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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

Autumn-like conditions arrived in Wisconsin during the first week of August. Daytime high temperatures were below normal for late summer and ranged widely from the upper 50s to mid-80s, with lows mainly in the 50s. After the historic July rainfall that set records near Afton (11.2 inches), Burlington (13.9 inches) and Madison (10.9 inches), the drier weather and clear, sunny days were a welcome change. Crop progress continued to advance on pace with or slightly ahead of the five-year average, though well behind last year. Reports indicate there is considerable variability in development resulting from spring planting delays and inconsistent summer weather. Harvesting of alfalfa, oats, potatoes, snap beans, wheat and sweet corn continued, with reports of minor infestations of European corn borer and western bean cutworm larvae in a small percentage of corn cobs.

LOOKING AHEAD

CORN ROOTWORM: Early results of the August beetle survey indicate populations are low for this time of year. Economic counts of 0.75 or more beetles per plant have been documented in only 14 of 148 fields (9%) surveyed as of August 9, and the average thus far is only 0.2 per plant. Beetles were not observed in 102 (69%) of the sampled fields. The annual survey for adult rootworms, which forecasts larval root damage potential for 2018, will continue for another two weeks.

WESTERN BEAN CUTWORM: Moth numbers have decreased to low levels, signaling the end of the adult flight. The cumulative state count as of August 9 is 1,787 moths in 70 traps. Individual counts from the 2017 trapping survey are provided in the map on page 111. Monitoring network participants may remove their traps after August 16.

EUROPEAN CORN BORER: The summer flight of moths has peaked in the southern and central areas. Egg deposition is occurring on corn, potatoes, snap beans and other susceptible hosts. The treatment window for second-generation larvae is expected to close next week across the south. Controls directed against the summer larvae should be applied during the period after egg hatch and before the caterpillars bore into corn stalks and ears, prior to the accumulation of 2,100 degree days (modified base 50°F).

CORN EARWORM: Significant flights were not registered during the past week. Counts at 15 pheromone trap locations were very low and ranged from 0-6 per trap, with a weekly total capture of only 24 moths at all locations. A total of 118 moths have been captured since migrants began arriving in early July. Although the corn earworm flights recorded over the last six weeks have been small,

fresh-market sweet corn growers should continue to monitor silking sweet corn fields and follow CEW flight reports through early September.

Corn earworm larva Krista Hamilton DATCP

SOYBEAN APHID: Densities remain very low. Although a few soybean fields have developed populations of 30-40 aphids per plant in the past two weeks, most contain fewer than 10 per plant. Final aphid treatments, if required, must be applied before the R5.5 (mid-seed) growth stage to provide any economic benefit.

STRAWBERRY ROOT WEEVIL: These black nuisance beetles are reportedly invading homes in western Wisconsin. Although they are considered an annoyance by homeowners, the weevils are not damaging to structures, do not infest food products, and cannot breed indoors.

FORAGES & GRAINS

POTATO LEAFHOPPER: Alfalfa surveyed in western Wisconsin contained 0.1-1.3 adults and nymphs per sweep. The average was 0.6 per sweep. Economic counts of two or more leafhoppers per sweep were not observed in the past week.

PEA APHID: Populations of this forage pest are still extremely low. Most fields sampled from August 3-9 had fewer than 0.3 per sweep (30 per 100 sweeps).

PLANT BUG: Nymphs continue to be common in sweep net collections, although averages remain well below the five plant bugs-per-sweep threshold. Counts this week varied from 0.5-1.8 per sweep, with an average of 0.7 per sweep. Plant bug numbers in alfalfa have not reached economic levels at any time this season, but populations reportedly have been high in some fruit and vegetable crops.

DEGREE DAYS JANUARY 1 - AUGUST 9

LOCATION	50°F	2016	NORM	40°F
Dubuque, IA	2181	2084	1991	3487
Lone Rock	1947	2036	—	3169
Beloit	1983	2144	2021	3254
Sullivan	1851	1822	1910	3074
Madison	1930	2020	1928	3158
Juneau	1831	1788	—	3032
Racine	1811	1924	—	3019
Waukesha	1803	1756	—	3013
Milwaukee	1809	1929	1819	3010
Hartford	1783	1760	—	2982
Appleton	1771	1738	—	2933
Green Bay	1720	1705	1722	2869
Big Flats	1816	1891	—	2976
Hancock	1688	1891	1871	2818
Port Edwards	1669	1866	1835	2793
La Crosse	1995	2194	2107	3232
Eau Claire	1849	1945	1899	3028
Cumberland	1430	1614	1776	2526
Bayfield	1432	1401	—	2473
Wausau	1487	1710	1738	2583
Medford	1417	1544	1590	2503
Crivitz	1559	1582	—	2643
Crandon	1301	1525	1357	2351

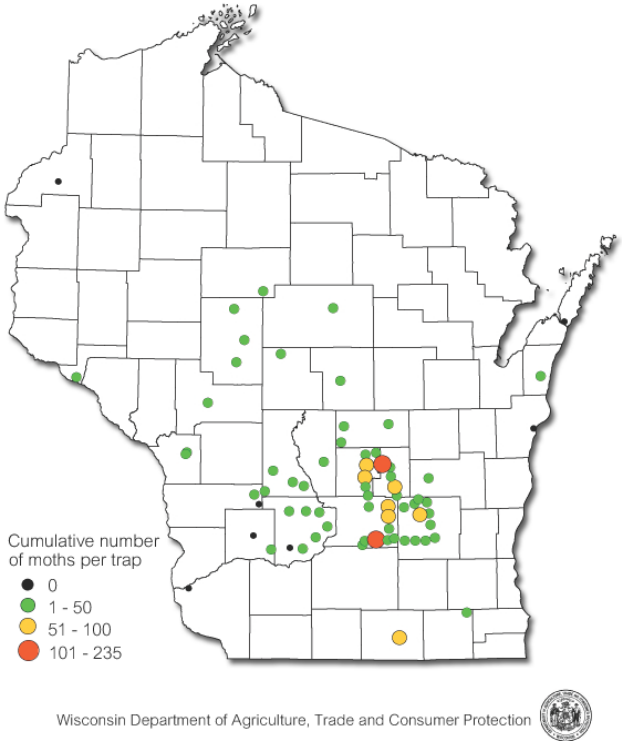
Method: Modified B50; Modified B40 as of January 1, 2017. NORMALS based on 30-year average daily temps, 1981-2010.

CORN

CORN ROOTWORM: The late-summer beetle survey is now in progress. Results from July 31-August 9 indicate populations are generally low across southern and central Wisconsin. Above-threshold averages of 0.75 or more beetles per plant were found in only 14 of 139 fields (10%), while beetles were absent from an unusually large percentage of sampled fields (68%). The current survey average is very low at 0.2 per plant. More rootworm adults are expected to appear on silks in later-planted fields as emergence continues, and scouting to determine this season's beetle pressure and to forecast the risk of larval root injury to continuous corn in 2018 should be conducted in the next two weeks.

WESTERN BEAN CUTWORM: Moth counts have declined at most monitoring locations. The trap in Columbia County that captured 101 moths last week caught 24 this week, and counts at nearly all other sites fell below five moths for the reporting period. As of August 9, the state cumulative total is 1,787 moths in 70 traps (25 per trap average), an increase from the 1,530 in 75 traps (20 per trap average) moths collected last season. The highest individual count for the nine-week monitoring period is 235 moths near Cambria. Larvae produced by the annual flight have been noted in in Adams, Columbia, Jackson, Marquette and Sauk counties. Infestations were light, with the exception of one noteworthy field in Columbia County in which an estimated 75% of the ears were infested with early-intermediate stage larvae.

Western Bean Cutworm Trap Counts 2017



EUROPEAN CORN BORER: The treatment window for second-generation larvae has closed near Beloit, La Crosse and Lancaster, but will remain open for 1-2 more weeks in parts of southern and central Wisconsin. Final inspections should be performed before degree day accumulations surpass 2,100 (modified base 50°F) and larvae begin boring into corn stalks. Due to the variability in corn borer development across the state, sweet corn growers are advised to evaluate fields carefully and base control decisions on the specific conditions observed.

JAPANESE BEETLE: This insect is still common in the cornfield margins across much of the state. Beetles per ear were noted this week from Walworth to Eau Claire County. As a reminder, a field-wide average of three or more beetles per ear is considered high and may be a concern for fields not yet pollinated.

Japanese beetles feeding on corn silks *Tracy Schilder*

CORN EARWORM: Migrants continue to arrive in Wisconsin, but in low numbers. Counts during the past week ranged from only 1-6 per trap, with the highest number of moths registered in the Ripon area. The latest activity suggests the risk of egg laying remains low as of mid-August, though this could change before the end of the month. Regular scouting programs should be maintained for late-planted sweet corn fields.

SOYBEANS

SOYBEAN APHID: Surveys continue to indicate that populations remain far below the established 250 aphid-per-plant treatment threshold in Wisconsin soybean fields. Densities have increased slightly since late July, but not to the point where control is required. The average count in 63 fields surveyed from since August 1 was only three aphids per plant. Only two fields, both in La Crosse County, had averages above 20 aphids per plant, and 13 fields had no detectable population.

SOYBEAN DEFOLIATORS: Defoliation by grasshoppers, green cloverworms, Japanese beetles, leafrollers, stink bugs and thistle caterpillars was prevalent in sampled fields, particularly around the perimeters. A combined defoliation rate exceeding 20% for soybeans in the seed-filling stages may justify treatment if the insects are

actively feeding and damage is expected to increase. Defoliation estimates should be based on all parts of the soybean canopy (not just the injured portion) to avoid overestimating leaf injury and thus making unnecessary insecticide applications.

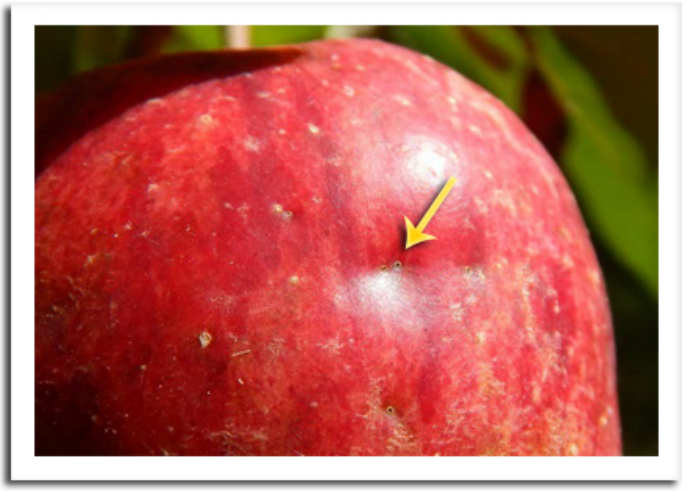
GREEN CLOVERWORM: Larvae ranging from mid- to late-instar were found at low levels in the southern and western counties. Defoliation levels in surveyed fields were minor at less than 5-10%. This sporadic soybean pest is highly susceptible to parasitism and disease, and is normally controlled biologically without insecticide use.

Green cloverworm defoliation *Krista Hamilton DATCP*

FRUITS

CODLING MOTH: Moth flights generally declined this week, but numbers remain high in some southern orchards. Elevated counts of 10-19 moths were reported from Iowa, Grant and Racine counties. Additional spot treatments may be necessary in orchard blocks where this pest remains abundant (> five moths per trap per week). Above-threshold weekly counts were registered in seven of 24 reporting orchards during the week ending August 9. Control of second-generation CM is important since the larvae can continue to emerge and damage fruits even after the apples are in storage.

APPLE MAGGOT: Most monitoring locations captured fewer AM flies than in the previous week. The high count was noted at Plymouth in Sheboygan County where 12 flies were trapped on a baited red sphere. Apple maggot sprays should be maintained through the first week of September in orchards where flies are still being trapped at the rate of one fly per trap per week on unbaited traps or five flies per trap per week on baited traps.



Apple maggot oviposition scar *Thaddeus McCamant Central Lakes College*

OBLIQUEBANDED LEAFROLLER: Oviposition by the summer flight of moths is underway. In contrast to spring caterpillars that primarily feed on vegetative tissue, the late-season larvae infest and damage ripening fruit. Management of the summer generation this month may be advisable to reduce the overwintering population and subsequent spring brood. Orchard IPM Specialist John Aue recommends a 3-5% fruit injury rate as the treatment threshold and suggests a trapping density of two traps per 20 acres to determine where to direct treatments.

Obliquebanded leafroller moth *Christine Hanrahan www.pbase.com*

SPOTTED WING DROSOPHILA: Counts of SWD flies increased at the majority of DATCP's 18 monitoring locations. Seven raspberry sites captured 200 or more flies during the week and counts exceeded 400 flies per trap in two La Crosse County traps. Reports of fruit in-

festation have come in, especially from fruit plantings not being treated with insecticide. At this point in time, if fruit is ripe, it should be protected with an insecticide program. Growers are reminded to always review preharvest intervals before making an application.

SAN JOSE SCALE: Second-generation crawlers are active and continued monitoring is suggested. Damage by this pest can increase exponentially from one generation to the next, and problems may persist through mid-September. As harvest begins, it is recommended that growers examine fruits for the "black cap stage" adults and maintain tape on infested limbs. A count of 10-15 scale crawlers over a few days or 10 crawlers on one tape with zero on all other tapes, may warrant application.

San Jose scale fruit damage intermountainfruit.org

VEGETABLES

SQUASH BUG: Growers of melons, pumpkins and squash should continue to inspect plants for squash bug adults, nymphs and eggs as fruits ripen. Most crops have matured beyond the critical period of control (seedling and flowering stages), but squash bug feeding is expected to persist throughout fall, causing aesthetic damage and, in extreme cases, killing plants. Late-season control consists of disposing of cucurbit foliage and plant debris around the garden to eliminate overwintering sites and help reduce next year's squash bug population.

LATE BLIGHT: Regular monitoring of plants for signs of infection and regular treatment of fields on a five- to seven-day schedule is advised in order to prevent this disease from developing in tomato and potato crops as harvest accelerates. A second case of late blight was confirmed by the UW this week, in a commercial tomato planting in Pierce County. This case follows the season's first report on tomato in Waukesha County on July 26. All potato growing areas in the state have exceeded the threshold for late blight management and fungicidal protection of susceptible tomato and potato crops is recommended at this time.

Late blight on tomato ag.umass.edu

ONION MAGGOT: Late-summer flies are emerging across southern Wisconsin. Emergence is expected to begin next week in the central areas, following the accumulation of 3,230 degree days (base 40°F). Larvae from this third and final generation will overwinter in cull onions or bulbs left behind in fields. Proper sanitation and rotating to a non-crop host are recommended for growers who experienced onion maggot problems earlier this season.

Onion infested with onion maggot larvae en.wikipedia.org

NURSERY & FOREST

CHERRY TREE GUMMOSIS: Exuded sticky, amber-colored gum or sap, referred to as gummosis, was noted on container-grown 'Pink Snow Showers' weeping cherry trees in a Wisconsin growing field. Gummosis is a tree's defense response to insect, bacterial, or abiotic stress and is often associated with cankers caused by mechanical injuries (such as contact with mowers or pruning), insects, winter damage, sunscald, herbicide injury, and various other fungal or bacterial infections. This disorder is most common on stone fruit trees such as cherries, nectarines, plums and peaches. Severe damage or infection may cause systemic wilting and eventual death of fruit-bearing wood. Prevention is best accomplished using an integrated management approach: avoiding mechanical injuries, pruning under dry conditions, providing a good growing site with well-drained soils and balanced fertilization. Practicing good sanitation by proper pruning and destroying cankered limbs is key.

Gummosis on weeping cherry *Tim Boyle DATCP*

HOSTA VIRUS: Viruses affecting hosta, such as those from hosta virus X, continue to be reported throughout the state. Some plants are now showing symptoms which may have been masked by their variegation. Careful observation of plants before purchase and during their growing stages is recommended, and use of only certified virus-free stock is highly encouraged.

DOGWOOD SAWFLY: Larvae were observed on the foliage of redosier dogwoods in La Crosse County. At this time of year, defoliation has usually progressed to the point that most leaf tissue has been fully consumed and only the midvein remains. Chemical control is effective against early-instar larvae (less than ¾ inch), but that treatment window has closed for this season. Varieties most susceptible to sawfly infestation are the gray and redosier dogwoods.

Dogwood sawfly larvae on redosier dogwood *Konnie Jerabek DATCP*

OAK WILT: Symptoms of oak wilt have become evident where the disease occurs in northern Wisconsin, making late summer an opportune time to assess oak stands for damage. This lethal oak disease is spread by pruning or wounding oaks during the spring and summer months, which allows the sap-feeding beetle vectors to introduce the fungus to healthy trees. Once introduced into an oak stand, the fungus can spread underground through grafted roots. Symptoms are more pronounced in red oaks as the leaves turn brown and wilt in a short period of time, while white oaks have additional defenses against the fungus and the effects are less conspicuous. It is strongly recommended that residents and foresters do not prune oak trees until late fall or winter in areas where the disease is established. Oak wilt has been confirmed in 61 of Wisconsin's 72 counties.

JAPANESE BEETLE: Nursery operators and homeowners continue to report severe damage to linden trees, roses, and numerous other ornamental plants. Adequate soil moisture levels favored grub survival from last season and may be one of the factors contributing to the outbreaks this season. Peak emergence has occurred in most areas and populations should decline by the end of the month.

APPLE INSECT & BLACK LIGHT TRAP COUNTS AUGUST 3 - 9

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	OFM[5]	LPTB[6]	DWB[7]	AM RED[8]	YELLOW[9]
Bayfield	Keystone	67	12	0	1	0	1	4	0	**0
Bayfield	Orienta	123	0	0	4	0	9	0	**0	**0
Brown	Oneida	400	46	8	4	1	1	3	0	**0
Columbia	Rio	33	6	4	0	0	4	1	0	**0
Crawford	Gays Mills	—	—	—	—	—	—	—	—	—
Dane	DeForest	53	55	4	9	3	—	—	0	**0
Dane	Mt. Horeb	—	—	4	4	—	—	—	0	**0
Dane	Stoughton	90	37	5	1	6	1	0	0	**0
Fond du Lac	Campbellsport	70	61	0	5	0	0	3	*0	**0
Fond du Lac	Malone	120	17	4	20	0	0	1	**4	**0
Fond du Lac	Rosendale	108	63	6	12	9	0	2	*5	**11
Grant	Sinsinawa	141	38	24	6	—	—	—	—	**3
Green	Brodhead	97	17	1	1	—	0	—	*0	**0
Iowa	Mineral Point	1662	37	10	5	0	0	0	*2	**3
Jackson	Hixton	18	21	2	0	0	1	3	*0	**1
Kenosha	Burlington	1300	8	6	7	2	4	—	0	**0
Marathon	Edgar	—	—	—	—	—	—	—	—	—
Marinette	Niagara	123	0	0	0	0	5	0	1	**1
Marquette	Montello	405	19	2	5	0	4	5	0	**0
Ozaukee	Mequon	58	9	4	1	0	0	4	*2	**0
Pierce	Beldenville	—	—	—	—	—	—	—	—	—
Pierce	Spring Valley	675	46	0	—	0	2	0	*1	**0
Racine	Raymond	573	5	9	3	1	1	5	0	0
Racine	Rochester	476	8	19	3	1	0	0	*5	**0
Richland	Hill Point	360	8	0	8	0	4	2	**0	**0
Sheboygan	Plymouth	351	26	2	6	1	13	4	**12	**0
Walworth	East Troy	2	1	0	1	6	8	1	1	**0
Walworth	Elkhorn	60	4	0	12	3	4	16	1	**1
Waukesha	New Berlin	310	1	10	7	3	2	5	0	0

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller; [5]Oriental fruit moth; [6]Lesser peachtree borer; [7]Dogwood borer; [8]Apple maggot red ball; *Unbaited; **Baited; [9]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]
Columbia	Arlington	0	0	0	0	0	0	0	0	1	1
Columbia	Pardeeville	0	0	1	1	1	2	0	0	1	1
Dodge	Beaver Dam	0	0	0	0	6	0	0	0	0	0
Fond du Lac	Ripon	0	0	0	8	3	3	0	2	0	2
Grant	Prairie du Chien	1	0	0	0	0	3	0	0	0	0
Manitowoc	Manitowoc	0	0	0	0	0	0	21	0	0	0
Marathon	Wausau	0	0	1	42	7	14	1	6	0	9
Monroe	Sparta	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	1	2	0	0	1	5	0	11	0	0
Walworth	East Troy	—	—	—	—	—	—	—	—	—	—
Wood	Marshfield	0	0	0	5	0	0	0	1	1	2

[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.