

Wisconsin Cooperative Pest Survey Bulletin
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WEATHER AND PESTS

Scattered rains brought relief to a few small areas, while the rest of the state is still waiting for much-needed precipitation. Corn was an average of 11% silked throughout the state, and leaves are curling up to limit water loss on dry, hot days. Hay harvest is going well, but most crops and nursery stock are showing moisture stress.

Growing degree days from March 1 through July 24 were:

Site	GDD*	Normal GDD	Base 48	Base 40
SOUTHWEST				
Dubuque, IA	1632	1689	1569	2639
Lone Rock	1552	1589	1478	2532
SOUTHCENTRAL				
Beloit	1611	1622	1483	2626
Madison	1526	1557	1439	2494
Sullivan	1547	1497	1413	2545
Juneau	1510	1433	1408	2470
SOUTHEAST				
Waukesha	1515	1491	1386	2490
Hartford	1483	1428	1393	2428
Racine	1477	1492	1376	2417
Milwaukee	1440	1464	1356	2364
EAST CENTRAL				
Appleton	1379	1409	1337	2282
Green Bay	1264	1255	1221	2132
CENTRAL				
Big Flats	1484	1431	1428	2408
Hancock	1468	1407	1415	2384
Port Edwards	1398	1412	1374	2284
WEST CENTRAL				
LaCrosse	1641	1568	1504	2627
Eau Claire	1505	1442	1421	2418
NORTHWEST				
Cumberland	1317	1354	1331	2152
Bayfield	975	896	1001	1693
NORTH CENTRAL				
Wausau	1277	1309	1322	2121
Medford	1204	1308	1243	2018
NORTHEAST				
Crivitz	1177	1187	1156	2009
Crandon	1133	1166	1145	1919

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 GDD (Growing Degree-Days) are synonymous with degree-days above modified base 50°F, with no low temperature below 50°F or above 86°F used in calculation. See map for Historical Average Growing Degree Days.

Historical Average Growing Degree-Days Accumulated Since March 1. (Wisconsin Agricultural Statistics Service)

LOOKING AHEAD

A brief forecast of pest-related events growers can anticipate in the upcoming week

Corn rootworm – Growers who intend to plant continuous corn should begin monitoring corn rootworm populations closely now, and continue to do so for the remainder of the season. The number of adults present this season is indicative of the density of next year’s population. Check fields at least three times, at 7-10 day intervals, through mid-September. See **CORN** section for scouting procedure and economic threshold.

European corn borer – Hatching of second generation eggs, which generally begins at 1500 DD (base 50°F), is underway in the south, and 1st instar larvae should be visible in the week ahead. Treatment for second generation borers should be applied at first hatch, when an average of 50% of the plants are infested with eggs or small larvae.

Stewart’s wilt – Earlier findings of **corn flea beetles** throughout the southern half of the state means that the potential exists for the return of Stewart’s wilt this season. Growers should scout corn for characteristic longitudinal lesions in the weeks ahead.

Apple maggot – An increase in apple maggot emergence is likely to occur following the recent rains. Treatments should target flies before females deposit eggs, and may be necessary when 5 apple maggot flies are trapped per red ball.

CORN

European corn borer – For the most part, populations are moderate in corn fields surveyed in the South Central and East Central regions of the state, with infestations in 22% to 75% of the plants (average of 43%). The heaviest infestations, 57%, 60% and 75%, were encountered in Dodge and Fond du Lac Cos. Both 5th instar larvae and pupae were commonly observed in these fields. Only a very small number of fields surveyed had low-level infestations during this week’s survey. Most infestations exceeded 42%.

According to the degree day model for European corn borer, the second flight of moths, which we anticipated at 1400 DD (base 50°F), is in progress throughout much of the state. In the south, egg hatch (occurs at 1500 DD) is also underway, and 1st instar larvae should be visible in the week ahead. Treatment for 2nd generation borers should be applied at first hatch, when an average of 50% of the plants are infested with eggs or small larvae.

It’s becoming increasingly evident, especially considering the relatively high number of larvae and pupae present in some localities, that a prolonged second flight of moths and some potentially severe problems in late-planted sweet

corn can be expected. Some damage may also occur in potatoes and late-planted snap beans.

Corn rootworm – Heavy corn rootworm beetle populations are common in the South Central and East Central districts, where counts range from 0.5 to 8.5 beetles per plant. The heaviest infestations of 6.3 and 8.5 beetles per plant were detected in Fond du Lac and western Dane Co. fields. Both the western and northern variants were common in all fields surveyed.

In most regions the threat of silk clipping associated with adult feeding is no longer an issue; however, it is still important for growers who intend to plant continuous corn to monitor populations closely for the remainder of the season. The number of adults present this season is indicative of the potential for next year's population. Beginning in the week ahead, check fields at least three times, at 7-10 day intervals, and continue through mid-September. Examine 50 plants and count the number of beetles per plant. Corn rootworm beetles often hide in the silks and axils, so examine plants closely. It's a good idea to place your hand over the silks and count the beetles on the other areas of the plant first, to prevent them from escaping while you count. Calculate the number of beetles per plant during each of the three samplings.

Treating with a soil insecticide the following year is warranted when an average of 0.75 beetles per plant is found during any of the samplings. Applying a soil insecticide in spring will protect the corn root system from larval feeding. A second option for growers is to rotate to a crop other than corn (and other than soybeans if possible). As a general rule, corn rootworm will not be a problem in fields where any crop other than corn was grown in the previous year.

FORAGES

Potato leafhopper – Counts over most of the state have been escalating, with a large percentage of fields surveyed having populations exceeding the economic threshold. Counts in 12" Dodge Co. fields ranged from 2.3 to 2.9 per sweep, from 2.7 to 4 per sweep in Fond du Lac Co. fields, and from 1.3 to 2.2 per sweep in 12" Green Lake Co. fields. One 10-12" Calumet Co. had a count of 20-25 per sweep. Again, all these counts exceed the economic threshold for stands of the corresponding heights. In contrast, counts were lower in Adams, Portage, Wood and Manitowoc Cos., ranging from 0.1 to 0.7 per sweep. Spraying for this insect is an effective preventative measure, but cutting is often just as effective and the better option for obvious reasons; however, if numbers are high enough that potato leafhoppers carry over into the third crop, spraying might be the only way to go.

SOYBEANS

Soybean aphid – An increasing number of fields with 26-99 aphids per plant were detected in R2-R3 stage soybeans in the South Central and southern portion of the East Central districts, but aphid levels still remain low overall. In two R2-R3 stage Dunn Co. fields, no aphids were detected; however, elsewhere in the same county 20%-25% infestations were observed with the average number of aphids ranging from 3.5 to 9.7 per plant. Similarly, populations were very low in Adams, Portage, Calumet and Manitowoc Cos. For now it remains unclear whether the population explosion we've seen in past years is going to occur in the weeks ahead. Continue to monitor fields closely.

Potato leafhopper – Nymphs were common on the undersides of leaves in all soybean fields surveyed, with counts averaging 2.2 nymphs per plant. Recent rainfall and the temporary break from the hot, dry conditions we've seen means most fields are not as susceptible to hopperburn as they were last week.

Bean leaf beetle – Widespread, but light (10-25% per leaflet) bean leaf beetle leaf feeding damage was observed in Dane, Dodge, Green Lake, and Fond du Lac Co. soybean fields earlier this week. Only a small number of adults were observed feeding on leaflets in these fields. Bean leaf beetle defoliation can be severe, but isn't generally of economic concern. Instead, pod feeding is the most important form of bean leaf beetle injury. Pod injury makes seeds increasingly susceptible to moisture and secondary pathogens. In some cases, beetles clip soybean pods entirely, adding to yield losses. Late-season bean leaf beetle control requires counting injured pods. Unfortunately no economic threshold is currently available for bean leaf beetle in Wisconsin. Producers who observe high numbers of beetles and /or injured pods (approx. 15 beetles per foot of row *and* at least 10 percent pod damage) should contact their County Extension Agent for control recommendations.

VEGETABLES

Potato leafhopper – Threshold levels for potato leafhopper in vegetables are listed above. For treatment recommendations refer to UW-Extension Bulletin A3422.

Picnic beetles – It appears that a major increase in numbers occurred this week. In nearly all of the corn fields surveyed this week, picnic beetles were found in association with **European corn borer** larval tunnels. The relationship between these two insects has not been clearly established, but picnic beetles do appear to negatively affect the larvae they encounter. In several tunnels where picnic beetles were observed, either a dead larva or no larva at all was found.

Northern corn rootworm - Callow adults were observed feeding on blossoms of roses, snap beans and squash in

northern Dane Co. on July 24.

Late blight of potato- The last two weeks of hot and dry conditions have helped to curtail late blight spread. With the first areawide rain in the past month, the earlier concern about late blight has subsided a bit. Late blight remains confined for the most part to the original area affected by late blight, Plainfield to Hancock. There are a few fields near Adams-Friendship and a very few fields near Grand Marsh with late blight symptoms confined to a few plants. In the original fields with late blight, there are still individual lesions on plants and some petiole lesions are beginning to appear in some fields.

Early blight of potato- This disease is developing slowly on the lower potato plant canopy. Remember that early blight lesions do not generally cross over leaf veins and lesions exhibit a target-appearing lesion with alternating dark brown and light tan lesions. The control measures used for early blight include mancozeb, chlorothalonil, azoxystrobin and metiram or mancozeb plus TPTH. Remember that azoxystrobin should always be alternated with a fungicide having a different mode of action such as mancozeb or chlorothalonil.

IPM consultants are reporting the appearance of early dying in some fields of Norkotah Russet. With the stress these plants have endured this year, the appearance of early dying is anticipated, particularly those fields receiving heavy rain in late June. Early blight becomes more difficult to control on plants affected by early dying and additional fungicide sprays may be needed in problem fields to curtail the spread of early blight. **(UW-Madison)**

Aphids on potato- No **green peach aphids** have yet been captured in 2002 in traps at any location in the *Aphid Alert* Network. However, potatoes were abundantly colonized by green peach aphid at Rosemount (25 mi south of St. Paul campus of the University of Minnesota) on June 30. Spring 2002 has now seen six major wind events (low level jets) likely to have brought green peach aphid to the Northern Great Plains. We encourage potato growers, especially seed potato producers, to closely monitor their fields and apply effective aphicides at first detection of green peach aphid colonization. Some **buckthorn aphid** and **potato aphid** have been captured at Manitoba locations. Low numbers of **bird cherry-oat aphid** have been caught at some locations in Minnesota and North Dakota. Previous observations suggest that bird cherry-oat aphid is an important **PVY** vector in the Northern Great Plains. **Turnip aphid** colonies are developing on canola and wild mustard. Turnip aphid has been implicated as PVY vector. Aphid Alert 2002 can be viewed on the web at <http://www.ipmworld.umn.edu/alert.htm>. **(University of Minnesota)**

HUMANS AND ANIMALS

Potato Leafhopper Treatment Thresholds

Life Stage	Seedling Snap Beans	Larger Snap Beans	Potatoes
Nymphs	1/10 leaves	1/10 leaves	2.5/25 leaves
Adults	0.5/sweep	1.0/sweep	0.5 – 1.0/sweep

University of Wisconsin-Extension, Potato Leafhopper – Karen Delehaut

observed at a nursery in St. Croix Co. on silver maple.

Leaf hoppers - Light to moderate amounts of damage were noticed at nurseries in Manitowoc, Polk, Racine, and Waukesha Cos. on honeylocust, red maple, apples, saliva, weeping siberian peashrub.

Mosquitoes - Numbers of biting adults (*Aedes* sp.) are noticeably lower due to the dry weather in the past few weeks in rural farming areas of northern and eastern Dane Co.

FOREST, SHADE TREE, ORNAMENTALS AND TURF

Ash plant bug - Found at nursery growers in Brown, Racine and Waukesha Cos. on ash trees in light to moderate amounts.

Bark beetles - Moderate amounts of damage in a localized area were observed at a nursery in St. Croix Co. on white pine.

Birch leaf miner - Trace amounts were found at a nursery in Brown Co. on birch.

Eastern pine shoot borer- Damage was noted in jack pine saplings in Monroe Co. Branches are turning brown and wilting. (DNR)

Elm leaf miner - Elms at a nursery in Waukesha Co. had moderate numbers of mines.

Euonymus caterpillar - European spindle tree at a nursery in Waukesha Co. had localized, heavy amounts.

Fall webworm - A nursery grower in Manitowoc Co. had light to heavy numbers of webs on regal elm, chokeberry and crabapples. These caterpillars have also been noted on forestland in west central Wisconsin. (DNR in part)

Hackberry nipple gall - Hackberry at nursery in Waukesha Co. had light numbers of galls.

Honeylocust plant bug – Light numbers were found on honeylocust at a nursery grower in Brown Co.

Imported willow leaf beetle - Laurel willow and corkscrew willow showed light amounts of damage at nurseries in Burnett and Racine Cos.

Japanese beetle – Light to severe infestations were found in Kenosha, Racine, Rock Waukesha and other Cos. on various ornamental trees and shrubs.

Leaf cutting bees – Moderate amounts of damage were

Oak leaf miner - Moderate numbers of mines were found on bur oak and swamp white oak at nurseries in Brown, Racine, and Waukesha Cos.

Slugs - Hostas at nurseries in Waukesha Co. had light to moderate amounts of feeding damage.

Spruce needle miner – Moderate amounts of feeding damage was observed at a nursery in St. Croix Co. on white spruce.

Viburnum shoot tip borer – Light numbers of dead tips were found on nannyberry at nurseries in Burnett and Polk cos.

White pine weevil- White pine terminal leaders are brown and wilting. There seems to be more damage to open grown jack pine saplings than there is to white pine saplings in west central Wisconsin. (DNR)

Anthracnose – Trace to moderate amounts were observed at nurseries in Brown, Manitowoc, Racine and Waukesha Cos. on swamp white oak, red oak, whitespire and river birch, bergenia, pulmonaria, and tulip tree.

Apple scab - Apples and crabapples had light to moderate amounts at nurseries in Brown, Burnett, Manitowoc, Polk, Racine and Waukesha Cos.

Asteroma leaf spot – This fungal leaf spot was found at a nursery grower in Brown Co. on American linden in trace amounts.

Bacterial blight – Light amounts of leaf spotting were observed at a nursery grower in Brown Co. on tree lilac and common lilacs and on viburnum and hydrangea in Manitowoc Co.

Black knot - Canada red cherry at a nursery in St. Croix Co. had moderate amounts.

Black spot - Roses at a nursery grower in Brown Co. had light amounts of this common rose disease.

Cedar-apple rust - Light to heavy amounts were seen on in Brown, Polk and St. Croix Cos. on nursery stock, including winter king hawthorn and crabapples.

Cytospora canker – Moderate numbers of Colorado spruce

at a nursery grower in St. Croix Co. had cankers from this fungal organism.

Dutch elm disease - Recent hot, dry weather has accelerated the death of many infected elms.

Entomosporium leaf spot - Mountain ash at a nursery in Brown Co. had light amounts.

Fir needle rust – This rust was detected at a nursery in Polk Co. on white fir in light to heavy amounts.

Fireblight - Moderate amounts of blighted branches were observed at a nursery in St. Croix Co. on crabapple.

Foliar nematodes- These tiny worm-like pests were found on hosta in the northeastern part of the state. These nematodes, (*Aphelenchoides* spp.) live in the leaves of plants. There are over 200 different host plants including strawberry, fern, begonia, chrysanthemum, dahlia, phlox and lilies. Foliar nematodes feed on leaf tissue (parenchyma) but not on the epidermis. Feeding areas appear water-soaked at first as cells are destroyed. The leaf tissue eventually dries up and forms large angular necrotic areas bordered by leaf veins. Certain life stages of nematodes can survive in dried foliage. Nematodes can be found in most foliar tissue (leaves, stems, buds and crowns) of host plants and in soil. Nematodes spread when leaves get wet by moving in the film of water to new leaves. To reduce spread of foliar nematodes, infected leaves should be removed. The best control is to destroy all plants with symptoms.

Frog eye leaf spot - Spring snow crabapple had light amounts of leaf spotting at a nursery in Manitowoc Co.

Guignardia leaf blotch - Horsechestnut had light to moderate amounts at nurseries in Racine and Manitowoc Cos.

Leaf blotch - Light to heavy amounts were found on peony at a nursery in Brown Co.

Powdery mildew - Light to heavy amounts were noticed in nurseries in Brown, Racine and Waukesha Cos. on dropmore honeysuckle, columbine, phlox and common lilac.

Quince rust - Light amounts were found on twigs and fruit at nurseries in Brown, Racine and Waukesha Cos. on thornless cockspur and cockspur Hawthorn.

Rhizosphaera needlecast - Moderate to heavy amounts were found at nurseries in Polk and Burnett Cos. on Colorado spruce in localized areas.

Septoria leaf spot - Light amounts were detected at nurseries in Brown, Burnett, Manitowoc, Polk and Racine Cos. on spirea, dogwood and cotoneaster.

Shot hole disease - Found at nursery growers in Brown and Manitowoc Cos. on purpleleaf plum and cherries in trace to light amounts.

Verticillium wilt – A localized, heavy amount of damage was observed on majesty maple and Tatarian maple at a nursery in Manitowoc Co.

Tar spot - Moderate to heavy amounts were found at a nursery on norway maple in Brown and Manitowoc Cos. This fungal disease was observed on silver maple in Eau Claire Co. **(DNR in part)**

STATE/ FEDERAL PROGRAMS

Gypsy moth trapping program- The final “unofficial” trap set total for this year is 25,258 traps which is 94% of the expected total of 27,000. Trappers have checked 3,775 (15%) traps and have caught 3,740 gypsy moths as of 7/24/02. Counties with the highest number of catches are: Adams 987, Columbia 325, Milwaukee 661, Rock 103, Sheboygan 811, Walworth 272, and Waushara 283. Traps that are north of State Highway 10 are being spot checked starting this week. Trap check will continue for 2-3 more weeks.

For more information on the gypsy moth program, please call our hotline at 1-800-642-MOTH or visit our website at <http://datcp.state.wi.us> and type ‘gypsy moth’ in the search box.

FRUIT

Apple maggot – A single apple maggot fly was trapped per 8 red ball traps at a Racine Co. orchard, another on a yellow sticky board at a Grant Co. orchard, and a third report of a capture of one adult on a yellow sticky board came from a Pierce Co. orchard. With the recent rains, it’s likely that more apple maggot flies will be emerging at additional sites throughout the state. Apple maggot emergence is strongly influenced by soil moisture levels. Twenty percent soil moisture is most favorable for their emergence, while lesser amounts generally result in the desiccation of pupae.

Codling moth - Dissections of 20 Cortland apples yielded two larvae on July 24, in Dane Co. One larva was in the fourth instar and the other was in the second.

BLACKLIGHT TRAPPING RESULTS									
through July 24	Euro. Corn Borer	Army- Worm	Black Cutworm	Vari. Cutworm	Spot. Cutworm	Celery Looper	Forage Looper	Corn Earworm	Corn Earworm <i>Pheromone</i>
Trap Site									
South Central									
Arlington ¹	3	4	3						
Arlington ^{2 through 7/}	16								
Madison	37	25	22						
Mazomanie	16	43	7	2	0	12	3	5	
Janesville	7	128	16	2	0	104	6	0	
East Central									
Oakfield	9	1	0	0	0			1	17
Central									
Marshfield	20	12	2	0	3	0	12	16	
Northwest									
Chippewa	110							3	1
Cameron	6								

Website of the Week:

<http://www.uwex.edu/ces/wihort/gardenfacts/X1062.pdf>

Japanese Beetle UW-Extension X-File

Japanese beetle is an exotic pest that is becoming established in Wisconsin. The adults are out in droves now and causing damage on a variety of plants throughout the state. This two-page fact sheet outlines the trees, plants and crops damaged by both adult and grub feeding, what feeding damage looks like, and some biological and chemical controls that businesses and homeowners can employ.