Volume 56 No. 11 July 07, 2011

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

Mostly dry weather and the continuation of seasonable warmth helped maintain a rapid pace of fieldwork throughout Wisconsin. After a quiet start to the week, a cold front and upper level disturbance crossing the state on Tuesday produced several bands of thunderstorms. A few of the storms exhibited severe characteristics, including damaging winds and hail of one inch or larger in diameter. The most widespread impact was in the form of brief downpours which brought 0.5-1.2 inches of rain to the central and eastern counties. High temperatures ranging from the 80s to lower 90s were beneficial for summer crops, most notably corn, oats, soybeans and strawberries. Alfalfa harvest, nitrogen applications and treatment for weeds in soybeans advanced rapidly during the week, despite the weather-related disruption. Statewide, 18% of the second alfalfa crop was harvested by July 3, eight percentage points behind last year and five points behind the five-year average.

LOOKING AHEAD

EUROPEAN CORN BORER: The treatment window for first generation larvae has closed near Beloit, Madison, La Crosse, Sullivan and at other locations where 1,100 degree days (base 50°F) were surpassed as of July 7. Larvae are entering the midribs of corn leaves, although feeding is still mostly confined to the whorls. Insecticidal control remains an option in the southeast, central, east-central and northern counties for 1-2 more weeks. Corn and vegetable growers concerned about European corn borer damage should appraise the percent of infested plants now and not wait any length of time to apply controls if justified. The larvae will soon bore into the stalks where they are protected from chemical sprays.

WESTERN BEAN CUTWORM: The annual flight is underway in the southern and western portions of the state, where pheromone traps registered 1-3 moths in the past week. Twenty five percent emergence of the adult population is anticipated from July 11-30 as far north as Port Edwards in Wood County, or by 1,320 degree days (base 50°F). Corn fields in the pretassel stage are preferred for oviposition and should be inspected next week.

JAPANESE BEETLE: This beetle has become increasingly common in yards and home gardens in Chippewa, Dane, La Crosse and Racine counties. Numbers are low to moderate at this time, but heavy feeding on apples, grapes, corn, lindens, raspberries, soybeans, roses and many other plants is expected in the next 6-8 weeks. Trapping in residential areas may attract more beetles than normally would be present and is not recommended.

APPLE MAGGOT: The first flies appeared on traps at apple orchards in Dane and Iowa counties from June

23-29, approximately 2-3 weeks later than in the previous year. Latest reports also verify their emergence in Ozaukee and Pierce counties. Close inspection of red sphere and yellow sticky traps is advised, particularly for orchards affected by recent hail storms. The apple maggot fly is distinguished from similar fruit flies by an F-shaped wing banding pattern and a pronounced white spot on the thorax.

Rhagoletis sp. *magikcanoe.com*

CORN ROOTWORM: Beetles of the western species were noted on July 6 in Monroe County. Emergence of this species and the related northern corn rootworm will increase gradually during the next 3-4 weeks and peak by mid-August. Research entomologists anticipate reduced populations of the western species this year, citing increased planting of Bt-rootworm hybrids and use of insecticide-fungicide tank mixes applied to many corn and soybean acres as factors contributing to their recent decline in Wisconsin and the Midwest.

SOYBEAN APHID: Densities should be assessed in the week ahead as more soybean acres enter the early reproductive stages of growth (R1-R2). At temperatures of 68-86°F, colonies can double in size every two days. Economic populations of 250 or more aphids per plant have not been detected in any Wisconsin soybean field surveyed thus far.

FORAGES

ALFALFA WEEVIL: Larval populations in the southern and central areas have declined to low levels in the past two weeks, with 0.2 per sweep being the typical count. The threat from this early-season pest has passed throughout the south. Conversely, leaf tip feeding continues at very low levels in the east-central and northern areas, which are 14-26 days behind the south-central and southwest counties this season. Pupation has begun as far north as Forest and Marinette counties and feeding should subside next week.

DEGREE DAYS JANUARY 1 - JULY 6

LOCATION	50°F	2010	NORM	48°F	40°F
Dubuque, IA	1225	1427	—	1142	2088
Lone Rock	1178	1383	—	1090	2021
Beloit	1238	1498	—	1141	2104
Madison	1113	1355	1197	1055	1929
Sullivan	1114	1403	1208	1056	1925
Juneau	1047	1331	—	999	1827
Waukesha	947	1249	—	977	1703
Hartford	934	1219	—	960	1672
Racine	859	1187	—	894	1602
Milwaukee	852	1154	1024	882	1577
Appleton	914	1208	1072	911	1636
Green Bay	822	1083	1032	883	1521
Big Flats	971	1245	—	923	1714
Hancock	971	1265	1194	919	1716
Port Edwards	944	1207	1123	903	1673
La Crosse	1126	1380	1299	1956	1956
Eau Claire	1009	1255	1161	1770	1770
Cumberland	887	1139	1101	869	1602
Bayfield	632	864	802	662	1252
Wausau	861	1108	1047	846	1543
Medford	884	1110	939	858	1570
Crivitz	772	1045	—	807	1447
Crandon	767	1010	867	745	1407

Method: ModifiedB50; Sine48; ModifiedB40 as of Jan 1, 2011. NORMALS based on 30-year average daily temps, 1971-2001.

POTATO LEAFHOPPER: Counts are moderate in the west-central area of the state and low in others. This could change rapidly with the continuation of hot, dry weather conditions. Representative counts for the period of June 30-July 6 were 0.1 per sweep in the east-central district, 0.5 in the south-central district, 0.7 in the west-central district, and 0.3 in the southwest. Nymphs were observed in most surveyed fields.

PLANT BUG: Mixed populations varied from 0.1-2.2 per sweep and averaged 0.6 per sweep. This represents a minor increase from last week's observations. High counts of 1.9 and 2.2 and per sweep were found in La

Crosse and Vernon counties, respectively. Once again, the economic threshold is 5.0 per sweep.

PEA APHID: This aphid is being swept with more frequency from alfalfa. Counts range from 0.1-5.1 per sweep, with an average of 2.7 per sweep. The average last week was 1.6 per sweep and the average for the month of June was 1.4 per sweep. Based on DATCP surveys, populations have remained fairly low this season.

CORN

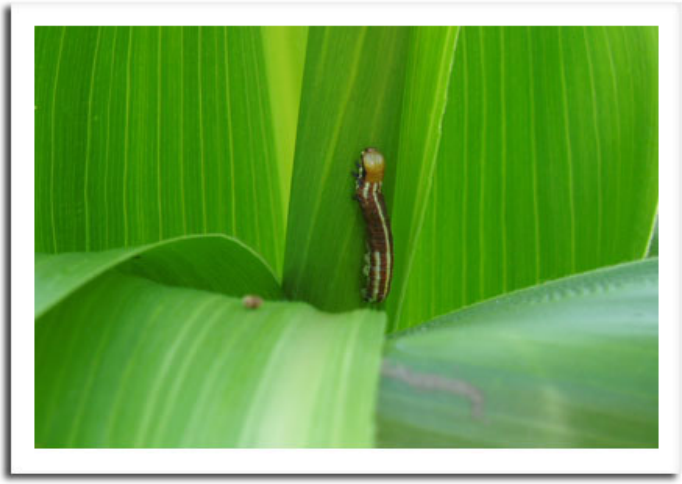
EUROPEAN CORN BORER: Larval infestations were unexpectedly common in the south-central and west-central areas, with about one-third (29%) of fields examined showing 6-30% of plants with whorl feeding injury. Second and third instar larvae were the predominant development stages in Dane, La Crosse and Vernon counties. Control treatments will become progressively less effective now that boring into corn midribs and stalks has begun. Susceptible fields in the southern half of the state should be inspected at this time. Bt corn producers are also advised to scout fields to evaluate the performance of their hybrids.

European corn borer shot-hole feeding *Krista Hamilton DATCP*

CORN EARWORM: Larval offspring resulting from the early migration last month are appearing in scattered corn fields. Sweet corn should be checked regularly for this pest, and treatments applied if 50% or more of the whorls are infested.

WESTERN BEAN CUTWORM: The annual flight of moths has begun as far north as Calumet and Waushara counties. Trap counts ranging from 1-3 moths at 15 of 154 monitoring locations probably represents 10-15% emergence of the population. Twenty five percent emergence should occur from July 11-30 at most southern and central sites and from August 2-16 in the southeast, east-central and northern areas. Network cooperators are reminded to replace pheromone lures every three weeks during the major flight.

STALK BORER: Damage to corn has become pronounced as larvae approach maturity. Surveys of V7-V11 corn fields found infestation rates of 2-47%, with the highest population noted near Bristol in Dane County. Spot treatment is no longer effective for many south-central 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.



Stalk borer larva *Clarissa Hammond DATCP*

TRUE ARMYWORM: The moderate flight of 104 moths reported from Janesville last week appears to have subsided, but continued scouting of corn and wheat is recommended.

SOYBEANS

SOYBEAN APHID: Levels of this insect remain well below the economic threshold of 250 aphids per plant and about one-third of the state's soybean fields still have no detectable population. Examination of 29 fields (V3-R1) from June 30-July 6 found aphids in 19 (66%) fields in Dane, Lafayette, Fond du Lac, Jefferson, La Crosse, Rock, Sheboygan, Vernon and Winnebago counties. At the 19 infested sites, average densities per 20 plants

examined were extremely low and ranged from 0.1-2.2 aphids per plant on 3-70% of the plants, with an average of 2.8 aphids per infested plant. The highest single plant count noted this week was only 16 aphids in Lafayette County. Reports indicate higher numbers have been found in a few south-central fields, but populations are generally still low.

JAPANESE BEETLE: Low numbers of this beetle and the rose chafer were feeding on soybean foliage in Dane, La Crosse, Rock and Sauk counties. Defoliation by a combination of these scarab beetles and other soybean pests, such as bean leaf beetles, grasshoppers and caterpillars, should not exceed 30% prior to bloom (R1) or 20% between bloom and pod fill (R1-R6).

Japanese beetle leaf feeding *Krista Hamilton DATCP*

SMALL GRAINS

CEPHALOSPORIUM STRIPE: This fungal vascular wilt of wheat has been verified from one wheat field in Rock County, representing the first confirmed report in Wisconsin. The infected sample was collected by a DATCP survey specialist on May 24 as part of the standard wheat disease survey. Preliminary confirmation was made by the Plant Industry Bureau Laboratory, with assistance from the UW Plant Disease Diagnostics Clinic. Official verification was provided by the National Mycologist at USDA PPQ National Identification Services.

Cephalosporium stripe is typified by one to four yellow stripes per leaf, often extending the length of the leaf and continuing to the leaf sheath and stem. Wheat plants infected with this disease are commonly stunted or dwarfed and produce white, poorly-filled heads with distorted kernels. The soil-borne causal fungus, *Hymenula cerealis* (syn. *Cephalosporium gramineum*) overwinters on crop residue and in soil. Disease development is favored by cool, wet spring weather.

Cephalosporium stripe on wheat *L. Ortiz-Ribbing*

The Rock County detection has no regulatory impact since Cephalosporium stripe is widespread in the U.S. and occurs in parts of Canada, but this disease may cause yield reductions in susceptible cultivars. Results were negative in 37 other fields surveyed as far north as Sheboygan County, including six nearby fields in Rock County. Further research on this disease in Wisconsin is being conducted by Dr. Paul Esker at the UW-Madison.

FRUITS

POTATO LEAFHOPPER: Alfalfa harvest in the next two weeks could force the migration of leafhoppers into some apple orchards. Populations of just 1-2 nymphs per leaf can cause leaves to curl and shrivel. The nymphs are most damaging to non-bearing trees, and this is where growers should scout for evidence of this pest. Treatment is warranted at levels of one or more nymph per leaf when symptoms are obvious.

CODLING MOTH: Larvae and fruit injury are apparent in orchards where coverage of neonictinoids was inadequate last month or growers waited longer than the prescribed 14-day interval between applications. The varieties showing the most injury are those with the densest canopies. Orchard IPM Specialist John Aue advises growers to examine fruits for larval penetration to appraise damage and the effectiveness of treatments applied in June.

WOOLLY APPLE APHID: Populations have increased since the final week of June. These insects are beginning to colonize the terminal shoots as well as pruning cuts and cankers. Orchardists should check for parasitism by removing the white fluff to determine if natural enemies are effectively controlling colonies.

Wooly apple aphid aphotofauna.com

OBLIQUEBANDED LEAFROLLER: Developing fruits should be inspected for larval hatch and feeding injury by the first generation of leafrollers. Larvae require either fruit or foliage, and have begun to feed on available fruits in south-central and southwestern orchards. Effective control of the first generation at this time will minimize injury and reduce the size of the later generation in August and September. Treatment is justifiable when 5% of terminals are infested (based upon examination of five growing points per tree in 10 widely separated trees).

SPOTTED TENTIFORM LEAFMINER: Pheromone trap counts as high as 928 moths during the last reporting period signal that the second flight should soon peak in the south-central, southwest and west-central orchards. Sampling for leaf miners is recommended 10-14 days after a peak trap count has been registered. The economic threshold for this intermediate generation of leafminers is one mine per leaf.

VEGETABLES

ONION MAGGOT: Second generation flies are emerging near Madison, La Crosse, Sullivan and other locations where 1,950 GDD (base 40°F) have been surpassed. Emergence is expected near Eau Claire, Hancock and Waukesha in the week ahead. Management of the summer generation is less critical than spring and fall populations since egg desiccation and mortality are higher at warmer temperatures and onions are not as susceptible to attack. Second brood eggs are deposited near previously damaged onions.

LATE BLIGHT: Late blight was confirmed on tomato in Waukesha County on July 6. Dry weather predicted for the next several days may temporarily delay spread of this disease, but all susceptible tomato and potato crops should be treated with effective fungicides at this time, on a 7-day schedule.

SPOTTED CUCUMBER BEETLE: Migrants were observed in Dane and La Crosse counties on July 5, indicating their arrival in Wisconsin. This species is not as damaging as the striped cucumber beetle as its feeding is usually limited to the leaves of cucurbits.

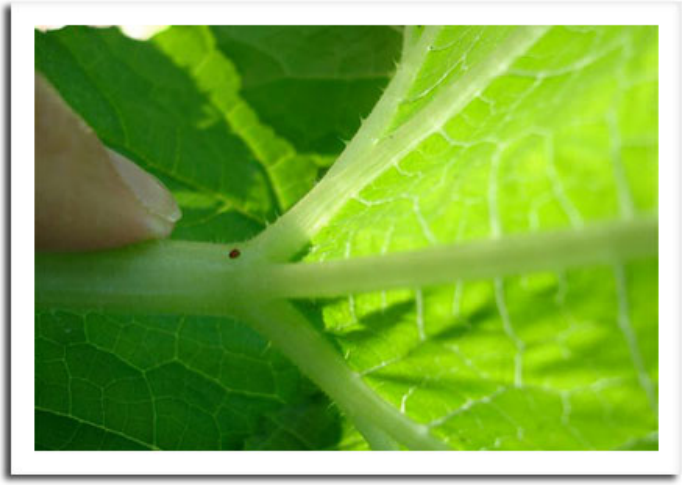
Spotted cucumber beetle imarsman flickr.com

CUCURBIT DOWNY MILDEW: Dr. Amanda Gevens of UW-Madison Department of Plant Pathology reports that cucurbit downy mildew has been detected in Ontario, Canada. According to her alert, susceptible cucurbits in southeastern Wisconsin should be preventively treated with appropriate fungicides in the immediate future.

APHIDS ON TOMATO: A light infestation of small, yellowish-green aphids was reported on 'Beefsteak' tomato plants in a Dane County home garden. The affected leaves showed moderate distortion and minor chlorosis. Under most circumstances, tomato aphids are an aesthetic problem and rarely become abundant enough to cause serious damage. Large colonies can be controlled with a forceful spray of water, an insecticidal soap, or any number of home remedies.

TOMATO HORNWORM: Moths are active and laying eggs on the undersides of tomato leaves. The rapidly growing larvae quickly defoliate plants and occasionally feed on green fruits. Spot treatment may be justified for infestations of one or more larvae per plant on a minimum of 10 plants. Prompt removal of the larvae is most effective.

SQUASH VINE BORER: The emergence of adults was noted this week in the south-central and west-central areas. Pumpkins, squash, gourds, and other vine crops should be examined for evidence of larval feeding beginning at 900-1,000 degree days (base 50°F). Insecticidal controls must be applied before larvae bore into vines.



Squash vine borer egg bonnieplants.com

WEEDS

HERBICIDE RESISTANCE: Corn and soybean growers are advised to evaluate fields for herbicide resistance now that most post-emergence applications have been made. Signs of herbicide resistance can be difficult to recognize in a field setting, but growers can isolate probable causes by process of elimination. Common reasons for ineffective weed control are late herbicide application, lack of timely activation, excess rainfall too soon after application, sprayer skips, reduced herbicide rates, and failure to control the entire weed emergence spectrum.

Indicators that weed "escapes" are the result of human error or environmental causes are the presence of multiple weed species, a spatial arrangement that follows the path of herbicide application, and a uniform lack of response to herbicides among the population.

By contrast, characteristics of herbicide resistance include moderate to high densities of a single weed species, random patterns or patchy distribution of the same species field-wide, variable response to herbicide, and vigorous plants next to dead plants of the same species.

Weed escapes in soybeans Clarissa Hammond DATCP

If herbicides were applied on time, at an effective rate, yet fields contain many escapes of one weed species, growers should consult their county agent or a crop advisor.

NURSERY & FOREST

GYPSY MOTH: Mating disruption treatments are scheduled to continue in Dunn and Jackson counties from July 6-7, and possibly through July 8. Treatment is planned for Eau Claire, Chippewa, Clark and Sawyer counties next week. Last season, all aerial spraying conducted as part of the Wisconsin Slow the Spread Program was completed by July 9.

BRONZE BIRCH BORER: Nursery inspectors observed the D-shaped exit holes associated with this wood-boring beetle on the trunks of birch trees in Manitowoc County. Adult bronze birch borers infest trees weakened or stressed due to drought, disease, sun exposure or nutrient deficiency. Larval feeding beneath the bark prevents the movement of food and water to tissues above the feeding 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 swellings or bumps on the trunk. Immediate removal and destruction

of infested birches is recommended since this insect kills its host within just a few years.

D-shaped exit holes on birch Liz Meils DATCP

DOTHISTROMA NEEDLE BLIGHT: This damaging foliar disease was noted on Austrian pines at nurseries in Milwaukee and Waukesha counties. The causal fungus infects foliage and may kill pines after successive years of severe infection. Symptoms are usually most severe in the lower crown. Pines with dothistroma have needles that progressively turn light green, tan, and brown, while the bases remain green. Copper fungicides can be used to prevent infection. A mid-May application protects needles from previous seasons and a second application 4-6 weeks later protects current-year needles.

Dothistroma needle blight on pine forestryimages.org

SPRUCE GALL MIDGE: Black Hills spruce trees in a Polk County nursery were severely damaged by the spruce gall midge, a tiny, fly-like insect. The bright orange larvae hatch in late May and move to the base of developing needles to feed. Their feeding distorts growth of the needles, which swell around the larva inside. Affected twigs become swollen, many needles drop off or fail to develop, and often the section of the shoot bearing the gall dies. Spruce gall midge is easily controlled by pruning out the galls by April 1, prior to adult emergence.

HERBICIDE DAMAGE: Recent inspections in Manitowoc County found crabapple trees, lindens and red oaks with symptoms of exposure to phenoxy herbicide, a growth-regulator in the 2,4-D family. Drift and misapplication of herbicide is a common cause of injury to non-target trees and ornamentals in Wisconsin.

Symptom expression and the severity of damage are influenced by environmental conditions and vary according to the product's mode of action, dosage, duration of exposure and tree species. Some herbicides cause minor leaf abnormalities such as cupping or twisting, while others cause discolored foliage, severe defoliation, and death. Injury at temperatures above 75°F usually results in leaf scorch. Chemical treatments should never be applied when wind speeds exceed 7-8 miles per hour.

Herbicide injury on maple Liz Meils DATCP

APPLE INSECT & BLACK LIGHT TRAP COUNTS JUNE 30 - JULY 6

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	OBLR[5]	AM RED[6]	YELLOW[7]	GDD 50°F
Bayfield	Keystone	6	2	1	3		—	—	
Bayfield	Orienta	0	0	0	0		—	—	
Brown	Oneida	900	8	5	7		—	—	
Chippewa	Chippewa Falls	0	30	10	5	2	—	—	
Columbia	Rio	55	31	1	0		0	0	
Dane	Deerfield	928	65	10	11		0	0	
Dane	Mt. Horeb	20	—	0	9		0	0	
Dane	McFarland	157	10	20	10		0	0	
Dane	Stoughton	106	129	12.5	1	0	*1	*7	1008
Dane	West Madison	69	66	14	3		*0	*2	
Fond du Lac	Campbellsport	250	62	0	0		0	0	
Fond du Lac	Malone	550	30	11	22		—	—	
Fond du Lac	Rosendale	39	3	0	3		0	0	
Grant	Sinsinawa	38	7	—	7		—	—	
Green	Brodhead	13	27	0	2	3	0	0	
Iowa	Mineral Point	386	143	4	—		*0	*1	1007
Jackson	Hixton	62	13	3	9	1	0	0	
Kenosha	Burlington	250	91	16	22		0	0	885
Marinette	Niagara	232	—	30	32		—	—	699
Marquette	Montello	172	26	6	3		0	0	
Ozaukee	Mequon	40	17	12	—		*1	0	862
Pierce	Beldenville	664	45	28	27	2	0	0	
Pierce	Spring Valley	174	41	3	2	0	0	*1	
Polk	Turtle Lake	—	—	—	—		—	—	
Racine	Raymond	350	64	18	1		0	0	
Racine	Rochester	625	60	25	33		0	0	920
Richland	Hillpoint	240	79	8	9	0	**0	**0	
Sheboygan	Plymouth	550	7	11	29		**0	**0	855
Walworth	East Troy	10	4	1	1		0	0	
Walworth	Elkhorn	15	3	0	5		0	0	
Waukesha	New Berlin	136	54	25	10		0	0	

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller EASTERN; [5]Obliquebanded leafroller WESTERN; [6]Apple maggot red ball; *Unbaited AM trap; **Baited AM trap; [7]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	4	0	4	0	4	0	2	0	0	0
Columbia	Arlington	4	43	2	1	0	0	10	0	2	0
Dane	Mazomanie	1	4	1	2	0	0	0	1	3	3
Grant	Prairie du Chien	6	8	0	0	0	0	0	0	7	0
Manitowoc	Manitowoc	0	12	0	0	0	0	0	1	0	0
Marathon	Wausau	0	2	1	95	0	11	22	0	2	0
Monroe	Sparta	8	1	0	0	0	0	0	0	0	0
Rock	Janesville	1	37	1	0	0	0	20	0	9	0
Walworth	East Troy	0	0	2	3	0	0	1	0	4	0
Wood	Marshfield	49	56	2	51	0	3	50	1	5	0

[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.