Hartford	419	608	—	420	851
Racine	364	559	—	373	797
Milwaukee	360	562	475	367	786
Appleton	388	580	523	387	789
Green Bay	338	508	500	339	735
Big Flats	416	632	—	398	801
Hancock	417	609	624	403	804
Port Edwards	393	612	579	378	764
La Crosse	445	747	671	449	879
Eau Claire	391	654	591	386	779
Cumberland	329	594	552	309	680
Bayfield	215	398	383	189	512
Wausau	343	553	520	321	685
Medford	317	536	457	295	650
Crivitz	303	491	—	291	669
Crandon	291	495	445	255	593

Method: ModifiedB50; Sine48; ModifiedB40 as of March 1, 2008. NORMALS based on 30-year average daily temps, 1971-2001.

Manitowoc, Marathon, Portage and Sauk counties. Nymphs of both species were frequently collected during recent surveys, but adults are still more numerous in most areas.

CORN

STALK BORER: Larvae were encountered in a few corn fields in Columbia and Dane counties from June 2-5. Ordinarily, populations are restricted to the margins of fields, but with the increase in minimum tillage practices more are being found scattered within fields. Populations were light in all cases, with only 1 or 2 larvae per 100 plants. Movement of larvae from grassy areas into corn fields began by May 25 near Madison, around 600 degree days (base 41°F), and will continue until 900 degree days are surpassed. Control by spot treating heavily infested areas is recommended.

EUROPEAN CORN BORER: Emergence of the earliest moths of the season continued at East Troy, Janesville, Lancaster, Marshfield, Mazomanie, and Sparta in the past week, but numbers in black light traps are still at very low levels. Counts averaged 1.9 moths per trap from May 30-June 5 and 0.2 moths per trap from May 22-29. The high count for the week was 5 moths at both Mazomanie and Sparta. Suitably warm, humid weather forecast to occur next week should stimulate increased moth activity and egg laying and cause a distinct upsurge in black light traps counts. The majority of moths are expected to appear in traps by June 13-19 in the southern and central counties and a week or more later in the east central and northern counties.

European corn borer egg mass *Krista Hamilton DATCP*

TRUE ARMYWORM: Small first generation larvae of the true armyworm are appearing more commonly in alfalfa fields, signaling that corn and small grains fields should be closely examined for feeding injury. Black light traps have registered no more than 27 moths per week at any location since mid-April, but trap counts are an unreliable criteria since it is possible for a single trap to miss a flight. Minimum tillage fields with crop residue and fields with early season grassy weed pressure are more likely to develop armyworm problems. Treatment is advised if 2 or more armyworm larvae (< ¾ inch long) are found on 25% of the corn plants, or if 1 larva is detected on 75% of the corn plants.

True armyworm moth *Krista Hamilton DATCP*

BLACK CUTWORM: Conditions remain favorable for an outbreak of this insect this year. Continue to monitor corn fields over the next several weeks for developing problems, particularly those affected by spring flooding or with previous grassy weed infestations. Light feeding was detected in western Dane County, but no significant injury had been reported or observed as of June 5.

SOYBEANS

BEAN LEAF BEETLE: Surveys of 167 first crop alfalfa fields in 30 counties yielded just 21 overwintered beetles this spring, the lowest number of beetles collected since efforts to assess the winter survival of this insect were initiated in 2003. Bean leaf beetles were found in 13 fields in Columbia, Dane, Dodge, Green, Lafayette, Racine, Rock and Walworth counties from May 14-June 4, which agrees with previous surveys that have shown the principal area of adult concentration in spring is in the southern 2 tiers of Wisconsin counties. These results

suggest winter mortality was high and there will not be significant defoliation of soybeans emerging this month. Despite this forecast, fields should be monitored for feeding injury now that beetles have begun dispersing from alfalfa to soybeans.

Bean leaf beetle in soybean trifoliate *Krista Hamilton DATCP*

SMALL GRAINS

POWDERY MILDEW: Wheat fields ranging from early emergence to the late boot in Dane, Dodge, Fond du Lac, and Sheboygan counties were surveyed for indicators of disease from May 30-June 4. Powdery mildew was observed most frequently, occurring in 12 of the 32 fields, particularly in Fond du Lac County. The severity of the mildew ranged from 2-15% on the stems and leaves, and as many as 100% of the plants were infected in individual fields.

BACTERIAL LEAF BLIGHT: This very common and widespread bacterium was detected in 3 of 4 wheat fields recently sampled in Dane County. Although the symptoms of this blight are very similar to other foliar diseases, laboratory testing isolated the bacterial pathogen *Pseudomonas syringae subsp. syringae*, confirming Pseudomonas as the causal organism. Cool, wet conditions this spring have been very conducive for the development of infection on wheat and various ornamentals.

SOOTY MOLD: Several fungal species such as *Alternaria*, *Epicoccum* and *Cladosporium* are also benefiting from cool and moist weather conditions, causing sooty molds to develop on wheat leaves in Dodge and Dane counties.

BIRD CHERRY-OAT APHID: This dark olive green aphid was present in 11 of the 32 fields surveyed throughout the south central and east central areas. Conditions that favored the development of powdery mildew also favored reproduction by aphids, and in many cases both were observed in the same field.

ENGLISH GRAIN APHID: Populations continue to be low in wheat fields, with approximately 10 per 50 sweeps being the maximum number of aphids encountered in the south central areas surveyed. Many fields had no detectable populations.

WEEDS

GIANT RAGWEED: Surveys in Dane, Grant and Jefferson counties found seedlings in corn ranged from 2-6 inches tall. Giant ragweed is highly aggressive in row crops, and a single plant per 10 ft^2 has been shown to reduce soybean yields by 52% and corn yields by 55%.

Giant ragweed *Clarissa Hammond DATCP*

LEAFY SPURGE: Flowering leafy spurge plants have replaced yellow rocket as the most common weed along highways and in pastures across portions of southern Wisconsin. This invasive creeping perennial degrades pasture quality and is very difficult to control. Cultural control measures such as preventing overgrazing and irrigating pastures gives grasses a competitive advantage, and introducing sheep or goats into the pasture system can reduce leafy spurge vigor and density over time. Sheep feed on young plants in early spring, while goats consume leafy spurge all season long. When introducing grazing animals is not a practical

option, leafy spurge populations may be reduced by sequential applications of herbicide in spring when true flowers emerge, or in fall. Most control programs will need to be implemented for several consecutive years to achieve good control.

Leafy spurge *Clarissa Hammond DATCP*

REDROOT PIGWEED: Seedlings in field corn measured 2 inches tall as of June 4, 2008, nearly double the height noted during surveys last week. By mid-June, these tiny weeds will have grown tall enough to significantly reduce corn yields. Fields should be scouted now to assess weed growth stages and check the effectiveness of pre-emergence herbicides applied last month.

FRUITS

CODLING MOTH: The peak of the first flight of moths, forecast to occur at 500 degree days (base 50°F), has passed at some southern orchards and first generation eggs are beginning to hatch. Standard sprays directed against the early instar larvae should be applied 250 degree days following the biofix and 10-14 days later if necessary, before the larvae tunnel into fruits. Insect growth regulators must be applied at egg hatch, or approximately 100 degree days after the biofix.

REDBANDED LEAFROLLER: Pheromone trap counts decreased for the 4th successive week at most southern and central orchards, with few exceptions. Average weekly redbanded leafroller numbers from 24 consistently reporting orchards were as follows: 11 per trap (May 30-June 5); 19 per trap (May 22-29); 50 per trap (May 16-22); 55 per trap (May 9-15); 83 per trap (May 2-8). Bayfield County numbers were excluded from the averages due to the significant delay in moth flight activity in northern Wisconsin. Expect trap counts to remain low through mid-June, while populations mostly consist of larvae.

PLUM CURCULIO: The first apparent oviposition scars of the season were noted on May 29 by the cooperator located near Rochester in Racine County, and the first adults were captured this week in traps at Burlington in Kenosha County. Spray applications to prevent egg laying are recommended when 0.5-1% fruit injury is detected.

MEADOW SPITTLEBUG: This small, pale yellow insect which produces the characteristic spittle masses on strawberry leaves and stems has been active since mid-May. The immature form within the spittle weakens the plant by sucking plant juices, and under heavy infestation may cause stunting of the berries. If the spittle masses are prevalent and severe enough that hand removal cannot be easily accomplished, control measures should be taken as soon as they are noticed.

VEGETABLES

RED TURNIP BEETLE: Many reports and observations regarding this beetle invading gardens in Portage, Waushara and Wood counties were received by extension entomologist Phil Pellitteri. The red turnip beetle is most prevalent in the central sands area of the state where it feeds on garden vegetables and weeds in the mustard family. Hosts include broccoli, canola, radish and turnip, but hoary alyssum and yellow rocket are thought to be the primary food plants.

Red turnip beetle *Krista Hamilton DATCP*

ASPARAGUS BEETLE: Adults of the common and spotted species were noted mating and egg-laying earlier this week. Eggs were observed on May 27 in eastern Dane County and the adults were noticed shortly afterward. Lack of rainfall throughout early May slowed asparagus development considerably in some areas and caused egg laying to be delayed. Ordinarily, this event begins between 150-240 degree days (base 50°F).

Spotted asparagus beetle *www.richard-seaman.com*

NURSERY & LANDSCAPE

TAR SPOT: Moderate infection by this fungal disease was noted on silver maples in Marquette County. Symptoms include light green or yellow-green spots on the upper leaf surfaces by late spring and large, raised black circles by mid-summer. Tar spot is an aesthetic disease best controlled by clearing and destroying infected leaves from the ground to prevent the spores from spreading.

Tarspot on maple *DATCP image*

WHITE PINE BLISTER RUST: Eastern white pines in Jackson County were moderately infected with blister rust, a disease caused by the fungus *Cronartium ribicola*. The rust fungus requires white pine and the alternate host *Ribes* spp. (currants or gooseberries) to complete its life cycle, and spreads from Ribes to pine (and not pine to pine) from mid-July through late fall. Since the fungus cannot be spread to pine if Ribes are removed, eliminating all susceptible Ribes nearby is an effective control measure.

DAYLILY LEAF STREAK: Several daylily cultivars in Jackson and La Crosse counties showed early symptoms of this disease, including yellowing along the central leaf vein. Later symptoms of the disease, such as yellowish-brown streaks on the leaves and reddish-brown spots may be mistaken for daylily rust, but the two can be differentiated by the lack of dusty orange spores on plants infected with daylily leaf streak. Measures such as removing infected foliage, minimizing overhead watering, treating with fungicides, and avoiding susceptible varieties should reduce the occurrence of this disease.

Daylily leaf streak *daylilyrust.org*

DOTHISTROMA: Inspectors found trace amounts of this common fungal disease on Austrian pines in La Crosse County. Characteristic symptoms consist of reddish-brown spots or bands on the needles. The ends of infected needles beyond the bands dry out and turn brown, while the base of the needles remain green. Pines infested with Dothistroma needle blight progressively lose needles, decline, and often die within a few years. Infection typically is most severe in the lower crown. Preventative measures include keeping trees in good vigor through watering and mulching, and

promoting air circulation through pruning, adequate spacing, and weeding. Fungicide sprays applied twice during the growing season, once in mid-May and again 4-6 weeks later, may be used if symptoms are observed.

Dothistroma needle blight on pine *forestryimages.org*

FOREST

GYPSY MOTH: The BioSim Phenology model predicts that peak egg hatch was essentially complete statewide by May 30. Larvae vary from 1st - 2nd instars in the northern counties to 2nd - 3rd instars in the southern counties and no serious defoliation has yet been observed by DATCP or DNR specialists. Studies indicate that 90% of the foliage consumed by an individual larva is ingested during the final 2 larval instars. Gypsy moth larvae complete 5-6 instars before entering the pupal stage in late June or early July.

GYPSY MOTH SPRAY PROGRAM: Aerial applications were postponed several days this week due to unsuitable weather conditions. Treatments scheduled for June 3 at sites in Monroe and Jackson counties were completed on June 4 instead, along with those in Clark, Taylor and Rusk counties. Spray plans at sites in Ashland and Bayfield counties were cancelled for 2 consecutive days on June 5-6, and will be attempted again on June 7. Second applications are scheduled for Ashland, Bayfield and Rusk County next week, if current treatments are made on time and the weather permits.

GYPSY MOTH TRAPPING PROGRAM: Trap setting was 100% complete in Adams, Columbia, Rock and Walworth counties, and approximately 11,000 of the 32,400 pheromone traps planned for deployment this season were set as of June 4.

TRAPPING NETWORKS

BLACK LIGHT TRAPPING: Counts of European corn borers increased at 6 of 10 locations this week, while captures of true armyworm moths escalated at the Janesville, Lancaster and Wausau locations. The high count for the week was 27 true armyworm moths at Janesville. Celery looper numbers essentially remained static and forage looper moths were registered at 7 of 10 sites compared to 2 of 10 sites the previous week. Few dingy and variegated cutworms were captured in traps at Chippewa Falls and East Troy.

CORN EARWORM: With the first migrant moths of the season captured at Janesville on June 3, pheromone traps should be placed over the weekend to monitor the early arrival of the corn earworm. The Insect Migration Risk Forecast (IMRF) predicted a MODERATE risk of migration into the Midwest for June 5, which may result in a noticeable increase in trap counts in the immediate future.

Corn earworm pheromone trap *Krista Hamilton DATCP*

APPLE INSECT & BLACK LIGHT TRAP COUNTS MAY 30 - JUNE 5

COUNTY	DATE	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	AM RED[5]	AM[6]
Bayfield	5/30-6/05	Apple Hill	*1584					
Bayfield	5/30-6/05	Bayfield Apple	*205					
Bayfield	5/30-6/05	Blue Vista	477	2		2		
Bayfield	5/30-6/05	Erickson's	*936					
Bayfield	5/30-6/05	Hillcrest	*2061					
Bayfield	5/30-6/05	Lobermeier	160	183	0	0		
Bayfield	5/27-6/02	Orienta	30	0				
Brown	5/30-6/05	Oneida	400	27	4	5		
Crawford	5/30-6/05	Gays Mills	54	10	71	0		
Dane	5/30-6/05	Deerfield	20	25	18	0		
Dane	5/30-6/05	Stoughton	12	27	8	0		
Dane	5/29-6/03	West Madison	13	0	29	0		
Dodge	5/30-6/05	Brownsville	3	0	0.5	0		
Fond du Lac	5/30-6/05	Campbellsport 1	0	26	0	0		
Fond du Lac	5/30-6/05	Campbellsport 2	5	35	0	0		
Fond du Lac	5/30-6/05	Malone	53	5	3	0		
Fond du Lac	05/30-6/5	Rosendale	48	21	4	0		
Grant	5/30-6/05	Sinsinawa	0	0	14	0		
Green	5/30-6/05	Brodhead	0	2	4	4		
Iowa	5/30-6/05	Dodgeville	75	1	83	1		
Iowa	5/30-6/05	Mineral Point	0	7	0	0		
Jackson	5/30-6/05	Hixton	38	17	2	1		
Kenosha	5/30-6/05	Burlington	25	4	1	0	*4 PC	
Marquette	5/27-6/03	Montello	901	2				
Marinette	5/30-6/05	Niagara	108	14	2	0		
Ozaukee	5/29-6/05	Mequon	27	3	11	0		
Pierce	5/30-6/05	Beldenville	10	4	24	0		
Pierce	5/28-6/05	Spring Valley	42	38	0	0		
Racine	5/29-6/05	Rochester	**81	1	3.93	0		
Racine	5/30-6/05	Raymond	26	9	4	3		
Richland	5/29-6/04	Hill Point	31	4	23	0		
Sheboygan	5/30-6/05	Plymouth	105	41	5	8		
Waukesha	5/30-6/05	New Berlin	27	0	17	1		
Walworth	5/30-6/05	Elkhorn	11	8	7	12		
Walworth	5/30-6/05	East Troy	0	0	2	3		

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller; [5]Apple maggot red ball; *Unbaited red ball; **Baited red ball; [6]Apple maggot yellow board; *Counts were averaged; **Two weeks, May 22-June 5.

COUNTY	DATE	SITE	ECB[1]	TA[2]	BCW[3]	SCW[4]	DCW[5]	CE[6]	CEL[7]	ALFL[8]	FORL[9]	VCW[10]
Chippewa	5/29-6/05	Chipp. Falls	0	0	0	0	4	0	0	0	0	0
Columbia	5/30-6/04	Arlington	0	0	0	0	0	0	2	0	2	0
Dane	5/30-6/05	Mazomanie	5	0	2	0	0	0	3	0	1	0
Grant	5/30-6/04	Lancaster	4	2	0	0	0	0	1	1	0	0
Manitowoc	5/30-6/05	Manitowoc	0	2	0	0	0	0	2	3	7	0
Marathon	5/30-6/05	Wausau	0	6	1	0	0	0	3	0	4	0
Monroe	5/30-6/05	Sparta	5	0	0	1	0	0	2	2	6	0
Rock	5/30-6/05	Janesville	2	27	0	0	0	1	9	0	2	0
Walworth	5/30-6/05	East Troy	2	0	0	3	0	0	0	0	0	11
Wood	5/30-6/05	Marshfield	1	3	0	0	0	0	5	2	1	1

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