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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
2811 Agriculture Dr. Madison, WI 53718 • http://pestbulletin.wisconsin.gov

WEATHER & PESTS

Cool summer temperatures and scattered afternoon and evening showers prevailed during the final week of July. A nearly stationary area of upper level low pressure dominated Wisconsin's weather, which was characterized by partly sunny skies, scattered showers, and a few isolated late-day thunderstorms. High temperatures were mainly in the 70s to lower 80s, some 5-10 degrees below normal for late July. Lows ranged from mid-40s to low 50s in the north with mid-50s to lower 60s in most other areas. Needed rainfall across the state improved declining topsoil moisture reserves and eased stress on pollinating corn and pod-setting soybeans. Rain has been insufficient for much of Wisconsin in July. Madison has received only 1.08 inches as of July 30, which is 2.85 inches below average. Condition ratings for the state's crops remain 72-85% in the good to excellent range, despite this month's predominantly cool and dry weather pattern.

LOOKING AHEAD

WESTERN BEAN CUTWORM: Moth activity has peaked or is expected to peak soon across the southern half of the state. As of July 30, the Wisconsin network of 100 pheromone traps has reported a cumulative total of only 320 moths, the lowest preliminary state count since trapping surveys for this pest began in 2005. High counts in the past week were 112 moths in the black light trap at Sparta and 25 moths in the Pine River pheromone trap.

SOYBEAN APHID: Surveys indicate aphid pressure is still very low. Of the 125 soybean fields examined since mid-July, none had densities greater than 15 aphids per plant. Moderate to high counts of 100-300 aphids per plant can be found in localized areas within individual fields, but field-wide averages remain low. Insecticide treatment has not yet been justified for any field sampled by DATCP as of July 30. Monitoring of soybeans should be intensified in the next two weeks as more fields enter the R3-R4 growth stages during which aphid populations usually peak.

EUROPEAN CORN BORER: Moths are appearing in low numbers in the Coon Valley, Mazomanie and Ripon black light traps. The peak of summer moth activity is projected for 1,733 degree days (modified base 50°F), or by August 12 in the south-central, southwestern and central areas and August 19 in the southeastern and east-central areas. The treatment window for second generation larvae has opened in advanced southern locations with the accumulation of 1,550 degree days.

CORN EARWORM: Minimal flights of 1-19 moths were registered in Dane, Dodge, Fond du Lac, Green Lake and Rock counties again this week. Counts at most monitoring sites were extremely low at only 1-2 moths per

trap. Egg deposition on corn silks is occurring and is likely to increase as larger flights of migrants arrive in August. Regular scouting and control measures should continue in fields with green silks.

Corn earworm larva Krista Hamilton DATCP

FORAGES & GRAINS

POTATO LEAFHOPPER: This alfalfa pest has been less of a problem than anticipated throughout July. Surveys continue to yield low counts of 0.2-1.0 per sweep in 12 to 30-inch fields. The leaf yellowing occurring at sites on sandy soils may be due to boron deficiency, a disorder common on the second and third cuttings during dry periods that is often misdiagnosed as leafhopper damage. Boron deficiency causes discoloration of the entire leaflet, whereas leafhopper feeding usually results in yellowing of only part of the leaflet, in a typical V-shaped pattern. Low leafhopper counts in fields with extensive leaf yellowing suggest insufficient boron levels as the cause of the symptoms.

GRASSHOPPER: Moderate to high populations have developed in a few sandy fields in the west-central area. Average counts in Jackson, Monroe and Vernon counties varied from 0.3-2.5 nymphs per sweep, though exceptional fields contained as many as 5-6 per sweep.

PLANT BUG: Near-economic counts of 3.6-4.5 plant bugs per sweep were found in scattered fields this week. The high ratio of plant bug nymphs to adults indicates significant reproduction is occurring and signals the potential for damaging populations in alfalfa and other crops next month.

DEGREE DAYS JANUARY 1 - JULY 30

LOCATION	50°F	2013	NORM	48°F	40°F
Dubuque, IA	1649	1644	1775	1762	2606
Lone Rock	1635	1596	—	1728	2585
Beloit	1672	1747	1801	1762	2643
Sullivan	1327	1588	1698	1441	2228
Madison	1553	1591	1716	1646	2499
Juneau	1424	1491	—	1547	2337
Racine	1279	1398	—	1411	2202
Waukesha	1327	1428	—	1441	2228
Milwaukee	1276	1366	1595	1397	2179
Hartford	1327	1392	—	1441	2228
Appleton	1324	1390		1445	2219
Green Bay	1229	1309	1520	1355	2118
Big Flats	1441	1400	—	1509	2294
Hancock	1441	1410	1665	1509	2294
Port Edwards	1393	1363	1631	1479	2234
La Crosse	1625	1562	1878	1720	2553
Eau Claire	1458	1457	1686	1564	2344
Cumberland	1266	1299	1570	1365	2079
Bayfield	915	928	—	969	1587
Wausau	1217	1260	1536	1321	2027
Medford	1176	1296	1404	1284	1984
Crivitz	1167	1217	—	1274	1986
Crandon	1071	1158	1199	1151	1809

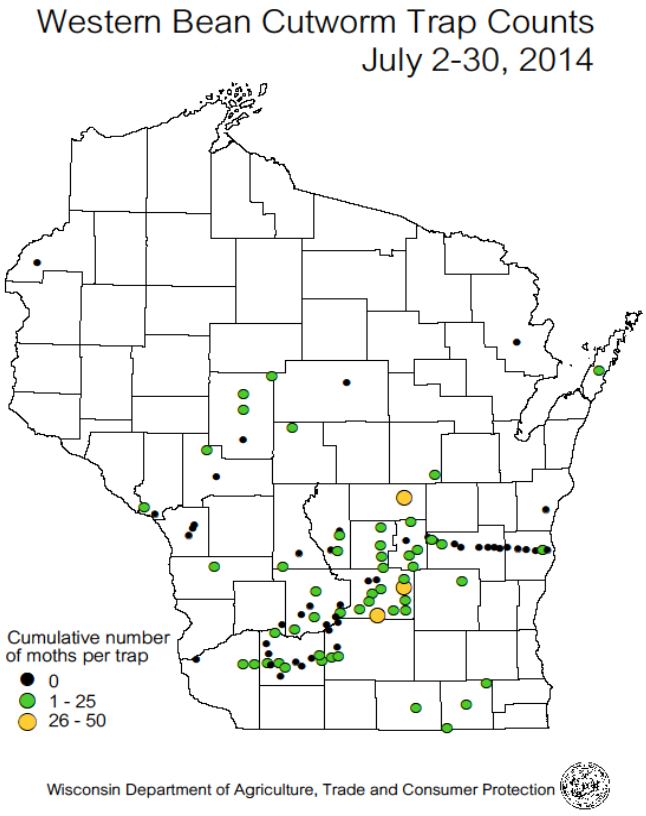
Method: ModifiedB50; SineB48; ModifiedB40 as of Jan 1, 2014. NORMALS based on 30-year average daily temps, 1981-2010.

CORN

CORN ROOTWORM: Beetles continue to emerge across the state. Surveys in the south-central and southwest areas found average counts of 0-1.5 per plant in Jackson, La Crosse and Monroe counties. Corn with fresh silks should be inspected at this time to determine if pollination is being impaired. A threshold of five or more beetles per plant has been established for fields where the silks have been clipped to less than ½ inch and pollination is incomplete. Peak beetle emergence remains approximately two weeks away.

WESTERN BEAN CUTWORM: The annual flight has produced low numbers of moths at most black light and pheromone trap locations, with the exception of 112 moths at Sparta in Monroe County. According to the degree day model for this insect, 50-75% of the adult population has emerged in the south-central, southwest

and west-central counties, 25% has emerged in the southeast and east-central counties, and emergence is just beginning in the northern areas. The DATCP network of 100 pheromone traps registered 173 moths from July 24-30, compared to 93 moths during the previous week. The state cumulative count thus far is only 320 moths. The map below summarizes the preliminary results of the western bean cutworm trapping survey as of July 30.



EUROPEAN CORN BORER: Surveys this week found no significant larval infestations. Fifth-instar larvae, pupae and new moths were the predominant developmental stages in the south-central, southwest and west-central areas. The treatment window for the second generation has opened near Beloit, Madison, La Crosse and other locations where 1,550 degree days (modified base 50°F) have accumulated, and will stay open until 2,100 degree days are surpassed.

CORN EARWORM: Moth counts remained low during the week of July 24-30, with pheromone traps in Green Lake, Janesville, Mazomanie, Oak Grove, and Ripon registering minor flights of 1-19 moths. A pheromone trap capture of 10 moths in two consecutive nights indicates the need for protective treatment of sweet corn fields with green silks. Counts this week were as follows: Coon Valley 0, Cottage Grove 1, East Troy 0, Green Lake 10, Janesville 1, Madison 0, Marshfield 0, Mazomanie 1, Oak Grove 19, Ripon 8, Sun Prairie 0, and Watertown 0.

CORN LEAF APHID: Light infestations of 10-30 aphids per plant were noted in Jackson and Monroe counties on July 29. Pressure of 50 or more aphids per plant on 50% of the plants can interfere with pollination and may require treatment.

Corn leaf aphids Tom Harvey insects.tamu.edu

SOYBEANS

PHYTOPHTHORA ROOT ROT: A survey of soybeans in 35 Wisconsin counties from June 6-July 16 found the highest incidence of root rot caused by *Phytophthora sojae* since testing began in 2008. Plants from 49% of fields sampled (26 of 53) tested positive for this disease. Counties in which *P. sojae* was identified were Barron, Clark, Dane, Green, Jefferson, Kenosha, Lafayette, Manitowoc, Marathon, Ozaukee, Rock, Sheboygan, St. Croix, Walworth and Winnebago, though no county should expect to be free from the disease after the unusually cool and wet start to the 2014 growing season.

In addition to *P. sojae*, a relatively new Phytophthora species, *P. sansomeana*, was also detected in soybean roots from Calumet, Dunn and Eau Claire counties. This pathogen was first identified on soybean in Wisconsin in 2012 in Jefferson, Marathon and Sheboygan counties, and again in 2013 in Dane, Green, Outagamie and Sheboygan counties. Research into its impact on soybean and corn is ongoing.

SOYBEAN APHID: Colonies on reproductive soybeans are still unusually low for late July. The average count in

125 fields sampled as part of the annual survey now in progress was less than five aphids per plant. The highest count documented as of July 30 was only 19 aphids per plant in the Viroqua area of Vernon County. As previously mentioned, localized hot spots of several hundred aphids per plant are not unusual within some fields, but field-wide averages are still extremely low, emphasizing the need for thorough scouting before control decisions are made. Treatment is neither economical nor advisable until the threshold of 250 aphids per plant on 80% of the plants has been exceeded. Once again, aphid counts have not surpassed this level in any soybean field surveyed by DATCP this season.

Soybean aphids on soybean stem *Krista Hamilton DATCP*

JAPANESE BEETLE: This pest continues to cause light to moderate (5-15%) defoliation of soybeans, particularly along field margins. Infestations were noted in Columbia, Dodge, Monroe, Rock and Vernon counties this week. The economic threshold for Japanese beetle and other leaf feeding soybean pests is 20% defoliation between bloom and pod fill. Spot treatment is an acceptable form of control for fields with the heaviest injury occurring in the peripheral areas.

FRUITS

APPLE MAGGOT: Captures on red spheres and yellow sticky traps increased slightly this week, with reports of flies from eight of 28 monitoring locations. One half of the adult population is expected to appear by 1,600 heat units (base 50°F), which would place 50% emergence between July 27-August 11 in the southern half of the state and 1-2 weeks later in areas north of Green Bay. The highest weekly count as of July 30 was 38 flies on a red sphere at Gays Mills in Crawford County. Maintenance of traps will be important as emergence continues and oviposition on apples increases in August.

SPOTTED TENTIFORM LEAFMINER: The third flight of moths is beginning in southern orchards where 1,479-1,523 degree days (base 50°F) were surpassed as of July 30. The economic threshold for the third and final generation increases to five mines per leaf.

CODLING MOTH: Most apple orchards are beyond the summer biofix and treatments for second generation larvae have started. Pheromone trap counts should be used at this time to assess efficacy of first generation control or a weakness in a codling moth management program. According to John Aue of Threshold IPM Services, orchards with counts that remain uniform from trap to trap during the second flight likely have a local, in-orchard population. If using organophosphates (Imidan) for control of the summer generation, growers should replace trap liners before an application to monitor the effectiveness of the material. Moth counts that do not decline to zero or near-zero following treatment suggest resistance issues have developed and use of organo-phosphate material should be discontinued.

OBLIQUEBANDED LEAFROLLER: Larvae are in the late instar stages in the southern and western counties. Beyond the first and second instars, this leafroller becomes increasingly difficult to control and much of its feeding damage has already occurred. Emergence of the summer brood of moths is anticipated by mid-August.

VEGETABLES

IMPORTED CABBAGEWORM: Moths are common around home gardens from Grant to Marathon County, indicating the potential for damaging larval populations next month. Egg deposition on cole crops is expected to intensify by early August. Scouting is advised through harvest.

SQUASH BUG: Economic counts of 3-4 egg masses per plant were observed this week on squash in a Vernon County home garden, where a few plants had been killed by a combination of this insect and the striped cucumber beetle. Continued scouting of lower leaf surfaces for eggs is strongly recommended and controls should be implemented for flowering plants when a threshold of more than one egg mass per plant is detected. If not

controlled at this time, plant damage and yield loss will result. Pyrethroid products are most effective against the small, newly-hatched nymphs while the larger adults are more difficult to control.

Squash bug eggs *Krista Hamilton DATCP*

GARDEN FLEAHOPPER: This common vegetable pest, which resembles flea beetles or black aphids, is reportedly yellowing lettuce and cucumber foliage in a Dane County garden. Counts are moderate at 2-3 per leaf, but even low numbers of adults and nymphs can cause stippling, and the deposition of black spots of fecal material on plants detracts from vegetable appearance and marketability. Extensive feeding may stunt plant growth and reduce yield. Suppression is easily accomplished with appropriate conventional or organic insecticides. Destruction of morning glory, quickweed, clover and other weedy hosts near cultivated areas will help eliminate sources of infestation.

CORN EARWORM: Counts have been very low at less than 19 per trap per week since migrants began arriving in pheromone traps three weeks ago. The primary migration has apparently not yet started.

COLORADO POTATO BEETLE: Second generation larvae are appearing in potatoes in the southern and west-central areas. Late-season control of this pest may be warranted if defoliation exceeds 30% during tuber formation. Treatments should be applied when most of the population reaches the intermediate third instar stage, presuming this does not conflict with label recommendations or resistance management. Proper timing permits most eggs to hatch, but kills the larvae before they reach the destructive fourth instar. Potato producers are reminded to avoid consecutive use of the same insecticide product or use of different products with similar modes of action.

STRIPED CUCUMBER BEETLE: Home gardeners in the southwest and west-central areas are reporting severe damage to cucurbits. Counts were high as 7-8 beetles per plant in a Vernon County garden this week. Treatment is justified for infestations of 4-5 beetles per 50 plants.

Striped cucumber beetles inside squash blossom *Krista Hamilton DATCP*

NURSERY & FOREST

SLUGS: Damage caused by these nocturnal mollusks was noted on daylily, disporopsis, hosta, ligularia and a variety of other perennials at nurseries and garden centers in Clark, Monroe, Ozaukee and Washington counties. Slugs are active at night and chew large, irregular holes in leaf tissue, stems and flowers of most any plant, often leaving behind slime trails. Many cultural control methods are available to reduce damage, including removing plant debris, boards or other materials or debris that may harbor slugs. Applying an abrasive material such as diatomaceous earth to the soil at the base of plants can also deter slugs.

GENISTA BROOM MOTH: Larvae of this typically southern species were observed feeding on baptisia (false indigo) in a Washington County nursery. The distinctive green or orange caterpillars with rows of clustered white hairs surrounded by black bands are voracious feeders that warrant control at any level of infestation. Small populations should be removed by hand, while larger infestations may require the use of Bt (*Bacillus thuringiensis*). Another option is to cut the baptisia back to a

few inches, properly disposing of the cuttings and caterpillars.

Genista broom moth caterpillar on baptisia *Marcia Wensing DATCP*

BRISTLY ROSE SLUG: The green, bristly larvae of this sawfly were feeding on the undersides of rose foliage in Barron and Polk counties this week, skeletonizing the leaves. Defoliation may be reduced by removing the larvae and infested leaves. Horticultural oils or residual insecticides are also effective.

Bristly rose slug *minershardware.com*

SPRUCE NEEDLE RUST: A small stand of declining Colorado blue spruce in eastern Oneida County was diagnosed with this rust disease late last week. The symptoms are pale, yellowish bands that surround new needles and whitish blisters filled with yellowish-orange spores that appear on current-year growth as the season progresses. Spruce needle rust has two hosts, alternating from Labrador tea to spruce in spring, and from infected spruce to Labrador tea in summer. Needles infected from the previous year will turn black or brown and eventually drop by the end of the growing season. Heavily infected trees lose vigor and aesthetic appeal and may die if other stressors are also present. Properly timed fungicide application could be used to reduce the effect of this pathogen.

Spruce needle rust on Colorado blue spruce *Tim Allen DATCP*

BLACK KNOT OF CHERRY: A light infection on cherry trees was noted at a nursery in Bayfield County. This common fungal disease is characterized by irregular, black swollen galls or 'knots' which form on branches and can range in size from ½ inch to one foot long. Shoots and branches bearing knots should be pruned in winter or early spring, before fungal spores are released. Multiple infections of black knot reduce tree vigor and cause decline. Nursery trees with knots on the trunk must be removed from sale.

Black knot on 'Schubert' Chokecherry *Marcia Wensing DATCP*

FALL WEBWORM: The characteristic nests constructed by larvae of this defoliator are apparent in Oneida County and across much of the state. Fall webworm is a native species which feeds on a wide range of deciduous forest, shade, fruit, and ornamental trees. Its nests or webs appear in trees at this time of year, later than nests made by other web- and tent-making species found in Wisconsin. The larvae inside the nests are pale yellow with blackish lateral spots. Those found in Oneida County were in the early instars and had black head capsules, but some forms also have reddish heads. Mature caterpillars develop tufts of silky hairs and are about one-inch long.

Fall webworm nest *Tim Allen DATCP*

This pest is primarily an aesthetic nuisance due to its unsightly webs, and is not known to cause tree mortality. Control consists of pruning or physical removal of the nests and larvae if aesthetic considerations are important.

GYPSY MOTH: The 2014 gypsy moth aerial spray season concluded July 25 with the treatment of 37,000 acres in Douglas and Rusk counties with mating disruptant. This year, approximately 187,500 acres were treated at 60 sites in 18 counties, mostly in the western part of the state. Aerial spraying started May 22 in southern Wisconsin and ended July 25 in the northern tier counties. Counties treated were: Barron, Bayfield, Chippewa, Crawford, Douglas, Dunn, Eau Claire, Grant, Green, Iowa, Jackson, La Crosse, Lafayette, Polk, Richland, Rusk, Sawyer and Trempealeau. Thirty-three sites totaling 19,000 acres were treated with Btk; 19 sites comprising 165,000 acres were treated with mating disruptant; and eight sites with a total of 3,850 acres were treated with Gypcheck, a gypsy moth-specific virus insecticide.

Gypsy moth trappers continue to check the approximately 13,400 pheromone traps set in Wisconsin this season. Moth flight has been slow and sporadic as of late July, with about 1,500 moths caught so far, compared to roughly 6,000 at the same time last year. Program coordinators expect counts to increase significantly in coming weeks. All traps will be removed by late September.

EUROPEAN ELM SCALE: Nursery inspectors report that crawler stage of this insect is emerging in Polk County, where a heavy infestation was observed on the trunk of a Cathedral elm. European elm scale is a soft scale that produces sticky honeydew which drips onto plants, cars, sidewalks, and can be a serious nuisance. Of larger concern is the black sooty mold that develops on the honeydew and causes blackened branches, dieback, stunting, reduced tree vigor and defoliation. The brief period of crawler activity is expected to end by early August as the immature scales settle onto woody tissue for the remainder of their life cycle. There is one generation per year in Wisconsin.

Horticultural oil, insecticidal soap, azadirachtin, carbaryl, malathion, or synthetic pyrethroids are all effective against the crawlers if applied during their mobile phase. Trees should be sprayed at least two times, once now and again in 2-3 weeks.

European elm scale *Konnie Jerabek DATCP*

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 24 - 30

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	AM RED[5]	YELLOW[6]
Bayfield	Keystone	24	3	0	4	7	4
Bayfield	Orienta	10	1	0	11	—	—
Brown	Oneida	200	21	5	0	0	0
Columbia	Rio	10	30	3	1	**0	**0
Crawford	Gays Mills	195	7	2	2	38	0
Dane	Deerfield	745	4	28	0	0	0
Dane	McFarland	121	26	0	4	0	0
Dane	Mt. Horeb	54	20	2	0	—	—
Dane	Stoughton	134	7	10	0	0	0
Dane	West Madison	85	2	3	4	0	—
Fond du Lac	Campbellsport	100	49	0	2	*0	0
Fond du Lac	Malone	30	18	1	1	**0	**0
Fond du Lac	Rosendale	131	22	1	0	0	0
Grant	Sinsinawa	37	42	36	8	0	2
Green	Brodhead	5	4	8	10	0	0
Iowa	Mineral Point	125	9	11	3	0	**3
Jackson	Hixton	23	3	1	3	0	1
Kenosha	Burlington	110	80	3	5	1	0
Marathon	Edgar	222	102	3	27	3	4
Marinette	Niagara	144	15	0	1	11	—
Marquette	Montello	243	69	0	0	0	0
Ozaukee	Mequon	—	—	—	—	—	—
Pierce	Beldenville	162	24	1	0	0	0
Pierce	Spring Valley	97	48	0	0	*1	0
Racine	Raymond	101	63	6	1	0	0
Racine	Rochester	60	24	8	1	*10	—
Richland	Hillpoint	630	5	0	0	**0	0
Sheboygan	Plymouth	342	93	2	0	**13	0
Walworth	East Troy	—	—	—	—	—	—
Walworth	Elkhorn	—	—	—	—	—	—
Waukesha	New Berlin	16	7	1	1	0	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; *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	1	2	1	0	3	2	0
Fond du Lac	Ripon	0	2	0	0	6	2	0	2	0	0
Manitowoc	Manitowoc	—	—	—	—	—	—	—	—	—	—
Marathon	Wausau	—	—	—	—	—	—	—	—	—	—
Monroe	Sparta	0	2	0	0	0	2	0	3	0	112
Rock	Janesville	2	12	0	0	0	7	0	19	0	0
Vernon	Coon Valley	0	2	0	0	4	0	0	5	0	3
Walworth	East Troy	1	0	0	0	0	4	0	1	0	2
Wood	Marshfield	5	7	0	0	0	8	0	3	0	3

[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.