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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

Hot and humid weather persisted as a broad area of high pressure remained stationary across Wisconsin and the Great Lakes Region. High temperatures ranged from the 80s to lower 90s and heat index values soared to 95-103°F, prompting a heat advisory to be issued for the southern counties for much of the week. Conditions were predominantly dry, except in the Oconomowoc area of Waukesha County where passing thunderstorms on the afternoon of July 15 produced brief but heavy downpours of 2-4 inches and flash flooding. A few showers occurred elsewhere in the state, but rainfall amounts were insignificant. The continued hot and mostly dry weather was beneficial for corn and soybeans entering the early reproductive growth stages, although most crops are now in need of additional moisture. Conditions were also favorable for many insects, the most noteworthy being the Japanese beetle, potato leafhopper and grasshopper.

LOOKING AHEAD

EUROPEAN CORN BORER: Pupation of first generation corn borers has started in advanced southern Wisconsin locations. Black light traps could register the earliest moths of the summer flight by July 20. Surveys indicate that larvae from the spring flight are presently in the second to fifth instars. The treatment window for first generation larvae has closed in all but the far northern counties with the accumulation of 1,100 degree days (modified base 50°F).

WESTERN BEAN CUTWORM: The annual flight of western bean cutworm adults is accelerating gradually across the southern and central areas. Pheromone traps registered moths at 12 of 103 monitoring sites in the past week, with a high count of four moths near Portage in Columbia County. Moth emergence is approximately 10-25% complete in the southern half of the state.

SOYBEAN APHID: The first economic infestations of the year may develop in the week ahead. Densities have increased to moderate levels of 50-142 aphids per plant (on 100% of the plants) in a few fields in Calumet, Chippewa and Fond du Lac counties, although the typical average is less than 10 per plant. Historically, the first economic populations of 250 or more aphids per plant have been detected by the third week of July. This pest requires consistent monitoring from now until the R5.5 stage of soybean growth in August.

SPOTTED WING DROSOPHILA: Two adult specimens were collected by UW researchers in Vernon County on June 24, the first flies of the season. Additional flies have since been found in Crawford County. These detections represent the earliest recorded observations of spotted wing drosophila (SWD) in the state. Refer to the FRUIT section of this bulletin for additional information.

TRUE ARMYWORM: Surveys in corn across southern Wisconsin found no active infestations in the past week. Nevertheless, second generation larvae are developing rapidly under current temperatures and armyworm injury should become evident before the end of the month.

True armyworm larva Krista Hamilton DATCP

FORAGES

POTATO LEAFHOPPER: Alfalfa surveyed in Dane, Dodge, Grant, Green, Jefferson, Lafayette, Monroe, Richland and Rock counties contained less than two per sweep. Economic counts still have not been found in any field sampled by DATCP specialists, although nymphs of various maturities are common and reproduction is likely to have intensified with this week's extreme heat.

PEA APHID: A marked population increase has occurred in the past week. Several fields surveyed had populations of 5-10 per sweep and individual fields had counts of 25 or more per sweep, including numerous nymphs. The highest populations were found in Monroe and Rock counties.

PLANT BUG: Counts of the tarnished and alfalfa plant bugs averaged only 0.6 per sweep from July 11-17, which is well below the economic threshold of five per sweep. Nymphs are relatively common in most fields and comprise about 25% of sweep net collections.

CORN

STALK BORER: Damage to corn has become more pronounced as larvae approach maturity. Examination of

DEGREE DAYS JANUARY 1 - JULY 17

LOCATION	50°F	2012	NORM	48°F	40°F
Dubuque, IA	1407	1913	1490	1427	2290
Lone Rock	1366	1886	—	1364	2235
Beloit	1500	1970	1508	1475	2403
Madison	1359	1884	1438	1379	2221
Sullivan	1363	1858	1415	1385	2223
Juneau	1273	1798	—	1350	2113
Waukesha	1217	1683	—	1284	2042
Hartford	1185	1668	—	1254	2000
Racine	1175	1643	—	1259	2000
Milwaukee	1151	1614	1307	1232	1962
Appleton	1188	1654	1357	1249	1979
Green Bay	1111	1566	1259	1180	1895
Big Flats	1201	1695	—	1215	1995
Hancock	1208	1699	1395	1243	1998
Port Edwards	1168	1638	1362	1223	1935
La Crosse	1328	1862	1575	1316	2169
Eau Claire	1237	1691	1411	1277	2014
Cumberland	1103	1453	1305	1145	1825
Bayfield	782	1184	—	796	1393
Wausau	1079	1473	1274	1141	1801
Medford	1107	1466	1161	1167	1834
Crivitz	1038	1451	—	1087	1774
Crandon	1005	1308	1000	1038	1675

Method: ModifiedB50; Sine48; ModifiedB40 as of Jan 1, 2013. NORMALS based on 30-year average daily temps, 1981-2010.

V5-V11 cornfields found infestation rates of 2-10%, with highest population noted near Sparta in Monroe County. Spot treatment is no longer effective for many southern fields since the larvae have bored into the stalks and unemerged tassels. Controls must be applied from 1,400-1,700 degree days (base 41°F), or prior to the V7 stage. Stalk borer feeding is unlikely to kill corn plants beyond V7.

WESTERN BEAN CUTWORM: Moth emergence continued at very low levels in the last week. The Wisconsin network of 103 pheromone traps registered a cumulative total of only 26 moths as of July 17, which compares to 2,574 moths at the same time last year when the flight was 50-75% complete statewide. According to the degree day model for this insect, about 10-25% of the population theoretically has emerged across southern Wisconsin.

EUROPEAN CORN BORER: Larval infestation rates remain about the same as reported in previous weeks,

with the typical population affecting fewer than 15% of the plants and occasional fields showing 20-30% whorl feeding. Larvae ranged in development from second- to fifth-instar in the areas surveyed this week. The most prevalent stage was the third instar.

CORN EARWORM: Corn producers should continue to check fields regularly for this pest. Light to moderate damage was observed on 6-18% of the plants in a few fields in Dane and Green counties from July 11-17.

Corn earworm injury to corn plant Krista Hamilton DATCP

SOYBEANS

SOYBEAN APHID: One soybean field in Calumet County and another in Fond du Lac County showed average counts of 142-198 aphids per plant, and individual plants with as many as 668 aphids. Moderate infestations such as these could exceed economic levels by late July, emphasizing the importance of a regular sampling program. Average densities at 46 other DATCP sites were well below-threshold at 1-19 per plant. Monitoring of fields should be intensified in all areas of the state as soybeans approach the early reproductive growth stages when aphid populations usually peak.

JAPANESE BEETLE: Defoliation was observed at the rate of 1-10% in soybeans in more than half of the 48 fields surveyed in the past week. The most serious infestations were found in Dane and Monroe counties. Leaf injury by the combination of Japanese beetles, grasshoppers, green cloverworms and various other defoliators should not exceed 20% between the bloom and pod-fill stages.

GREEN CLOVERWORM: Larvae are beginning to appear in soybeans in the southern and west-central areas. Counts are currently below four per 100 sweeps. Those noted in Lafayette, Monroe and Vernon counties were in the early instars as of July 17.

Green cloverworm larva Krista Hamilton DATCP

FRUITS

SPOTTED WING DROSOPHILA: Two flies, one male and one female, were captured on June 24 in a yeast and sugar baited trap set by UW-Madison researchers on a Vernon County farm. This is the earliest recorded detection of SWD in the state since the first flies were discovered in 2010, although it should be noted that monitoring has never started this early in the growing season. In previous years, SWD traps were not set until late August or early September. A July 16 report issued by the UW Fruit Crops Entomologist Christelle Geudot also confirms the capture of additional flies in Crawford County.

Spotted wing drosophila flies HJB ncsmallfruitsipm.blogspot.com

At this time, the threat of SWD to ripening fruit remains uncertain and it is not known if infestations will be as widespread or severe as in 2012. The first appearance of flies should serve as an early warning to fruit growers to escalate monitoring efforts (checking traps twice weekly), install barrier netting, or make preparations for possible insecticidal control. The use of insecticides is not advised until SWD infestation is verified by trapping or visual inspection. After the first flies or larvae are confirmed, applications of one of the insecticides registered for control of SWD may proceed at 4- to 5-day intervals from ripening 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.

APPLE MAGGOT: The emergence of flies continued for the second week, with counts of 1-5 per trap at eight of 30 monitoring sites. Peak fly emergence remains a few weeks away. Apple growers are reminded that yellow traps baited with ammonium acetate are effective for approximately one week and should then be replaced or rebaited. Red sphere traps may be used with or without fruit essence lure through harvest. The economic threshold for apple maggot is one fly per unenhanced trap per week, or five flies per enhanced trap.

Apple maggot fly *magikcanoe.com*

CODLING MOTH: Counts have decreased in most orchards as populations transition into the larval stages. Orchardists who have not observed a distinct decline in moth activity and are having difficulty determining the most effective treatment window should use an accumulation of 1,000 degree days from the first spring biofix in late May to begin timing spray applications. As a general rule, there are about 1,000 degree days between the first and second larval generations.

BROWN ROT: Orchard IPM Specialist, John Aue advises growers of cherries, peaches and plums to intensify scouting efforts for this destructive disease. Stone fruits are more susceptible to brown rot during ripening and serious outbreaks may occur during periods of humid or wet weather when sporulation and infection by the brown rot fungus is favored. A persistent fungicide spray schedule may be needed to prevent disease development.

Brown rot on plum *www.staff.ncl.ac.uk/ethan.hack*

OBLIQUEBANDED LEAFROLLER: The first flight has subsided and second brood larvae are emerging. The small second brood larvae now feeding on terminals are controlled by most materials directed against second generation codling moths if CM treatments are made in the 7-10 days after the OBLR flight has ended. Scouting for OBLR terminal feeding is required to determine if codling moth sprays have effectively reduced OBLR levels or if additional measures are required to suppress populations and prevent fruit damage in August.

SPOTTED TENTIFORM LEAFMINER: The peak of flight activity is approaching and egg laying is expected to be very heavy as long as the moths are numerous. Apple orchards with populations greater than one mine per leaf or a history of infestation are candidates for control of second generation larvae.

SOOTY BLOTCH AND FLYSPECK: As mentioned last week, leaf wetness hours are adequate for fungicide sprays to be applied for sooty blotch and flyspeck control.

The first cases of flyspeck appeared in orchards by July 4, while sooty blotch has not yet been reported or observed. Treatment for these summer diseases is most effective at 175 leaf wetness hours beyond petal fall.

VEGETABLES

SQUASH VINE BORER: Moths are still very active around pumpkins, zucchini and squash in home gardens and larger field plantings. Growers of these vine crops should continue checking susceptible plants for flat, brown eggs deposited at the base of stems as long as the moths are present. Control is necessitated as soon as the eggs are noticed to prevent the larvae from boring into the vines. The first sign of infestation is plants that wilt during the afternoon hours.

Squash vine borer adult *qwen wan flickr.com*

LATE BLIGHT: To date there have been two confirmed reports of late blight on commercial potato and one report on tomato in the state. The University of Wisconsin-Extension recommends growers continue a 5- to 7-day fungicide program to protect their crops from this disease.

BACTERIAL WILT: Reports indicate this insect-transmitted disease is developing on cucumbers in Dane, Grant and La Crosse counties. The vectors are the striped and spotted cucumber beetles mentioned in previous bulletin issues. Control consists of eliminating the beetles (usually with an insecticide) and removing symptomatic plants to reduce inoculum sources. Treatment is justified for infestations of 4-5 beetles per 50 plants.

SQUASH BUG: These insects are feeding on cucurbit crops, causing symptoms similar to bacterial wilt. Unlike the bacterial wilt, affected plants usually recover once the squash bugs have been controlled. According to UW-Extension Vegetable Specialist, Russell Groves, insecticide options for commercial plantings include synthetic pyrethroids (e.g. Brigade, Mustang, Pounce, Warrior, etc.) or neonicotinoids (Assail, Belay, Scorpion, Endigo). Organic growers will need to rely upon directed applications of pyrethrum (Pyganic) or the pre-mix with azadirachtin (Azera). An average of one egg mass per plant when plants are flowering is recommended as the basis for initiating treatment.

Squash bug nymphs *www.gardensimply.com*

CUCURBIT DOWNY MILDEW: This disease has not been identified in Wisconsin this season, but several other states, including AL, DE, AL, FL, MI, MD, NC, NJ, OH, SC, FL, GA, TX, and VA, are reporting cases on a variety of cucurbit hosts. Commercial growers and gardeners are advised to remain attentive for disease symptoms and be prepared to take appropriate measures to protect their vegetables if weather patterns turn conducive for disease spread. Early detection and preventive fungicide applications are critical for suppressing downy mildew epidemics.

NURSERY & FOREST

TAR SPOT: The pale yellow lesions appearing on Norway maple leaves in Green Lake and Waukesha counties are early symptoms of tar spot, a cosmetic fungal leaf spot disease. Severely infected foliage will soon develop raised, black, tar-like spots and may drop prematurely. Tar spot is an aesthetic disease best controlled by clearing and destroying infected leaves in fall to prevent the spores from spreading. If treatment is warranted,

three fungicide applications are necessary for control: one at bud break, one when leaves are half expanded, and one when leaves are fully expanded.

Early symptoms of tar spot on Norway maple *Marcia Wensing DATCP*

VENTURIA SHOOT BLIGHT: Quaking aspen at nurseries in Green Lake and Jefferson counties are showing the black, blighted shoots indicative of this fungal disorder. The initial symptoms appear in May as irregular brown or black spots on the leaf surfaces, which later expand to new shoots and cause the characteristic shepherd's crook. Secondary infection cycles can occur throughout the shoot elongation period, particularly during extended periods of wet weather. The fungus overwinters in infected shoots, so pruning blighted shoots below the margin between healthy and diseased tissue is recommended.

Venturia shoot blight on aspen *Liz Meils DATCP*

SPRUCE NEEDLE RUST: Nursery inspectors noted this rust disease on Colorado blue spruce trees in Price County. The symptoms are orange, powdery spores that appear on the undersides of current-year needles. Spruce needle rust has two hosts, alternating from Labrador tea to spruce in spring, and from infected spruce to Labrador tea in summer. Infected needles turn yellow and fall off by the end of the growing season. In most instances, this rust is an aesthetic problem and no control is needed. Removal of all alternate host plants within 1,000 feet will reduce disease on spruce, but is usually impractical.

Spruce needle rust spores *Konnie Jerabek DATCP*

BRONZE BIRCH BORER: Nursery inspections in Price County detected the D-shaped exit holes associated with this wood-boring beetle on the trunks of whitespire birch trees. Adult bronze birch borers infest trees weakened or stressed due to drought, disease, sun exposure or nutrient deficiency. Larval feeding beneath the bark results in the girdling of branches and stems. Infested trees also develop swellings or bumps on the trunk around the feeding tunnels. Immediate removal and destruction of infested birch is recommended since this insect kills its host within just a few years.

APPLE INSECT & BLACK LIGHT TRAP COUNTS JULY 11 - 16

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	AM RED[5]	YELLOW[6]
Bayfield	Keystone	9	2	3	11	1	3
Bayfield	Orienta	12	0	0	15	—	—
Brown	Oneida	500	26	0	2	0	0
Chippewa	Chippewa Falls	0	10	6	13	—	—
Columbia	Rio	100	85	3	0	0	0
Crawford	Gays Mills	410	3	0	1	—	—
Dane	Deerfield	378	39	0	1	0	0
Dane	McFarland	0	0	3	0	5	0
Dane	Mt. Horeb	244	35	0	1	0	0
Dane	Stoughton	121	15	4	1	0	0
Dane	West Madison	57	17	1	3	0	0
Fond du Lac	Campbellsport	100	35	0	10	0	0
Fond du Lac	Malone	190	55	4	1	0	0
Fond du Lac	Rosendale	63	47	3	5	0	1
Grant	Sinsinawa	13	16	0	0	0	0
Green	Brodhead	26	5	0	0	0	0
Iowa	Mineral Point	400	16	7	1	0	0
Jackson	Hixton	10	0	0	3	0	0
Kenosha	Burlington	670	65	6	0	0	—
Marathon	Edgar	38	11	4	14	0	0
Marinette	Niagara	181	5	0	11	0	0
Marquette	Montello	12	0	0	0	0	0
Ozaukee	Mequon	290	27	3	2	0	0
Pierce	Beldenville	81	26	6	0	*3	0
Pierce	Spring Valley	188	50	0	0	*0	**1
Polk	Turtle Lake	—	—	—	—	—	—
Racine	Raymond	243	24	1	1	0	0
Racine	Rochester	460	8	3	0	*1	0
Richland	Hillpoint	480	15	3	14	**2	0
Sheboygan	Plymouth	303	34	4	5	**4	3
Waukesha	New Berlin	151	2	2	2	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.

COUNTY	SITE	ECB[1]	TA[2]	BCW[3]	SCW[4]	DCW[5]	CE[6]	CEL[7]	WBC[8]	FORL[9]	VCW[10]
Chippewa	Chippewa Falls	25	4	0	0	0	0	5	0	0	0
Columbia	Arlington	—	—	—	—	—	—	—	—	—	—
Crawford	Prairie du Chien	0	0	0	0	0	0	0	0	0	0
Dane	Mazomanie	2	6	1	0	0	1	0	2	1	0
Fond du Lac	Ripon	11	0	0	0	0	1	0	0	2	0
Manitowoc	Manitowoc	1	8	0	0	0	0	3	0	0	0
Marathon	Wausau	0	14	0	1	2	4	6	0	4	0
Monroe	Sparta	0	0	0	0	0	0	0	14	0	0
Portage	Plover	—	—	—	—	—	—	—	—	—	—
Rock	Janesville	0	15	0	0	0	0	13	0	13	0
Walworth	East Troy	0	0	1	0	0	0	0	1	6	3
Wood	Marshfield	1	18	6	0	0	2	34	0	7	3

[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.