

Wisconsin Department of Agriculture, Trade & Consumer Protection

# Wisconsin Pest Bulletin

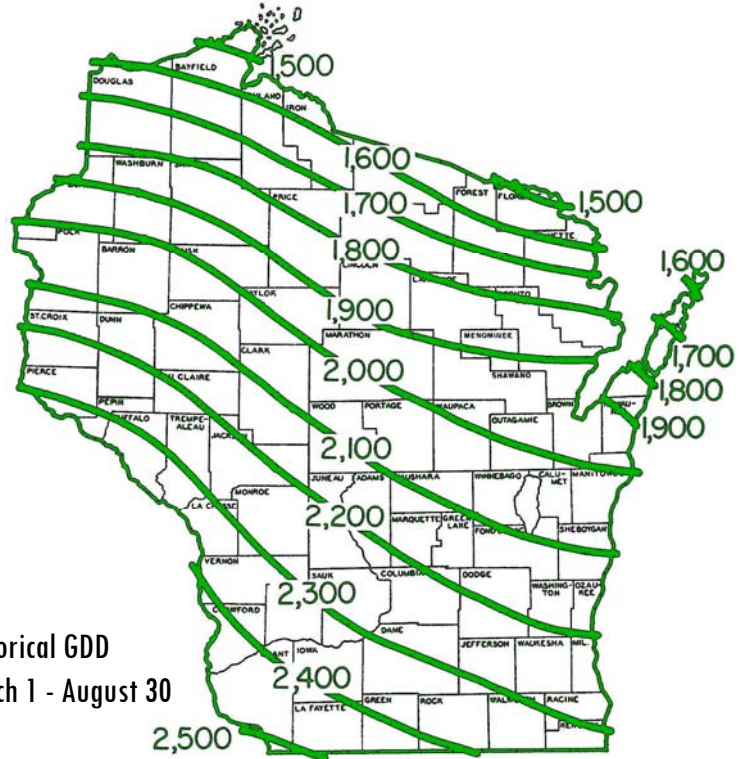
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Your weekly source for crop pest news, first alerts, and growing season conditions for Wisconsin



## Weather and Pests

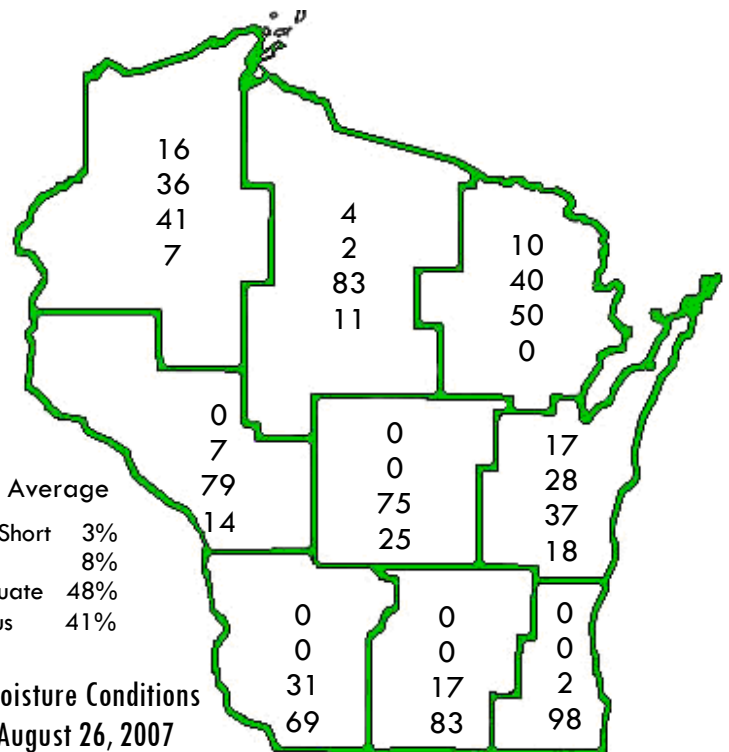
After an unusually dry summer, the last two weeks have been remarkably wet. Historic amounts of rain were reported in the La Crosse, Madison, and Janesville areas, with some locations getting nearly 17 inches this month. The 30-year average for August rainfall in Wisconsin is 4.27 inches. Since the beginning of the month, soil moisture conditions have reversed from short or very short for 75% of Wisconsin crop lands, to adequate or surplus for 89% of lands. Flooded areas in the southwest received another 3.5 inches of rain earlier in the week. In addition, high winds lodged healthy corn plants as well as plants damaged by stalk rot and corn rootworm larvae across the south; this will make corn harvesting difficult in some fields. Any alfalfa that was cut last week was lost.



## Growing Degree Days through 08/30/07 were

	GDD 50F	2006	5-Yr	48F	40F
Dubuque, IA	2568	2386	2393	2644	4045
Lone Rock	2446	2307	2301	2477	3899
Beloit	2550	2503	2389	2544	4024
Madison	2421	2258	2280	2453	3865
Sullivan	2362	2309	2260	2349	3781
Juneau	2333	2187	2222	2409	3749
Waukesha	2298	2194	2178	2377	3708
Hartford	2316	2174	2174	2398	3728
Racine	2294	2181	2136	2362	3697
Milwaukee	2280	2182	2115	2347	3685
Appleton	2251	2179	2080	2282	3640
Green Bay	2128	2055	1951	2193	3502
Big Flats	2253	2252	2178	2223	3638
Hancock	2246	2211	2147	2216	3611
Port Edwards	2233	2255	2103	2256	3610
La Crosse	2605	2258	2364	2499	4104
Eau Claire	2384	2488	2265	2394	3819
Cumberland	2158	2181	1982	2163	3517
Bayfield	1772	1774	1585	1786	2998
Wausau	2081	2002	1898	2106	3404
Medford	2012	2020	1869	2057	3328
Crivitz	2043	1959	1849	2089	3362
Crandon	1901	1799	1735	1899	3138

Historical GDD  
March 1 - August 30



State Average

Very Short 3%  
Short 8%  
Adequate 48%  
Surplus 41%

Soil Moisture Conditions  
as of August 26, 2007

## Looking Ahead

This is the last weekly bulletin for the 2007 growing season. A final summary issue will be published on Friday, November 2 once the fall pest surveys are completed. The authors of the Wisconsin Pest Bulletin would like to express their gratitude to the many cooperators who monitored black light traps, corn earworm flight activity, cabbage loopers, Swede midge traps, western bean cutworms, and apple insect pheromone traps this summer. Your contributions of time and expertise have been invaluable to this publication and its readers.

**Stalk rot** - The potential for stalk rot is greater than it has been in several years. This disease is expected to cause stalk lodging in areas subjected to drought stress earlier in the season and high moisture levels this month. Corn harvest could be delayed if plants are lodged or toppled over. Development of stalk rot has been favored by wetter than normal conditions this month, and continued rainy weather could aggravate problems in fall. Losses may be reduced by scheduling an early harvest for fields with the greatest stalk rot potential.

**Corn rootworm** - There may be some confusion as to the exact extent of rootworm damage in parts of the state due to the influence of weather. Examination of blown down corn stalks in Columbia and Dodge counties failed to reveal any evidence of rootworm feeding injury. Such lodging is likely the result of driving winds, saturated soils, or disease.



Corn toppled by winds in Columbia County Krista Hamilton DATCP

**Boxelder bug** - The optimum time to begin pest proofing structures is now. Residents with recurring boxelder problems should seal cracks around windows and doors, or consider applying an insecticide to the siding or foundation next month. Boxelder bugs do not feed or reproduce after moving indoors. Once they have settled in, it is best to collect them with a vacuum or a broom and dispose of them promptly. Spraying a 3-4% soap and water solution directly on the insects will kill adults and nymphs, but it must be generously applied. Chemical

control measures should be directed at the **outside** of houses only, generally early in fall. Expect boxelder bug activity to escalate around mid-September. Refer to UW-Extension Publication No. X1100, Boxelder Bugs, at <http://wihort.uwex.edu> for control recommendations.



Adult boxelder bug Terry Thormin, [www.royalalbertamuseum.ca](http://www.royalalbertamuseum.ca)

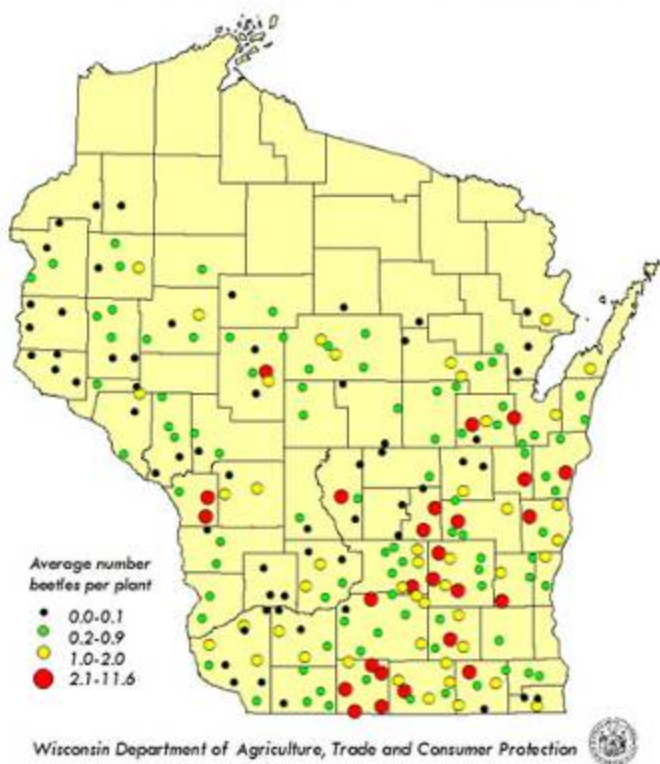
**Mosquitoes** - Numbers and biting are likely to increase greatly in the next week and persist into October. Several southern counties which were flooded recently, including Crawford, Dane, Grant, Iowa, Kenosha, Lafayette, Richland, Sauk and Vernon, have reported high numbers of mosquitoes. Conditions at this time are highly favorable for emergence of the floodwater mosquito, *Aedes vexans*.

**Ear rot** - Plants in Dane, Columbia and Dodge County dent corn fields are exhibiting a grayish or pinkish mold growth on the ear tips. It is particularly noticeable where the ear tips are exposed due to insect or blackbird feeding injury. The prevalence and severity are generally light at this time; however, wet weather next month could increase development of this disease. Many ear rot fungi are capable of producing mycotoxins that negatively affect animal health.

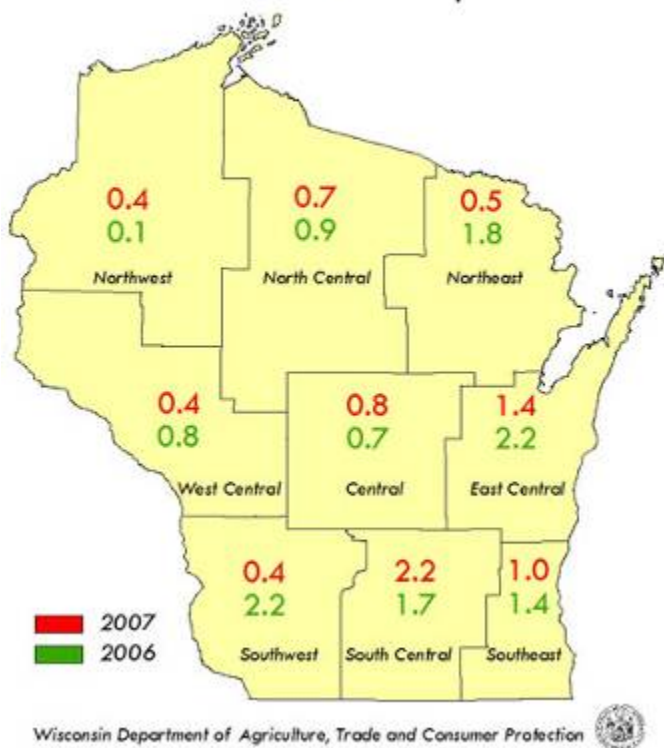
## Corn

**Corn rootworm** - Analysis of the annual corn rootworm beetle survey revealed a statewide population of 1.0 beetle per plant in 2007. This represents a decrease from 1.4 per plant in 2006 and 1.6 per plant in 2005. Averages by agricultural reporting district were as follows: northwest 0.4 per plant; north central 0.7 per plant; northeast 0.5 per plant; west central 0.4 per plant; central 0.8 per plant; east central 1.4 per plant; southwest 0.4 per plant; south central 2.2 per plant; southeast 1.0 per plant. About 32% of the grain corn fields surveyed had economic populations of 1.0 or more beetle per plant. The largest increase from 1.7 to 2.2 beetles per plant was documented in the south central district, while the largest decreases were noted in the southwest (2.2 in 2006 to 0.4 per plant in 2007), northeast (1.8 in 2006 to 0.5 per plant in 2007), and east central districts (2.2 in 2006 to 1.4 per plant in 2007).

## 2007 Corn Rootworm Beetle Survey



### Average Number of Corn Rootworm Beetles per Plant



Increased use of transgenic Bt corn rootworm hybrids may be partly responsible for the decline in rootworm damage reported this season and the lower beetle populations. The percentage of survey sites that were Bt corn rootworm

fields increased from 14% in 2006 to 27% in 2007. For the second year, Monsanto's YieldGard was the more prevalent of the two technologies. A total of 23% of the fields tested positive for the YieldGard Bt-Cry3Bb1 protein, while just 4% tested positive for the Herculex Bt-Cry34Ab1 protein. More Bt-rootworm corn was planted in the southwest and south central districts in 2007 and 2006 relative to the other districts. The accompanying maps summarize the results of the annual corn rootworm beetle survey.

### Corn Rootworm Beetle Populations 2005 to 2007

District	Ave no. CRW per plant 2007 <sup>1</sup>	Ave no. CRW per plant 2006 <sup>1</sup>	Ave no. CRW per plant 2005 <sup>1</sup>
Northwest	0.4	0.1	0.4
North central	0.7	0.9	0.8
Northeast	0.5	1.8	0.3
West central	0.4	0.8	0.8
Central	0.8	0.7	0.9
East central	1.4	2.2	1.1
Southwest	0.4	2.2	3.2
South central	2.2	1.7	1.9
Southeast	1.0	1.4	3.8
Statewide Ave.	1.0	1.4	1.6

<sup>1</sup>Average based on number of corn rootworm beetles per 10 corn plants examined

**Seed corn inspection** - To facilitate certification of seed for export from Wisconsin, corn grown for seed export is inspected during the growing season. Fields are examined for regulated pests such as Stewart's wilt, and leaf samples are collected and analyzed at the Plant Industry Laboratory. The incidence and severity of non-regulated pests such as common rust, eyespot, and northern corn leaf blight are also assessed in these fields.

Inspections in August revealed disease pressure from common rust was high in Portage County and low to moderate throughout the southwest. The incidence of common corn smut and northern leaf spot was low in all of the fields examined. Gray leaf spot was found at moderate levels in Rock County fields, but at low levels elsewhere. Storm damage in the form of lodged or toppled stalks was noted in Columbia and Eau Claire counties; it appeared to have been caused by strong winds and wet soils, rather than root systems compromised by corn rootworm injury. Stalk rots were also encountered by DATCP inspectors in scattered fields. All of the seed corn fields were extremely muddy after rains and flooding last week.

**Corn earworm** - Increased catches of moths were registered in pheromone traps and this may be a concern for some growers. The Lancaster, Manitowoc and Marshfield traps registered seasonal high captures of 1044, 362, and 858 moths, respectively. Nightly captures

ranged from 51 to 149 corn earworm moths at these locations. Chippewa Falls reported a high count above 200 moths for the week. Larval numbers in sweet corn are likely to be escalating at this time. Flights may continue to occur on favorable nights through mid-September and there is still potential for damage to susceptible corn. Fields should be checked as long as silks are present and high corn earworm moth captures are registered at a trap site nearby. Cooperators should continue to report pheromone counts through September 21.

## Corn Earworm Counts through August 30

	8/24	8/25	8/26	8/27	8/28	8/29	8/30
<b>Southwest</b>							
Lancaster							1044
Reedsburg							92*
<b>South central</b>							
Oregon							
Cottage Grove							
Sun Prairie N							
Sun Prairie NE							
<b>Southeast</b>							
Janesville	1			7			2
<b>West central</b>							
Coles Valley							0
Chippewa Falls							211
Coon Valley							
Westby							
<b>Central</b>							
Wausau							
Marshfield				312			546
<b>East Central</b>							
Manitowoc				205			157

## Forages

**Forage pests** - Populations of insects in alfalfa have declined markedly in the southern and central districts. South central Wisconsin fields that had 2 to 12 potato leafhoppers per sweep two weeks ago had fewer than 1.9 per sweep this week. The lower populations of this pest are likely due to a decrease in reproduction, since very few small nymphs were noted in any field surveyed. Recent heavy rains and flooding also probably reduced levels of some key alfalfa pests. Tarnished and alfalfa plant bugs seldom exceeded 2.5 per sweep, and pea aphids were noted in very low numbers (< 7 per sweep).

## Vegetables

**Cabbage looper** - Activity has been exceptionally light in pheromone traps stationed in southwest, south central, southeast, and west central Wisconsin, and northern

Illinois during the 2007 season. Few moths have been captured since the first traps were deployed in late May. Peak flights of cabbage looper moths have occurred as late as mid-September, so it is possible for late-season activity to still be documented.

**Swede midge** - Wisconsin is the number one producer of cabbage for processing in the U.S.; the nation's strategic sauerkraut supply is primarily produced in the state. The Swede midge causes distorted growth and yield loss of cabbage and other crucifers. It was detected in the United States in New York for the first time in 2004, and subsequently has been found in Ontario, Canada.

As part of an early detection program, 4 delta traps baited with pheromone lure specific to Swede midge were set in crucifer crop land and/or cruciferous weeds in Dane, Iowa, and Walworth counties this season. Trap liners were collected and replaced by a DATCP survey specialist and three cooperators every 1-2 weeks. Swede midge is difficult to identify due to its small size, and trap liners are currently being screened for adults. Early detection of this exotic pest, if present, will facilitate eradication or other appropriate control measures. Look for survey results in the November 2 issue of the Wisconsin Pest Bulletin.



Swede midge delta trap in cabbage

Rachel Klein-Koth

## Weeds

**Late-season weed management** - Many weed species are approaching full maturity in Wisconsin. In the coming weeks, plants will shed mature seeds and replenish the seedbanks that contribute to next season's weed problems. Simple cultural management practices at this time of year can help decrease the number of seeds incorporated into the soil and prevent certain species from spreading.

Various weed species are capable of producing several thousand seeds per plant. If each survived, weed densities would be phenomenal. Fortunately, many are lost to predation, which may occur both pre-dispersal and post-dispersal. Most often, pre-dispersal predators are smaller insects, such as flies, wasps, moth and butterfly

larvae, and beetles, while post-dispersal feeders are larger herbivores like rodents, birds, and larger insects such as scarab beetles and crickets. A study by Cavelli *et al.* (2000) found crickets were capable of eating 223 pigweed seeds in one day.



Redroot pigweed

Clarissa Hammond DATCP

Some post-harvest management techniques that help to promote seed predation include delaying fall tillage to allow seed predators to work, and maintaining managed fencerows as predator habitat. Switchgrass provides suitable habitat and overwintering protection for ground beetles and other predators.

In addition to promoting seed predator co-existence, the following techniques can also help to manage heavy weed infestations:

- Clean harvest equipment between fields
- Practice crop rotation
- Manage fencerows to prevent the spread of aggressive species



Green foxtail

Krista Hamilton DATCP

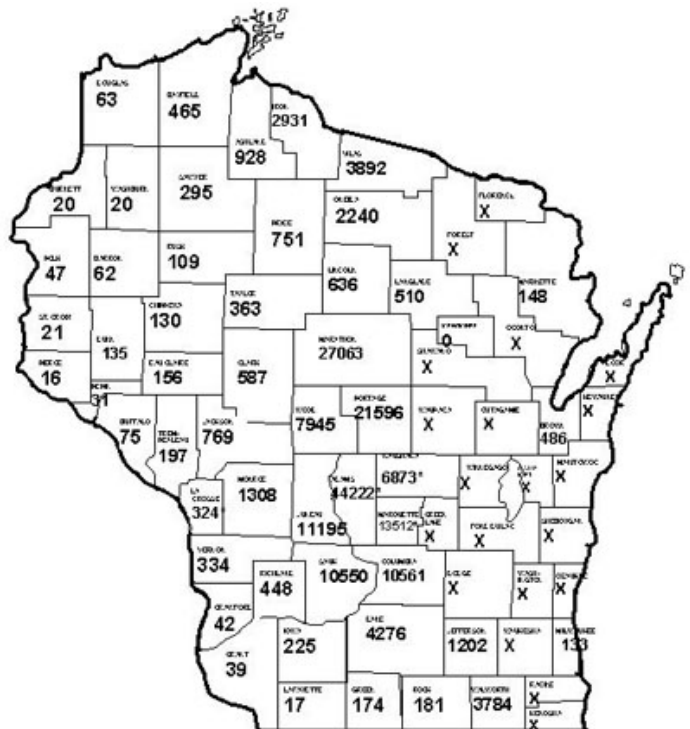
Weed seeds are readily spread between fields on harvest equipment, but cleaning can prevent new introductions. Heavily infested fields may benefit from rotating in crops

such as alfalfa or wheat to create a highly competitive plant environment and improve soil fertility. Frequent mowing of alfalfa prevents some weeds from reaching maturity, and good fencerow management discourages invasive species from entering fields.

**Reference:** Cavigelli, M. A., S. R. Deming, L.K. Probyn and D. R. Mutch (eds.) 2000. Michigan Field Crop Pest Ecology and Management. Bulletin E-2704. East Lansing, Mich.: Michigan State University Extension.

## Gypsy Moth

**Gypsy moth report** - Trapping surveys in 52 Wisconsin counties indicated that gypsy moth populations are on the rebound for the first time in three years. The total number of gypsy moths trapped was 182,087 as of August 29, an increase from the total capture of 121,355 male gypsy moths in 2006. The state record of 703,060 moths was set in 2003. High captures above 10,000 moths were documented in south central and central Wisconsin, including Adams, Columbia, Juneau, Marathon, Marquette, Portage, and Sauk counties. Adams County registered the highest count of 44,222 moths. For the first time in a decade, no counties reported a zero moth count. Somewhat unexpected were the higher numbers registered in the counties bordering the Mississippi River. Preliminary results showed numerous single moth counts spread over large geographic areas, rather than a few individual traps with high counts. This pattern of distribution will make it difficult for the Slow-the-Spread (STS) algorithm to identify areas to target for treatment in the 2008 spray season. Captures of male gypsy moths by county are summarized in the map below.



Gypsy moth trap counts as of August 29, 2007

## Black Light Trap Counts through August 30

**Black light report** - During the last reporting period, dingy cutworm moths continued to be caught in good numbers at several trapping sites (weekly counts ranged from 0 to 51 moths), higher counts of 0 to 9.4 corn earworm moths per night were noted, and a seasonal high capture of 100 spotted cutworm moths was registered at Sparta. Despite these captures, overall nocturnal moth activity continued to slow this week due to cooler evening temperatures. European corn borer numbers also declined more noticeably, with counts ranging from 0 to 19 moths.

	ECB <sup>1</sup>	TA <sup>2</sup>	BCW <sup>3</sup>	SCW <sup>4</sup>	DCW <sup>5</sup>	WBCW <sup>6</sup>
<b>Southwest</b>						
Lancaster	9	4	1	2	46	0
Reedsburg	19	-	-	-	-	-
<b>South central</b>						
Mazomanie	5	5	0	4	11	0
<b>Southeast</b>						
Janesville	5	12	2	0	38	0
East Troy	0	0	0	0	6	0
<b>West central</b>						
Sparta	0	8	0	103	0	0
Chippewa Falls	*	*	*	*	*	*
<b>Central</b>						
Wausau	1	0	0	8	27	0
Marshfield	10	1	1	10	51	0
<b>East Central</b>						
Manitowoc	*	*	*	*	*	*

<sup>1</sup>European Corn Borer; <sup>2</sup>True Armyworm; <sup>3</sup>Black Cutworm; <sup>4</sup>Spotted Cutworm; <sup>5</sup>Dingy Cutworm; <sup>6</sup>Western Bean Cutworm; <sup>7</sup>Corn Earworm.

	CabL <sup>8</sup>	Cell <sup>9</sup>	AlfL <sup>10</sup>	ForL <sup>11</sup>	FA <sup>12</sup>	VCW <sup>13</sup>
<b>Southwest</b>						
Lancaster	0	0	0	44	0	0
<b>South central</b>						
Mazomanie	0	0	0	3	0	3
<b>Southeast</b>						
Janesville	0	9	0	20	0	0
East Troy	0	3	0	3	0	0
<b>West central</b>						
Sparta	0	0	0	0	0	0
Chippewa Falls	*	*	*	*	*	*
<b>Central</b>						
Wausau	1	2	0	0	0	0
Marshfield	0	1	0	9	0	2
<b>East Central</b>						
Manitowoc	*	*	*	*	*	*

<sup>8</sup>Cabbage Looper; <sup>9</sup>Celery Looper; <sup>10</sup>Alfalfa Looper; <sup>11</sup>Forage Looper;

<sup>12</sup>Fall Armyworm; <sup>13</sup>Variegated Cutworm.

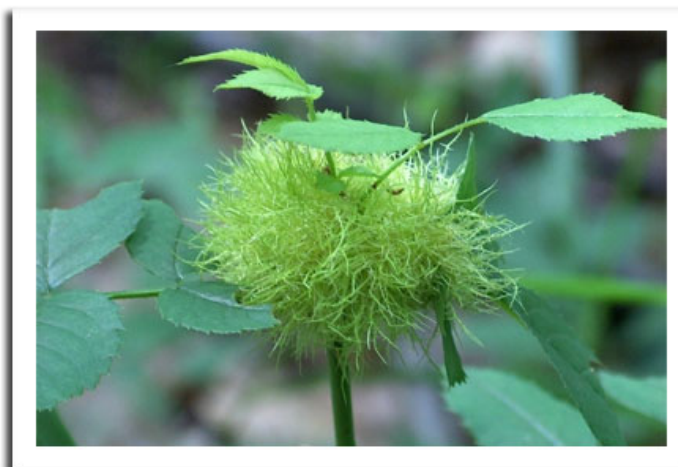
## Nursery, Forest and Landscape

**Mossyrose gall** - This characteristic gall, caused by the cynipid gall wasp *Diplolepis rosae*, was found during

inspections this week in Dane County. Mossyrose galls appear as a large spherical downy masses, approximately one inch or larger in diameter. The galls are light green and moss-like when they first develop in the spring, but turn pink and brown in the fall. Mossyrose galls are primarily found on wild rose, and seldom in nursery settings.

Mossyrose galls are formed when the tiny cynipid wasp deposits a cluster of eggs into one-year old rose twigs in the spring. The larvae begin feeding in the twig upon hatching, and their digestive enzymes stimulate the affected plant tissues to form a gall. The larvae feed throughout the summer and overwinter in the galls. Adult wasps emerge in the spring.

There are no reliable control methods available for the mossyrose gall wasp. The most effective measure is to prune out the galls before the wasps mature and emerge. The most opportune time to prune is in the fall or winter, after the leaves drop.



Mossyrose gall wasp

Haruta Ovidiu, University of Oradea



Mossyrose gall wasp

Milan Zubrick, Forest Research Institute

**Southwest region:** Aphids on sedum, leafminer and Fletcher's scale on arborvitae, septoria leafspot on spirea and variegated dogwood, Japanese beetle feeding on dogwood, and phyllosticta on euonymus in Rock County.

Fall webworm on maple, linden and crabapple, applescab on ornamental crab, asteroma leafspot on linden, spider mites on maple and oak, tar spot and sapstreak disease on silver maple, anthracnose on clump birch, plant bug feeding on ash, and oak leaf blister and leafminer on red oak in Grant County.

**Southeast region:** Chlorosis and leafhopper on Freeman maple, anthracnose on green ash, apple scab on ornamental crab, black spot on roses, septoria leafspot on yellow twig dogwood, rhizosphaera on Colorado blue spruce, aphids on clump birch, leafminer and fall webworm on English oak, white pine blister rust on white pine, pine needle scale on scotch pine, and phyllosticta on mountain ash in Washington County.



Fall webworm nest

[www.fairfaxcounty.gov](http://www.fairfaxcounty.gov)

**Northwest region:** Hosta Virus X (HVX) on 'Gold Standard' hosta, bristly roseslug sawfly on rugosa rose, cedar quince rust on thornless cockspur hawthorn, powdery mildew on columbine, HVX on 'Paul's Glory' hosta, cedar apple rust on 'Sweet 16' and 'Wealthy' apple, spruce needle drop on Serbian spruce, eastern spruce gall adelgid on black hills spruce, twig aphid and spider mites on balsam fir, ash flower gall mites on green ash, and septoria leafspot on variegated dogwood in Pierce County.

**Northeast region:** White pine tip weevil on white pine and rhizosphaera needle blight, nectria canker, and root rot on balsam fir in Taylor County.

Powdery mildew on monarda, septoria leafspot on variegated dogwood, and trunk canker on willow in Marathon County.

## Exotic Pest of the Week

**Multicolored Asian ladybeetle** - The first Multicolored Asian ladybeetles were introduced into the United States as biological control agents for yellow pecan aphids in Texas and other states. Finding the climatic and environmental conditions suitable for establishment, the ladybeetles quickly spread to Georgia in 1991, North Carolina in 1992, and Wisconsin by 1995. The very first Wisconsin specimen was collected from a window sill at the DATCP

office building in Madison on April 7, 1995. Its identification was confirmed by Steve Krauth, curator of the UW-Madison Insect Research Collection. By November 10, new county records were established for 13 counties, ranging from Bayfield in the far north, to Kenosha in the southeast. In the years to follow, the multicolored Asian ladybeetle has benefited soybeans by reducing populations of soybean aphids, but has earned notoriety for its proclivity to aggregate on windows, doors, and porches on the sunny south and west sides of homes before moving indoors for the winter.

The annual invasion of Multicolored Asian ladybeetles occurs from late September to mid-October in Wisconsin, after the first cold spell of the fall season sends this pest in search of protective overwintering sites. Ladybeetle activity is most pronounced on warm, pleasant autumn days. Measures such as caulking cracks around windows, repairing torn screens, or treating siding with an insecticide can prevent ladybeetles from gaining entry into homes. Generally the time to apply a synthetic pyrethroid to the siding or foundation is during the last week of September or the first two weeks of October. However, this narrow treatment window fluctuates from year to year and timing is critical. A cold spell, followed by a day or two of warm weather, activates the movement of ladybeetles indoors. Once the beetles are inside they do not feed or reproduce and vacuuming is the most effective method of control.



Multicolored Asian ladybeetle, *Harmonia axyridis* [news.uns.purdue.edu](http://news.uns.purdue.edu)



Multicolored Asian ladybeetles

Steve Marshall [www.uoguelph.ca](http://www.uoguelph.ca)

# Apple Insect Trap Counts from August 24 to 31, 2007

County	Site	Date	STLM <sup>1</sup>	RBLR <sup>2</sup>	CM <sup>3</sup>	OBLR <sup>4</sup>	AM red <sup>5</sup>	AM yellow <sup>6</sup>
Bayfield	Erickson	08/24-08/30	920	0	5	0	0	0
Bayfield	Gellerman	08/21-08/26	46	0	0	0	0	0
Bayfield	Lobermeier	08/24-08/30	45	6	5	0	0	0
Bayfield	Bayfield Apple	08/24-08/30	87	0	16	0	0	0
Brown	Oneida	08/24-08/30						
Dane	Deerfield	08/23-08/30	26	42	5	4	0	0
Dane	Stoughton	08/24-08/30	34	204	2	1	—	—
Dane	West Madison	08/24-08/30	0	0	0	0	0	0
Dodge	Brownsville	08/24-08/30						
Fond du Lac	Campbellsport 1	08/24-08/30	130	120	5	1	0	0
Fond du Lac	Rosendale	08/24-08/30						
Fond du Lac	Malone	08/24-08/30						
Grant	Sinsinawa	08/24-08/30						
Green	Brodhead	08/24-08/30						
Iowa	Dodgeville	08/24-08/30	95	97	82	2	13	1
Iowa	Mineral Point	08/24-08/30	—	100	3	0	*0.5	0
Jackson	Hixton	08/24-08/30						
Kenosha	Burlington	08/24-08/30						
Marquette	Montello	08/22-08/29	11	0	2	2	0	0
Marinette	Wausaukee	08/24-08/30						
Ozaukee	Mequon	08/24-08/30						
Pierce	Beldenville	08/24-08/30						
Pierce	Spring Valley	08/24-08/31	124	25	1.33	2	*0**1	0
Racine	Rochester	08/24-08/31						0
Racine	Raymond	08/24-08/30	1080	170	48	2	0	0
Richland	Hill Point	08/24-08/30						
Richland	Richland Ctr E	08/24-08/30						
Richland	Richland Ctr W	08/24-08/30						
Sauk	Baraboo	08/24-08/30						
Sheboygan	Plymouth	08/24-08/30						
Waukesha	New Berlin	08/24-08/30	230	62	21	0	0	0

<sup>1</sup> Spotted tentiform leafminer; <sup>2</sup> Redbanded leafroller; <sup>3</sup> Codling moth; <sup>4</sup> Obliquebanded leafroller; <sup>5</sup> Apple maggot red ball trap; <sup>6</sup> Apple maggot yellow sticky trap; \*unbaited red ball trap \*\*baited red ball trap.





**EXOTIC PEST OF THE WEEK**

Multicolored Asian Ladybeetle, *Harmonia axyridis*

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Trade & Consumer Protection,  
Division of Agricultural Resources Management  
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