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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

A complex low pressure system moved across Wisconsin early in the week, producing scattered strong to severe thunderstorms over the southern half of the state with hail at some locations. Average rainfall amounts were in the ¼ - ½ inch range. The high pressure that followed brought quiet weather and drier, more stable air through the end of the week. Corn and soybean progress has been excellent, but the lack of sufficient rainfall continues to stress crops in the southeast, central and northern counties. Soil moisture conditions are reported as short or very short for 31% of Wisconsin crop lands. In the southeast, conditions are short or very short for 94% of lands. The state average corn height was 79 inches this week, with 62% tasseled. Soybeans are reported at 77% bloomed, with 32% showing pods. Harvesting of second crop alfalfa is 88% complete statewide.

LOOKING AHEAD

CORN EARWORM: Significant flights were registered at 3 of 14 pheromone trap locations during the last reporting period. Sweet corn producers in the south central and central counties may expect corn earworm infestations if susceptible fields are not sprayed in a timely manner. Chemical treatments are recommended when counts of 5-10 moths are registered in 3 consecutive nights and should be applied every 2-5 days (or every 100 degree days) until the silks turn brown.

JAPANESE BEETLE: An economic infestation of Japanese beetles was observed in a seed corn field in near Middleton in Dane County. Approximately 85% of the silks had an average of 3-4 beetles, with the largest numbers occurring in the peripheral rows. According to the inspector, many of the silks were pruned to less than ½ inch.

EUROPEAN CORN BORER: The treatment interval for second generation larvae is open near Madison, Eau Claire, Green Bay and in southern and central locations where accumulations of 1,550 degree days (base 50°F) were surpassed this week. Corn fields should be inspected now to determine the percent of plants infested with egg masses and small larvae. Controls must be applied before larvae bore into corn stalks, around 2,100 degree days.

TWO-SPOTTED SPIDER MITE: This mite regularly begins to cause noticeable yellowing of leaves in the margin rows of soybeans by early August, particularly during periods of prolonged dryness. Symptoms were not observed in the fields examined this week, but growers are advised to monitor soybeans at 4-5 day intervals for stippling associated with early mite infestation.

ALERT

EMERALD ASH BORER: On August 1, 2008, the emerald ash borer was positively identified in Ozaukee County. This is the first detection of the invasive, wood-boring beetle in the State of Wisconsin. An employee with the WDNR, responding to a citizen's report of dying ash trees, collected one adult beetle and numerous larvae from ash trees located in a private wood lot in the Township of Saukville. Twenty to 25 trees in the immediate vicinity displayed woodpecker flecking, bark splitting, D-shaped exit holes, and dieback. Extensive serpentine galleries were seen under the bark of several trees when the bark was removed.

Emerald ash borer galleries *Mark Guthmiller WDNR*

Wisconsin is the tenth state to report a confirmed emerald ash borer infestation. The first U.S. detection occurred in southeastern Michigan in 2002. Since then, emerald ash borer has been responsible for the death and decline of over 30 million ash trees in the states of Ohio, Indiana, Illinois, Maryland, Missouri, Pennsylvania, West Virginia and Virginia, as well as the Canadian Provinces of Quebec and Ontario.

The first steps in responding to the infestation will be to quarantine movement of hardwood firewood, ash nursery stock, timber or any other article that could spread emerald ash borer out of the infested area. Following establishment of the quarantine, a comprehensive delimiting survey of the area will be conducted to determine the density and distribution of the infestation. Beyond the immediate quarantine and survey of the area, a management strategy will not be suggested until the survey is complete and the responding agencies and partners have had an opportunity to consult with additional state and local officials.

DEGREE DAYS MARCH 1 - AUGUST 7

LOCATION	50°F	2007	NORM	48°F	40°F
Dubuque, IA	1852	2061	—	1930	2986
Lone Rock	1698	1980	—	1782	2773
Beloit	1872	2043	—	1908	3002
Madison	1690	1949	1868	1793	2764
Sullivan	1792	1879	1901	1825	2895
Juneau	1708	1870	—	1792	2778
Waukesha	1685	1835	—	1758	2757
Hartford	1648	1859	—	1763	2710
Racine	1610	1827	—	1711	2674
Milwaukee	1583	1821	1710	1683	2640
Appleton	1614	1825	1729	1728	2646
Green Bay	1513	1704	1667	1631	2541
Big Flats	1554	1834	—	1646	2561
Hancock	1577	1823	1841	1664	2590
Port Edwards	1512	1908	1763	1608	2507
La Crosse	1700	2123	2024	1773	2764
Eau Claire	1553	1952	1828	1640	2572
Cumberland	1360	1786	1740	1440	2324
Bayfield	1085	1428	1349	1158	1975
Wausau	1385	1697	1678	1479	2345
Medford	1320	1644	1518	1413	2270
Crivitz	1395	1644	—	1507	2389
Crandon	1241	1548	1364	1315	2155

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

Emerald ash borer *forestryimages.org*

In the meantime, residents are reminded to follow all quarantine guidelines, including not moving firewood out

of the quarantined area, and report suspicious ash trees by calling the Wisconsin Emerald Ash Borer Program hotline toll-free at 1-800-462-2803.

FORAGES

POTATO LEAFHOPPER: Continue to monitor third and fourth crop regrowth for nymphs, which are still being produced at a rapid rate. Despite the lack of yellowing indicative of leafhopper feeding, moderate to high populations are present in scattered alfalfa fields statewide. The economic threshold for this insect is 0.2 per sweep in 3 inch alfalfa, 0.5 per sweep in 6 inch alfalfa, 1.0 per sweep in 8-11 inch alfalfa, and 2.0 per sweep in alfalfa taller than 12 inches.

PLANT BUG: Nymphs remain abundant in alfalfa fields, indicating that reproduction has not slowed in the past week. Levels of these insects should be monitored throughout August to ensure populations do not exceed the threshold of 5 adults or nymphs per sweep.

ALFALFA CATERPILLAR: Adults are numerous in alfalfa in the southern and central counties. Recent surveys in the past week found counts of larvae ranging from 1-6 per sweep.

CORN

EUROPEAN CORN BORER: The second flight continued in the southwest and south central counties with the capture of 0-10 moths in the past week. If nightly temperatures remain relatively warm, black light traps are expected to register the peak of the summer flight of moths by August 11 in the southern districts, August 15 in the central districts, and August 23 in the northern districts. Control treatments for the second generation of corn borers are suggested when 50% of the plants show egg masses or recent feeding injury from1,550-2,100 degree days (base 50°F).

CORN ROOTWORM: Emergence of rootworm adults is well underway throughout the state. Surveys found counts of 0.2-8.8 beetles per plant in Dane County, with economic populations above 0.75 per plant in 60% of the fields examined. Corn fields with fresh silks should be checked at this time to determine if populations are high enough to interfere with pollination. An insecticide treatment is warranted when 5 beetles per plant are present and silks are pruned to ½ inch or less before 50% of the plants are pollinated. Peak adult emergence remains about 1 week away.

Light silk pruning by corn rootworm beetles *Krista Hamilton DATCP*

WESTERN BEAN CUTWORM: A decrease in moth counts has been registered at many locations in the southern and central areas where the degree day standard is well past 1,526 degree days (base 50°F), the point at which 75% emergence is expected. In Adams and Marquette counties in the central district, the emergence of western bean cutworm moths escalated this week with the capture of 278 moths at 14 locations. High counts for the week were 75 moths in a black light trap near Arlington in Columbia County and 116 moths in a pheromone trap near Spring Bluff in Adams County. Examine fields closely in the next week to appraise the percent of plants infested with larvae (1st to 3rd instar) and the development of this pest. Treatment is justified if 8% of the plants are infested, and should be applied when 90-95% of the tassels have emerged. In fields where the tassel emergence has occurred, the application should be timed to coincide with 70-90% egg hatch.

SOYBEANS

SOYBEAN APHID: Surveys in soybeans are incomplete, but preliminary results indicate LOW population densities of 1-100 aphids per plant for 224 (81%) of the 277 fields sampled as of August 6, MODERATE densities of 101-249 aphids per plant for 37 (13%) of the fields, and HIGH densities of 250 or more aphids per plant for 16 (6%) of the fields distributed in Chippewa, Columbia, Dane, Green Lake, La Crosse, Marquette, Pierce, Polk,

Portage, St. Croix, Waupaca and Wood counties. Densities remain variable, but generally below economic levels. Field specialists surveyed soybean fields in the west central, central, northwest and northeast counties in the past week and found mostly low to moderate populations. In the northeast, average densities were below 69 aphids per plant in the soybean fields examined. The exceptions were encountered in Pierce, La Crosse, Portage and Wood counties where some fields contained average densities ranging from 253-800 aphids per plant on 100% of the plants, and several fields with very low numbers of aphids apparently had been sprayed. Foliar treatments are still recommended for those fields in which densities reach 250 aphids per plant on 80% of the plants. However, the benefits of such treatments diminish beyond the R5 growth stage (beginning seed) and no yield benefit is gained by treating fields at R6 (full seed) or later.

Soybean aphids Krista Hamilton DATCP

SOYBEAN WILT: A survey for soybean root rot and vascular wilt was conducted in 50 randomly selected V2-V3 stage soybean fields following heavy rains earlier this season. In each field, surveyors sampled plants that exhibited wilting, chlorosis or stem lesions. Preliminary survey results show that soybean plants from 8% of the sampled fields tested positive for *Phytophthora sojae*, and *Pythium* spp. was isolated from 24% of the fields. *Fusarium* was isolated from plants representing 40% of sampled fields. Stem lesions caused by *Phomopsis* were found in 12% of the fields, while anthracnose and *Verticillium* were found in 2 fields each. Root lesion nematodes (*Pratylenchus* spp.) were detected in 20% of the fields by identifying nematodes that emerged from lesions on soybean roots. Weather related plant injuries were observed in 26% of the fields.

VEGETABLES

CABBAGE LOOPER: Moderate numbers of moths are appearing at the Bourbonnais, IL trapping location, while elsewhere counts remain low. Totals for the trapping period of August 1-7 were 38 moths at Bourbonnais and 0 moths at Chippewa Falls, the northernmost monitoring site. Small larvae were observed at the rate of 5-10 per plant on cruciferous plants near Bourbonnais.

FRUITS

CRANBERRY PESTS: Progress on the cranberry crop continues at a satisfactory pace. Heat units (degree days) remain slightly behind average and the same period last year. As a result, insect populations and development have been impacted. Growers report that control measures for fruitworms are about complete. Flea beetle and cranberry girdler activity is beginning to escalate. Later treatments for these economically important pests reflect the slower pace of the season. Populations of girdlers and flea beetles appear to be about normal this year. With a good fruit set and adequate growth, anticipation is high for a good harvest.

– Tod Planer, WSCGA Whole Farm Conservation Project

OBLIQUEBANDED LEAFROLLER: Orchardists are reminded to replace lures for this insect and the Oriental fruit moth regularly through September, long after spraying is discontinued for the season. The larvae of these pests can cause significant fruit damage in August and September.

CODLING MOTH: Reports indicate there is considerable variation in moth numbers between orchards. Pheromone trap counts generally have lessened, but several locations reported economic numbers (> 5 moths) during the August 1-7 monitoring period. On the basis of the degree day model for this insect, the peak of the second flight of moths should have occurred in the southern districts where 1,577 degree days (base 50°F) were surpassed this week. Orchard IPM Specialist John Aue noted that counts of second flight moths are higher than counts from the first flight in some areas, which he attributed to infestations within the orchard, and not outside source populations. He recommends regular scouting to assess the effectiveness of management programs and to monitor for insecticide resistance.

APPLE MAGGOT: Rains prompted the emergence of additional apple maggot flies at orchards in the southern and west central areas. John Aue cautions apple growers to make sure this insect is being identified correctly. He has observed a very similar species in some Sauk County orchards with the same F-shaped wing banding pattern and white spot on the thorax, but an orange body.

Apple maggot fly Tom Murray www.pbase.com

BLACK ROT & WHITE ROT: With harvest underway, growers are urged to monitor for symptoms of fruit rots, noting the varieties affected and the pattern of distribution. Light amounts of both black rot and white rot were obeserved in orchards in the past week. These fruit rots are easily identified by expanding lesions with concentric rings; black rot is a dry rot, while white rot is typically moist and soft beneath the lesion.

SOOTY BLOTCH/FLYSPECK: A few small orchards in Green County are 100% infested with this disease complex, according to a report from John Aue. Symptoms can appear quickly in years when there is a combination of moisture and heat in July and August. Generally sooty blotch covers more fruits in a short period of time. Both diseases are considered to be aesthetic problems, but they may become an issue for storage apples.

POWDERY MILDEW: The incidence of powdery mildew has increased significantly this season. Apple growers should continue to inspect leaves for symptoms, including white terminals with rolled or cupped leaves and white, powdery growth on the upper and lower leaf surfaces. Fungicides for sooty blotch/flyspeck are effective in controlling this disease, but will not eliminate symptoms that are already visible.

RUST MITES: Fruit russetting symptoms caused by rust mites should have appeared by now. Populations are expected to decrease in the near future, but heavily infested leaves may persist in some orchards.

WEEDS

WILD CARROT: Mature plants were observed from Monroe in Green County as far north as Plymouth in Sheboygan County this week. Wild carrot or Queen Anne's lace is a biennial plant that forms basal rosettes in the first year and sends up flowering stalks in the second year. Plants are most noticeable during the second year of growth because of their large, white umbel flowers.

Wild carrot Clarissa Hammond DATCP

SPOTTED KNAPWEED: Flowering plants in Dane County are beginning to form seeds. Control measures directed against this increasingly problematic, invasive plant should be initiated before the seeds mature.

VELVETLEAF: Green seed pods are developing on flowering plants in the southern 3 tiers of Wisconsin counties. Although velvetleaf has not become a widespread problem in row crops this season, some fields contain moderate densities and would benefit from spot treatments or hand removal prior to seed maturation.

CANADA THISTLE: White, fluffy seeds have replaced the purple flowers of Canada thistle that were visible since

mid-July. Management programs to control this creeping perennial, such as seed removal and destruction, should be implemented before the seeds are dispersed by wind and new populations begin to establish.

Canada thistle seeds *Clarissa Hammond DATCP*

RAGWEED: Subtle flowers are beginning to form on the most advanced common and giant ragweed plants in the southern and central counties. Ragweed flowers produce substantial amounts of pollen that cause late summer and fall allergies. Pollen level forecasts for the period of August 8-9 range from HIGH to VERY HIGH near Madison in the south central area to MODERATE near Bayfield in the north.

Common ragweed *Clarissa Hammond DATCP*

WOOLY CUPGRASS: In the vegetative stages (prior to seed formation), woolly cupgrass is very difficult to distinguish from various species of foxtail. Identification of this grass is easiest during the reproductive stages. Its characteristic seed heads with 1-2 rows of hanging seeds were noted for the first time during surveys conducted from August 4-7.

FIELD SANDBUR: Bristly sandbur seeds, which are readily dispersed by people and animals, were observed on mature plants in the south central area this week.

NURSERY & LANDSCAPE

GOLDEN CANKER: Nursery inspectors observed this common branch canker on pagoda dogwood trees in Dane County. Symptoms include wilting and death of leaves, followed by branch dieback. Diseased branch tissues turn bright, golden-yellow in color and develop numerous small, orange fruiting bodies. Infected branches should be pruned 4-6 inches below the golden-yellow tissue.

Golden canker on pagoda dogwood *Liz Meils DATCP*

GYPSY MOTH: Eggs are being deposited on suitable hosts (and virtually anything else) in the eastern half of the state. The tan egg masses, which vary in shape and range from 1-2 inches long, may be scraped from the bark of trees and placed into a container of soapy water for a minimum of 24 hours. For larger infestations, non-toxic insecticides such as Btk (*Bacillus thurnigiensis* var. *kurstaki*) may be applied early in spring, shortly after the larvae emerge and begin feeding.

BRONZE BIRCH BORER: Metallic greenish to bluish-black adults were found on whitespire birch in Manitowoc County, signaling that eggs are being deposited under loose bark or in the cracks of trees under stress due to drought, disease, sun exposure or nutrient deficiency.

Larval feeding beneath the bark damages trees by preventing the movement of food and water to tissues above the attack site, resulting in thinning or dieback of leaves and branches in the upper crown and adventitious growth in the lower crown. Infested trees also develop swollen or lumpy areas on the trunk. The risk of bronze birch borer attack can be reduced by selecting a proper planting location (semi-shaded, moist sites) and promoting tree vigor. In nurseries, infested trees should be promptly removed and destroyed.

Bronze birch borer with D-shaped exit holes *insectimages.org*

POOR WEED CONTROL: Examples of poor weed control are evident in many nurseries statewide. Lack of adequate weed control puts plants at an elevated the risk of developing pest and disease outbreaks, and many weed species are alternate hosts for various bacterial and fungal diseases. Several common weeds are beginning to flower and set seed, making it an opportune time to reduce their production by mowing, tilling and mulching between the rows. Caution should be taken to avoid spreading seeds that have already been produced.

TRAPPING NETWORKS

CORN EARWORM TRAPS: Numbers of corn earworm moths escalated sharply at several south central Wisconsin trap locations, indicating the start of the primary flight. Pheromone trap counts for the period of July 28-August 5 were as follows: Cottage Grove (260); Stoughton (250); Sun Prairie East (143); Madison (48); Evansville (40); Tomah B (30); Lancaster (21); Sun Prairie North (15); Cashton (8); Marshfield (4); Wausau (1); Chippewa Falls (0); Janesville (0); Sparta (0).

BLACK LIGHT TRAPS: The summer flight of European corn borer moths has produced very low numbers at the black light trap locations during the last reporting period, despite favorable nighttime temperatures. The average count this week was 4 moths. Degree day accumulations are appropriate for the peak of the second flight to occur in the southern counties, and higher numbers are likely to be registered in the week ahead. An increase in dingy cutworm activity was documented, with comparatively large flights registered near Wausau (124), Marshfield (59) and Chippewa Falls (23). Numbers of western bean cutworm moths decreased at all but the Arlington site where 75 moths were registered (compared to 73 moths last week), and forage loopers were collected at most locations. The weekly high forage looper count was 45 at Manitowoc.

Dingy cutworm moth *Will Cook, 2006*

APPLE INSECT & BLACK LIGHT TRAP COUNTS AUGUST 1- 7

COUNTY	DATE	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	AM RED[5]	AM YELLOW[6]
Bayfield	8/01-8/07	Bayfield Apple			1 max5			
Bayfield	8/01-8/07	Lobermeier	139	177	0	16	0	0
Bayfield	8/01-8/07	Orienta	98	0	0	0	0	0
Brown	8/01-8/06	Oneida	890	88	19	0	0	0
Crawford	8/01-8/07	Kickapoo	45	2	11	0	*1	0
Dane	7/31-8/07	Deerfield	565	31	13	1	1	0
Dane	8/01-8/07	Stoughton	200	9	18.5	3	0	0
Dane	8/01-8/06	West Madison	180	6	13	5	0	0
Dodge	8/01-8/07	Brownsville	252	7	3	3	0	0
Fond du Lac	8/01-8/07	Campbellsport 1	27	80	0	42	0	0
Fond du Lac	7/30-8/07	Rosendale	81	36	2	0	0	0
Green	8/01-8/07	Brodhead	10	12	7	0	0	0
Iowa	8/01-8/07	Dodgeville	180	2	49	2	6	10
Jackson	8/01-8/07	Hixton	130	10	3	1	0	1
Kenosha	8/01-8/07	Burlington	218	5	5.2	4.3	0.66	0
Marinette	8/01-8/07	Niagara	273	16	8	0	6	1
Marquette	8/01-8/07	Montello	21	2	2	0	0	0
Ozaukee	7/31-8/07	Mequon	15	15	4.8	0	**4.8 *0.8	—
Pierce	8/01-8/07	Spring Valley	162	23	0	0	*2 max7	0
Racine	8/01-8/07	Raymond	1655	21	4	5	0	0
Racine	8/01-8/07	Rochester	430	3	3.43	3	*0.9	0
Richland	8/01-8/07	Richland Center E	29	27	24	0	0	0
Sauk	8/01-8/07	Baraboo	162	5	1	1	0	0
Sheboygan	8/01-8/07	Plymouth	112	88	4		**15	0
Walworth	8/01-8/07	East Troy	—	3	10	2	1	0
Walworth	8/01-8/07	Elkhorn	50	—	10	36	2	3
Waukesha	8/01-8/07	New Berlin	1089	26	12	2	0	0

[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

COUNTY	DATE	SITE	ECB[1]	TA[2]	BCW[3]	SCW[4]	DCW[5]	CE[6]	CEL[7]	WBC[8]	FORL[9]	VCW[10]
Chippewa	7/30-8/06	Chipp. Falls	3	2	0	0	23	0	1	0	2	0
Columbia	7/31-8/04	Arlington	6	3	0	0	7	7	1	75	5	0
Dane	7/31-8/07	Mazomanie	0	6	0	2	0	1	0	15	2	0
Grant	7/31-8/07	Lancaster	1	6	0	0	5	3	8	4	15	0
Manitowoc	7/31-8/07	Manitowoc	0	6	0	11	17	0	1	0	45	0
Marathon	7/31-8/07	Wausau	3	3	0	1	124	0	1	4	22	2
Monroe	7/31-8/07	Sparta	2	0	0	0	3	0	0	25	3	0
Rock	7/31-8/06	Janesville	9	7	0	0	0	2	30	0	9	0
Walworth	7/31-8/07	East Troy	10	0	0	0	12	1	2	4	0	0
Wood	7/31-8/07	Marshfield	6	3	0	0	59	1	3	1	21	4

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