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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

Heat and humidity yielded to cooler conditions across Wisconsin during the last days of August. Afternoon high temperatures climbed to the 80s and low 90s early in the week before moderating into the 70s on Wednesday. Periodic showers and storms continued throughout the state. Rainfall amounts were most significant in the northwest where locally heavy downpours of 1-3 inches occurred on August 25. The rain alleviated soil moisture deficits that began in July and improved yield prospects for corn, soybeans and other summer crops. According to the USDA NASS, topsoil moisture ratings are now adequate or surplus for more than 82% of crop lands, a dramatic recovery from only 55% two weeks ago when supplies had declined to the lowest level of the summer. Although crop conditions have improved with the beneficial rain of late August, considerable heat will be needed in September to accelerate crops toward maturity after a cooler-than-normal growing season.

LOOKING AHEAD

CORN ROOTWORM: The statewide beetle survey was completed earlier this week. Review of the data indicates that counts are generally lower than last year across much of Wisconsin, with the exception of the southwest and west-central districts. The 2014 state average of 0.4 beetle per plant represents a slight decline from 0.5 per plant in 2013. Results of the survey are summarized on page 114.

EUROPEAN CORN BORER: Egg deposition is expected to continue for another two weeks. The treatment window for second generation larvae has closed near Beloit, Madison, La Crosse and Sullivan, and remains open only a few more days in the southeast and central districts. Final inspections for egg masses and small larvae should be conducted before 2,100 degree days (modified base 50°F) are reached.

SOYBEAN APHID: Densities have increased to economic levels in some fields this month. According to surveys conducted from August 21-27, approximately 20% of soybean sites sampled in Calumet, Dane, Dodge, Green, Fond du Lac, Lafayette, Manitowoc, Richland and Sauk counties contained above-threshold populations of 250-770 aphids per plant. The average was 132 aphids per plant. Many fields are approaching R5.5-R6, the growth stages at which no yield benefit is gained by insecticide treatment. Late-season control is probably uneconomical for most soybeans at this point.

CORN EARWORM: The first significant migration of 2014 was noted from August 21-27 in Dane, Dodge, Green Lake and Fond du Lac counties where 2,748 moths were registered in six pheromone traps. The weekly high count

was 878 moths per trap near Mayville in Dodge County. This late-season flight ensures that the risk of egg laying and damage to sweet corn will persist in September.

FALL PESTS: The fall invasion of Wisconsin's resident nuisance pest insects can be expected next month. Boxelder bugs, multicolored Asian lady beetles, western conifer seedbugs and, potentially, brown marmorated stink bugs are likely to aggregate on the sides of homes and buildings in September and early October as they migrate indoors for the winter. Mechanical exclusion by sealing cracks around windows, doors, siding and other openings is advised to prevent these insects from entering residences. Exterior applications of insecticides may offer temporary control of infestations when completely sealing the exterior is difficult or impossible. Applications should consist of a synthetic pyrethroid applied by a licensed pest control operator by early October, prior to insect aggregation. Under no circumstance should chemical insecticides be used indoors.

Boxelder bug www.batzner.com

LATE BLIGHT: Continued development on tomato and potato has been reported, including two new cases of the disease on potato in Adams and Waushara counties. Protective treatments of green vines with a late blight-specific fungicide on a five- to seven-day schedule should be maintained. Potato tubers remain susceptible to infection even when very little foliage is present.

WESTERN BEAN CUTWORM: The annual survey documented the lowest moth count in the last decade. The state cumulative count was 502 moths in 103 traps, or an average of five per trap. This compares to 663 moths in 2013 (five per trap) and a survey record of 10,807 moths in 2010 (79 per trap). Predictably, larval infestations in corn have also been scarce this season.

DEGREE DAYS JANUARY 1 - AUG 27

LOCATION	50°F	2013	NORM	48°F	40°F
Dubuque, IA	2224	2195	2348	2370	3464
Lone Rock	2235	2139	—	2362	3468
Beloit	2270	2319	2388	2405	3522
Sullivan	1836	2110	2261	2005	3016
Madison	2119	2140	2275	2256	3345
Juneau	1954	1999	—	2120	3146
Racine	1801	1908	—	1989	3004
Waukesha	1836	1916	—	2005	3016
Milwaukee	1785	1866	2191	1962	2968
Hartford	1836	1880	—	2005	3016
Appleton	1829	1883		2005	3003
Green Bay	1715	1797	2046	1896	2883
Big Flats	1968	1889	—	2078	3097
Hancock	1968	1906	2205	2078	3097
Port Edwards	1905	1847	2162	2043	3020
La Crosse	2228	2115	2484	2355	3437
Eau Claire	2021	1987	2242	2171	3187
Cumberland	1763	1771	2101	1917	2855
Bayfield	1289	1349	—	1393	2232
Wausau	1673	1701	2058	1828	2756
Medford	1612	1737	1885	1771	2693
Crivitz	1616	1673	—	1774	2710
Crandon	1471	1559	1598	1594	2472

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

FORAGES & GRAINS

POTATO LEAFHOPPER: Surveys conducted in Dane, Green, Richland and Sauk counties during the last week of August found non-economic populations. Counts were below 1.0 per sweep in all fields sampled and the average was only 0.3 per sweep. Nymphs are appearing less frequently in sweep net collections and significant population increases are unlikely to occur during the remainder of the growing season.

GRASSHOPPER: This pest remains abundant in the grassy areas adjacent to alfalfa, but minimal feeding injury is evident beyond the field margins. Alfalfa fields with counts in excess of 3-4 per sweep are not unusual in portions of western Wisconsin.

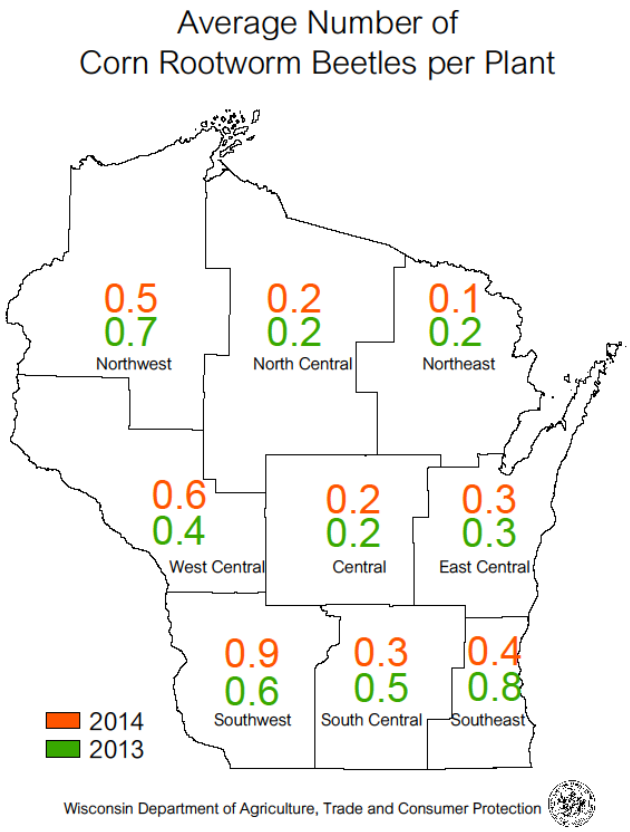
PEA APHID: Counts have escalated in individual fields. Several alfalfa fields surveyed in Richland and Sauk counties contained 4-6 per sweep, the highest populations documented in several weeks. Other sites had fewer than two per sweep. Pea aphids have been of minor importance this year.

ALFALFA CATERPILLAR: The adult stage of this insect is fairly abundant in alfalfa in the southern two-thirds of the state, suggesting an increase in larvae may occur by early September. Severe alfalfa caterpillar damage is rare, but results when large numbers of female butterflies oviposit on recently cut fields and the emerging larvae defoliate the regrowth.

Alfalfa caterpillar butterfly *Krista Hamilton DATCP*

CORN

CORN ROOTWORM: Results of the August beetle survey indicate populations are lower than last year across the eastern half of the state and higher in portions of western Wisconsin. District averages in the state's nine crop reporting regions ranged from 0.1-0.9 beetles per plant and compare to averages of 0.2-0.8 per plant in 2013. The most significant decrease was documented in the southeast where the average declined from 0.8 to 0.4 per plant. Beetle counts also decreased in the south-central area, from 0.5 in 2013 to 0.3 in 2014. Conversely, the largest population increase occurred in the southwest district where the average rose from 0.6 to 0.9 beetles per plant, although part of this increase was due to an exceptionally high count of 11.2 per plant in a Lafayette County field. Excluding this count, the district average would have been equivalent to the 2013 average at 0.6 per plant. Above-threshold counts of 0.75 or more beetles per plant were found in 37 of 229 (16%) fields surveyed, which is lower than last year's 18% and well below the five-year average of 25%. The statewide average of only 0.4 beetle per plant is the lowest since 2010.



WESTERN BEAN CUTWORM: Light damage to corn was noted this week in Jackson and Monroe counties, where an estimated 1-3% of ear tips were infested with late-instar larvae. Most of the population is advanced and should enter the pre-pupal stage by early September. A few late moths are still appearing in black light traps but the flight has essentially ended. The 2014 trapping survey documented the smallest flight in in the ten-year history of the program, collecting only 502 moths in 103 traps (five moths per trap average).

EUROPEAN CORN BORER: Second generation larvae range from second- to fifth-instar in the southern and west-central counties. Larval infestations affecting 2-20% of the plants have been reported in a few late-planted sweet corn fields, but most sites appear to have had adequate control. Nearly all of the older, fourth and fifth-instar larvae present by late August will enter diapause and will not pupate until next spring.

SOYBEANS

SOYBEAN APHID: Densities have increased in most fields since mid-August, with about 20% of sites surveyed this week containing economic counts of 250-770 per plant and 28% showing moderate averages in the range of 50-249 per plant. None of these sites had counts above 12 aphids per plant when last sampled in late July. A few late-planted soybean fields may still show benefit from treatment, but aphid populations are expected to decline soon due to biological controls (e.g., lady beetles, lacewings, parasitic wasps, fungal pathogens), reduced nutritional content of soybeans at R5 and beyond, and other environmental factors. Any late-season management decisions for fields in the R5-R5.5 (beginning to mid-seed) stages must be made in the immediate future.

GREEN CLOVERWORM: Larvae of various sizes are still causing light defoliation of soybeans in the southern and west-central counties. The damage observed in the past week was minor. Populations have been low since the first caterpillars appeared in mid-July.

JAPANESE BEETLE: Adults continue to be active and fairly common in soybeans. Defoliation has not exceeded economic thresholds and control has not been warranted for most fields this summer. The heaviest infestations in soybeans were noted in west-central and northwest counties earlier this month.

Japanese beetle *Krista Hamilton DATCP*

FRUITS

CODLING MOTH: Counts remain high for late August. The weekly average based on reports from 19 orchards was above-threshold at seven moths per trap, with a range of 1-23 per trap. The peak of the second flight has occurred at most locations, but additional treatments may be required before harvest if the moths remain numerous. Pheromone traps should be checked until 1,700 degree days (modified base 50°F) have accumulated from the first biofix, at which time approximately 90% of second-flight adults will have emerged.

BROWN MARMORATED STINK BUG: Fruit growers are advised to watch for this pest next month and in October as the bugs swarm on warm fall days in search of protected, overwintering sites. Brown marmorated stink bug is thought to be established at very low levels in Dane and Jefferson counties, although it has never been detected in any fruit, vegetable or field crop anywhere in the state. Similar to the multicolored Asian lady beetle and boxelder bug, BMSB aggregates on the exteriors of buildings on warm fall days in search of protected, overwintering sites. Any swarms of stink bugs noticed this fall should be reported to DATCP at 1-866-440-7523.

Brown marmorated stink bug *Washington State University Extension*

APPLE MAGGOT: Fly activity has persisted with the recent wet weather, and enough adults are still present in some orchards to cause problems in late cultivars. Counts ranged as high as 24 per trap for the period of August 21-27, with the weekly high capture reported from Niagara in Marinette County. This season's AM flights have been directly correlated to heavy rainfalls of 1-2 inches. Apple growers should continue to monitor AM traps through the first week of September.

OBLIQUEBANDED LEAFROLLER: Orchardists are reminded to maintain pheromone traps for this insect throughout September. Second generation larvae occasionally

cause severe fruit damage late in the growing season and moth counts in late August and September can be an indication of damage potential by first brood larvae next spring.

SPOTTED WING DROSOPHILA: Larvae and adult flies have been confirmed in 14 Wisconsin counties as of August 28, although infestations are undoubtedly more widespread. This insect poses a serious risk to ripening fruit again this year, making it imperative for growers with SWD infestations to continue treatments every 4-5 days through harvest. A list of insecticide options can be found on the UW-Madison SWD website at http://labs.russell.wisc.edu/swd/management-2/. For organic operations, the OMFI-approved insecticides PyGanic and Entrust are available for SWD control.

SPOTTED TENTIFORM LEAFMINER: The third and last flight of the season has peaked and is now declining at most orchards. Moths have been very abundant at some locations during this flight, with a weekly high count of 1,280 moths registered at Hillpoint in Richland County since mid-August. Another larval generation should be anticipated in September based on the trap counts registered in the last two weeks. Apple growers experiencing large numbers of third brood moths may assess infestations by monitoring orchard perimeters for leaf mines.

VEGETABLES

FALL ARMYWORM: Low counts of this late-season pest have been registered at a few black light trap locations in the past two weeks. Fall armyworm moths seldom arrive in Wisconsin in damaging numbers, but the larvae occasionally appear in corn where they can be mistaken for the corn earworm. Fall armyworm larvae have a lateral stripe, are usually light brown or black in color, and have a conspicuous white, inverted Y-shaped suture on the head capsule between the eyes, whereas the corn earworm larva may be green, yellow, pink or tan.

CORN EARWORM: Moth collections increased sharply for the first time this season. A surge from 5 to 878 moths was registered in Dodge County, and the weekly count near Green Lake increased from 4 to 846 moths. Another 1,144 migrants were collected in the pheromone traps from Coon Valley to Marshfield, for a total of 2,868 moths this week. These counts are indicative of a very large and potentially destructive flight of corn earworm migrants capable of laying eggs in late-silking sweet corn. The risk of egg laying will continue into September, so scouting and control programs should be maintained through harvest. Moth counts from August 21-27 were: Coon Valley 38, Cottage Grove 60, Green Lake 846, Mayville 878, Janesville 39, Madison 210, Marshfield 4, Mazomanie 7, Oakfield 578, Sun Prairie 176, Watertown 21, and Wausau 11.

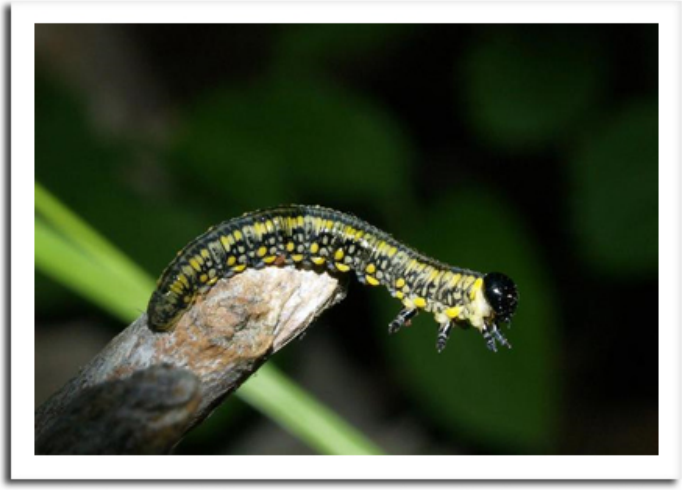
LATE BLIGHT: Home gardens in Milwaukee and Racine counties are reportedly infected with tomato late blight. This disease can develop rapidly under current weather conditions, and entire plants may decline and die in as few as 7-10 days. Gardeners are advised to monitor plants for signs of infection, including brownish-black watersoaked leaf lesions, dark stem lesions or sunken golden- to dark brown spots with distinct rings on the fruit surface. Removal and destruction of infected plants is required if lesions are noticed. Composting will not generate sufficient heat to kill the pathogen and is not recommended.

Late blight symptoms on tomato leaves *Sandy Feather Penn State*

NURSERY & FOREST

INTRODUCED PINE SAWFLY: Larvae of this pine pest were defoliating white pines in Sheboygan County, according to a DATCP nursery inspector's report. The gregarious caterpillars feed in groups on the previous years' needles, consuming all the needles on a single branch before moving to another branch to feed. Damage is usually most severe in the upper half of trees, but entire trees may be defoliated during severe infestations. Insecticidal soap or conventional insecticides are effective against the young larvae if applied early in the

season. Attempted control of the larger, full-grown larvae at this time of year is not recommended since most of the damage has already occurred.



Introduced pine sawfly larva *Bruce Watt University of Maine*

EASTERN SPRUCE GALL ADELGID: The pineapple-shaped galls, which form when needles are injured by adelgid feeding, were conspicuous on spruce trees in Sheboygan County in the past week. Eventually the galls dry, turn brown and split open, allowing the mature nymph inside to emerge, usually from mid-August to October. Dormant oil treatments made in October and November, or in April, are usually effective against this pest.

Eastern spruce galls *Konnie Jerabek DATCP*

FALL WEBWORM: Nests or webs made by fall webworm larvae are still common throughout the state and were noted this week on birch and linden trees in a Jefferson County nursery. These characteristic webs appear later in the season than those of other web or tent making larvae in Wisconsin (e.g. eastern tent caterpillar and forest tent caterpillar). The larvae and their tents are primarily a cosmetic problem that can be easily controlled by manual removal or pruning.

GLADIOLUS WHITE BREAK: Gladiolus plants infected with virus were found this week in Sawyer County. The condition is commonly called “white break” and is caused by cucumber mosaic virus. Symptoms include whitish breaks in the coloration along the edges of flowers, and white or yellowish spots on the foliage. Infected plants may also produce deformed corms. The causal virus is transmitted on cutting tools and by probing aphids. Control includes continual rogueing (pulling and destroying) of symptomatic plants, sound cultural practices, and in severe cases, control of the insect vector.

White break symptoms on gladiolus flower *Tim Allen DATCP*

ASH FLOWER GALL MITE: A heavy infestation of this tiny eriophyid mite was observed on ‘Leprechaun’ ash trees in a Washington County nursery. The mite feeds on the male flower clusters of ash trees, causing the clusters to enlarge into irregularly-shaped, unsightly masses that appear as dried brownish-black clumps by autumn. The galls may persist on trees for 1-2 years, but they do not seriously harm the tree and are considered only an aesthetic problem.

APPLE INSECT & BLACK LIGHT TRAP COUNTS AUGUST 21 - 27

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	AM RED[5]	YELLOW[6]
Bayfield	Keystone	32	1	3	2	7	9
Bayfield	Orienta	24	0	0	0	0	1
Brown	Oneida	250	14	20	5	0	0
Columbia	Rio	20	45	10	9	**0	**0
Crawford	Gays Mills	112	24	4	13	4	—
Dane	Deerfield	10	74	0	0	1	0
Dane	McFarland	104	75	3	0	0	**0
Dane	Mt. Horeb	22	119	2	0	0	0
Dane	Stoughton	13	96	7	2	0	2
Dane	West Madison	40	77	5	6	—	—
Fond du Lac	Campbellsport	100	23	0	30	*0	0
Fond du Lac	Malone	—	—	—	—	—	—
Fond du Lac	Rosendale	33	26	3	4	2	4
Grant	Sinsinawa	—	—	—	—	—	—
Green	Brodhead	0	196	8	0	0	0
Iowa	Mineral Point	160	159	14	9	—	—
Jackson	Hixton	122	0	—	—	—	—
Kenosha	Burlington	450	84	9	24	0	—
Marathon	Edgar	—	—	—	—	—	—
Marinette	Niagara	59	0	0	0	24	1
Marquette	Montello	15	58	2	10	3	0
Ozaukee	Mequon	300	33	22	9	*2	—
Pierce	Beldenville	—	—	—	—	—	—
Pierce	Spring Valley	—	—	—	—	—	—
Racine	Raymond	456	93	23	7	0	0
Racine	Rochester	130	42	14	3	*6	0
Richland	Hillpoint	—	—	—	—	—	—
Sheboygan	Plymouth	—	—	—	—	—	—
Walworth	East Troy	—	—	—	—	—	—
Walworth	Elkhorn	—	—	—	—	—	—
Waukesha	New Berlin	—	—	—	—	—	—

[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; *Counts represents a two-week period.

COUNTY	SITE	BCW[1]	CEL[2]	CE[3]	DCW[4]	ECB[5]	FORL[6]	SCW[7]	TA[8]	VCW[9]	WBC[10]
Crawford	Prairie du Chien	—	—	—	—	—	—	—	—	—	—
Dane	Mazomanie	0	0	0	108	7	1	0	5	1	0
Fond du Lac	Ripon	0	0	5	0	1	0	0	0	0	3
Manitowoc	Manitowoc	—	—	—	—	—	—	—	—	—	—
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	0	0	3	75	0	1	12	0	2	0
Rock	Janesville	0	5	0	22	1	14	0	2	0	0
Vernon	Coon Valley	0	0	2	41	2	5	20	7	0	0
Walworth	East Troy	—	—	—	—	—	—	—	—	—	—
Wood	Marshfield	0	0	3	10	0	1	14	1	2	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.