

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

The growing season of 2013 was characterized by two distinct weather patterns. The months of April, May and June were unusually cold and wet, while July, August and September were abnormally dry. Cool soils, combined with substantial April precipitation, resulted in the slowest corn planting pace since 1984, with just 4% of the crop in the ground by May 5. Significant planting delays continued throughout May, allowing for only narrow windows of favorable conditions to plant this year's crops. By June 1, more than one-quarter of intended corn acres and one-half of intended soybean acres were still unplanted.

In stark contrast to abundant spring moisture, a drying trend began in July and intensified during August. At the start of September, topsoil moisture was very short or short for 72% of the state and crop conditions were rapidly deteriorating. Much-needed rain in October and November improved soil moisture deficits and a later-than-average mid-October killing frost afforded late-planted crops additional time to mature, contributing to better than expected corn and soybean yields this year.

PEST HIGHLIGHTS

WESTERN BEAN CUTWORM: Moth counts decreased significantly from 2012 levels, according to the statewide

trapping program. The 2013 cumulative capture of 663 moths was an 80% reduction from 3,290 eed last season. Larvae resulting from the flight were also less common this year, although a few individual fields in Adams, Columbia, Chippewa, Clark, Eau Claire, Dunn and Marquette counties had infestations affecting 2-14% of the ears.

SPOTTED WING DROSOPHILA: Infestations were confirmed in 25 Wisconsin counties and suspected in another four in 2013. The current known distribution of spotted wing drosophila in the state includes the counties of Ashland, Bayfield, Brown, Columbia, Crawford, Dane, Door, Eau Claire, Fond du Lac, Grant, Iowa, Jackson, Jefferson, Kewaunee, La Crosse, Lafayette, Manitowoc, Marathon, Marinette, Monroe, Pierce, Polk, Racine, Rock, Sauk, Trempealeau, Vernon, Washburn, Winnebago and Wood, for a total of 30 confirmed counties since this invasive Asian vinegar fly was first identified in Wisconsin in 2010.

CORN ROOTWORM: Corn surveyed in August yielded a state average of 0.5 beetle per plant, a minor decrease from 0.6 per plant in 2012. Counts declined or remained the same in eight of the nine agricultural districts, with the exception of the northwest where the average increased from 0.5 to 0.7 beetle per plant. Heavy spring rain and extensive use of Bt-rootworm corn are presumed to have contributed to this year's lower beetle populations.

GYPSY MOTH: DNR aerial surveys documented 12,248 defoliated acres statewide this season: 7,320 acres in Bayfield County, 4,324 acres on the Bad River Reservation in Ashland County, and 604 acres on several small parcels throughout the state. Approximately 12,200 acres were considered lightly defoliated and about 48 acres were rated as heavily defoliated. Last year, larvae defoliated 14,500 forested acres in Ashland, Bayfield and Marinette counties.

CORN EARWORM: An early migration beginning on May 29 and continuing throughout July produced scattered infestations in corn across southern and central Wisconsin by late June. The primary flight from early August to mid-September led to a second round of more damaging larval populations that persisted into October. The annual moth count of 6,568 in 15 traps was 38% lower than in 2012, although surveys indicated corn earworm problems were much more prevalent in 2013.

WHITE-LINED SPHINX MOTH: This insect was unusually abundant this season. The larvae were noted on apple, evening primrose, rose and grape in July and adults of the summer flight were very active from August through early October. Reports suggested the largest populations were found in central and west-central Wisconsin.



White-lined sphinx moth

Jerry Walter weatherunderground.com

EMERALD ASH BORER: The spread of this ash pest greatly accelerated in 2013, especially in southeastern Wisconsin where the first infestation was discovered six years ago. Emerald ash borer was detected in four new counties this year---Dodge, Douglas, Sauk and Winnebago---and now occurs in portions of 18 Wisconsin counties.

FORAGES & GRAINS

POTATO LEAFHOPPER: The first distinct migration of 2013 occurred from May 14-20 and leafhoppers were widely distributed over the southern two-thirds of the state by early June. Nymphs appeared in second crop alfalfa by June 16. Surveys found low to moderate numbers all season long, with representative counts consistently averaging below 1.9 per sweep statewide. Economic levels of 2.0 or more leafhoppers per sweep were not documented in any alfalfa field sampled this year and treatment was generally not required.

ALFALFA WEEVIL: Larvae were collected for the first time this season in Grant County on May 13, more than one month later than in 2012. Development accelerated in May and weevils were prevalent by early June. Persistently cold, rainy weather and competing corn and soybean planting schedules delayed the first alfalfa harvest and defoliation became pronounced in some fields. Counts peaked from June 6-13 at 5-10 larvae per sweep. Carryover of weevils into the second crop was common this year, but the damage subsided by early July as remaining larvae pupated.

CEPHALOSPORIUM STRIPE: This fungal vascular wilt of wheat was verified from one wheat field in Calumet County in 2013, representing the second confirmed report in Wisconsin. The infected sample was collected on June 27 as part of standard wheat disease surveys. Cephalosporium stripe was first documented in the state two years ago in Rock County. The recent detections have no regulatory impact since the disease is widespread in the U.S. and occurs in parts of Canada.

CORN

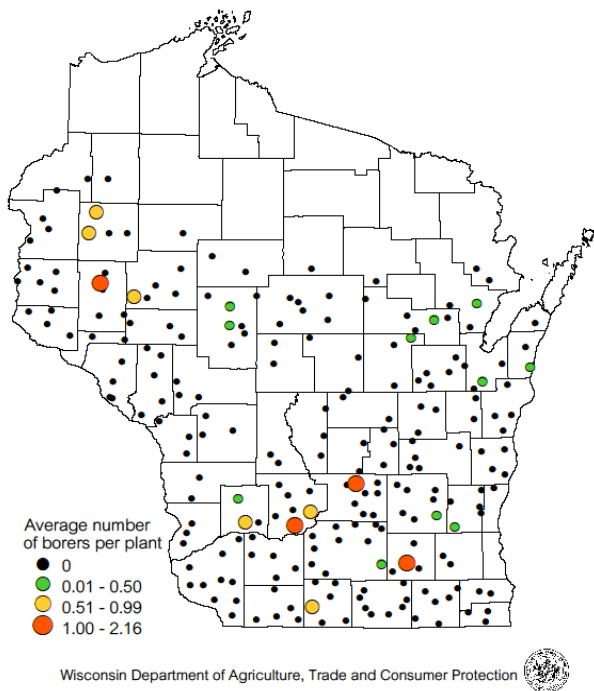
EUROPEAN CORN BORER: Larval surveys in the fall of 2013 found the second lowest population in 72 years, 0.04 borer per plant. The lowest state average recorded in the history of the survey was 0.03 per plant last year. Minor population increases from 2012 were charted in the southwest, south-central, southeast, northwest and north-central agricultural districts, and decreases occurred in the west-central and northeast areas (see table on page 118). District averages in the central and east-central regions remained unchanged at 0.01 borer per plant, or just one larva per 100 plants. Only 18% of the

229 fields sampled showed evidence of infestation, while the other 82% had no signs of larval injury.

The near-historic low number of corn borers observed again this year reflects the increased prevalence of Bt corn, which comprised 66% of corn acreage in the state in 2013. Another exceptionally low overwintering population indicates the spring moth flight and subsequent first generation of larvae are unlikely to pose a significant early-season threat to the 2014 corn crop.

European Corn Borer Survey Results 2013

State Ave. = 0.04 borer per plant

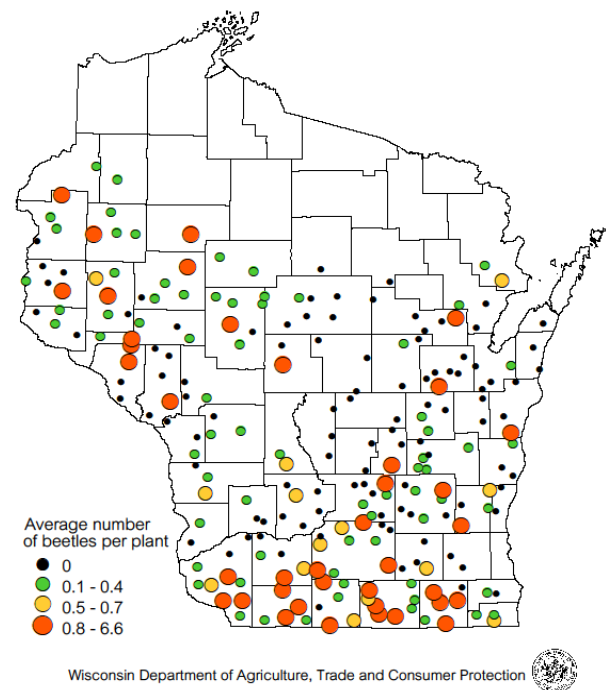


BLACK CUTWORM: Moths began arriving in the state on April 15, first appearing near Janesville in Rock County. The first significant flight was registered in Dodge and Grant counties from May 6-7 and the primary cutting period was predicted to start by May 28. Spring planting delays and rampant weed infestations created very favorable outbreak conditions, but widespread cutworm problems failed to develop. The spring migration of 577 moths collected from April 16-June 5 was much smaller than last year's flight of 2,601 moths and damage to emerging corn was not as prevalent or severe as expected.

CORN ROOTWORM: Development was delayed this year by dry soils during the summer drought of 2012, which caused oviposition to occur at a lower depth in the soil profile, as well as historically cold, wet spring

weather. The first beetles appeared later than normal, around July 11, and populations peaked during the third and fourth weeks of August. The state average population of 0.5 beetle per plant was a decrease from the 2012 average of 0.6 per plant, indicating beetle pressure was slightly lower in 2013. A few reports of heavy populations were received from northwestern counties where the survey found an average of 0.7 per plant and about ¼ of sampled fields had economic beetle counts above the 0.75 beetle per plant threshold. Averages across the northern and central counties were otherwise low. Results of the annual beetle survey suggest a lower potential for root damage to non-Bt continuous corn in central, north-central and northeastern Wisconsin next spring. A higher risk of damage is likely for the areas represented by red symbols in the map below.

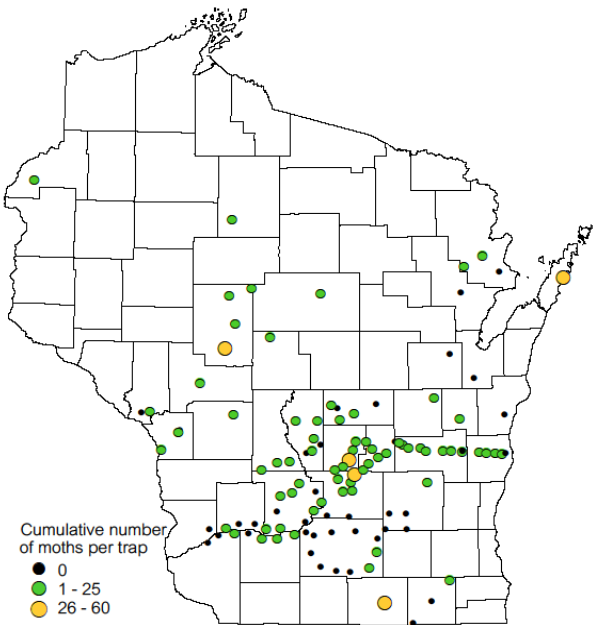
Corn Rootworm Beetle Survey Results 2013



WESTERN BEAN CUTWORM: Moth counts were the lowest in the nine-year history of western bean cutworm monitoring in Wisconsin. The 2013 trapping survey registered just 663 moths in 114 traps, or six per trap. This is considerably lower than in 2012 when a total of 3,290 moths were collected in 132 traps (25 per trap). The highest individual count for the eleven-week monitoring period was 60 moths near Montello in Marquette County. Possible explanations for the unprecedented decline are that larval populations were reduced by the 2012 drought or that high mortality occurred during the

2012-13 winter months. Moth counts have consistently declined since 2010 when the annual survey found the state record of 10,807 moths in 136 traps, or 79 per trap.

Western Bean Cutworm Trap Counts 2013



Wisconsin Department of Agriculture, Trade and Consumer Protection

CORN EARWORM: Migrants first arrived during an early flight that started by May 29 and continued throughout July. Moth numbers fluctuated during this period, with a weekly high count of 154 registered from June 7-13 near Janesville. Larvae resulting from the early flight appeared in vegetative corn by June 27.

A subsequent and more destructive primary flight from early August to mid-September led to larger larval populations which required spray programs to prevent ear damage. Counts during the primary flight peaked from August 23-September 5 when the Fond du Lac County sites registered 309-613 moths per trap. Although the cumulative seasonal capture of 6,568 moths in 2013 was 38% lower than 10,656 moths in 2012, late-season infestations were more widespread this year compared to last year when most of the moths arrived after sweet corn was well past the critical silking stage.

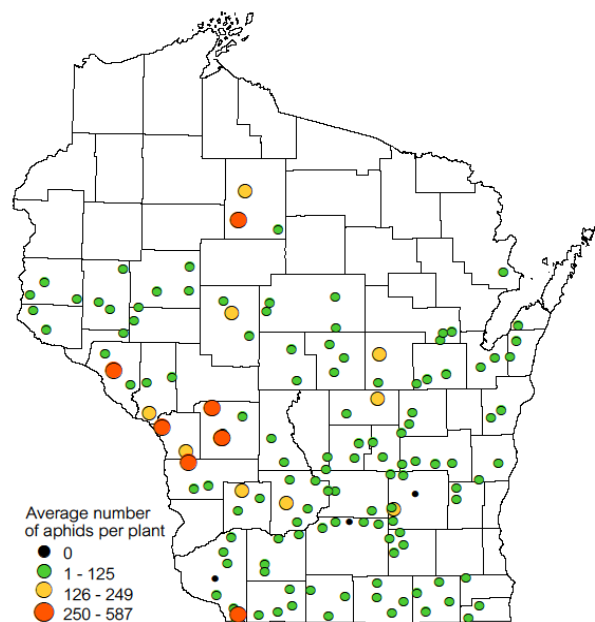
TRUE ARMYWORM: The first armyworm migrants appeared in black light traps on the night of April 15. Small flights of 35 or fewer moths occurred from mid-May to mid-June and light infestations were detected in corn by early June. A locally heavy flight of 301 moths was recorded

at Janesville from June 26-July 10, but larvae of the second generation caused no apparent damage in surveyed fields. No economic injury to corn was attributed to armyworms this season.

SOYBEANS

SOYBEAN APHID: Densities during the second half of the annual survey were the highest in five years. Examination of 139 soybean fields, once in July and again in August, found a state average of 18 aphids per plant during the July survey and a substantially higher count of 55 per plant in August. For comparison, state average densities from 2010-2012 were extremely low at 7-16 aphids per plant and the state average in 2008 was 72 per plant. Approximately 6% of sites sampled from August 6-28 contained economic populations of 250-587 per plant, 22% of fields had moderate averages of 50-249 per plant, and 72% had counts of less than 49 per plant. Populations in 30% of fields decreased from July to August, suggesting that about one-third of the survey sites may have been treated for aphid control this season. This insect was the most economically important insect pest affecting soybeans in 2013, with populations reaching the highest levels since 2008.

Soybean Aphid Survey Results August 2013

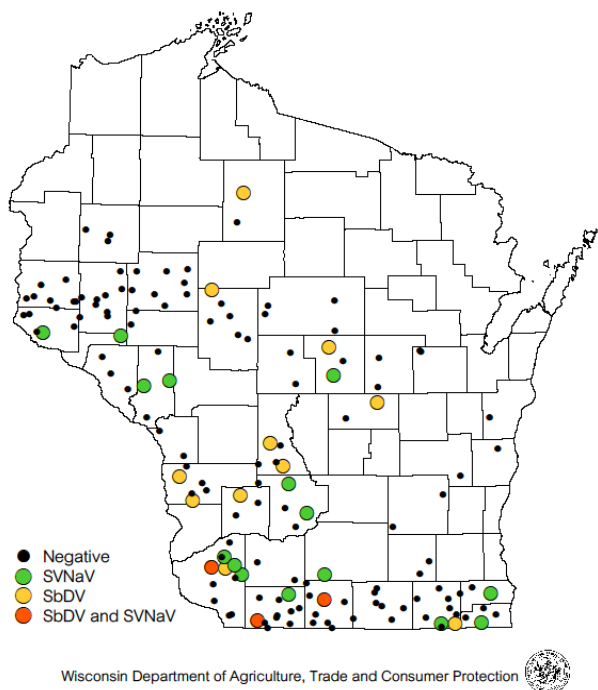


Wisconsin Department of Agriculture, Trade and Consumer Protection

SOYBEAN VIRUSES: One hundred and fifty-one soybean fields were sampled and tested for soybean dwarf virus

(SbDV), soybean vein necrosis-associated virus (SVNaV) and alfalfa mosaic virus (AMV) this season. Nine percent of fields tested were infected with SbDV in 2013, comparable to the 10% infection rate in 2012. Alfalfa mosaic virus was found in 5% of tested fields, an increase from 2% the year before. Soybean vein necrosis-associated virus, a tospovirus first detected in Wisconsin last season, was found in 12% of samples.

Soybean Virus Survey Results 2013



PHYTOPHTHORA ROOT ROT: DATCP plant pathologists surveyed soybean fields for root rot diseases from June 17-July 18. Of the 52 fields sampled, seven (13%) tested positive for *Phytophthora sojae*, a common cause of soybean root and stem rot in Wisconsin. A second, newly described *Phytophthora* species, *Phytophthora sansomeana*, was identified from five samples (10%). Four of the *P. sansomeana* finds were from soybean fields randomly selected for survey. One detection, on corn plants, was from a field which tested positive in 2012 and was resampled in 2013. Corn is also reported to be a host of *P. sansomeana*.

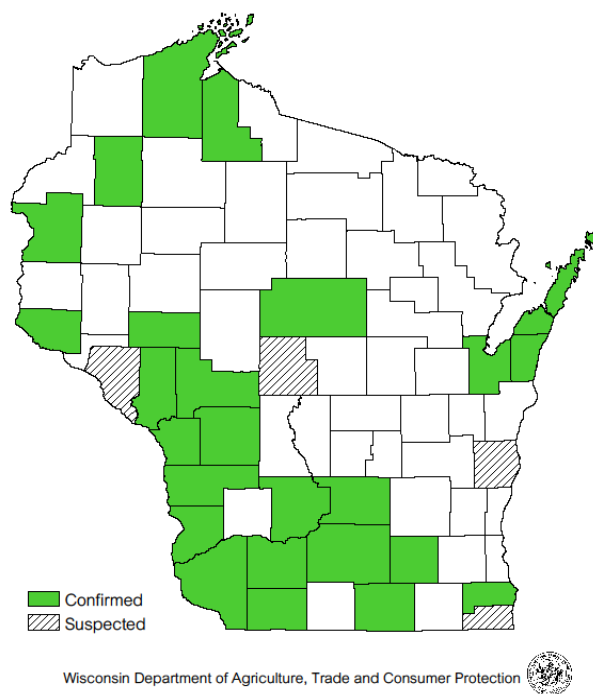
FRUITS

APPLE MAGGOT: The first flies of the season were registered from July 4-10. Counts remained low until early August when activity surged abruptly and numbers

increased to 15-25 flies per trap in a few southern apple orchards. Emergence peaked by mid-August then declined rapidly with the intensifying drought. Dry weather in July and August and timely insecticide sprays generally suppressed the flies and their damage this year.

SPOTTED WING DROSOPHILA: Significant losses to the fall raspberry crop were reported for the second year in a row. The first adults of the season were collected by UW researchers in Vernon County on June 24 and many new cases of larval infestations in fruits appeared rapidly across the state in the following month. By mid-September, spotted wing drosophila (SWD) had been confirmed in 23 counties, from Racine in the southeast to Bayfield in the far north. Two additional cases were documented in October for total of 25 counties in 2013. The early and rapid emergence of flies and larvae this year suggests this invasive pest is established and overwintering locally in Wisconsin.

Spotted Wing Drosophila Infestations 2013



CODLING MOTH: Moths began collecting in traps on the night of May 19 and the biofix was set from May 21-22 in southern orchards and from May 28-June 1 at central and western sites. The first flight peaked in the southern half of the state by late June, although spring moths persisted well into July. Summer moths appeared from mid- to late July and controls were applied during the first two weeks of August. Counts stayed comparatively high

until early September. By most accounts, emergence of the first generation was fairly predictable this spring, resulting in adequate early-season control and fewer problems with the second larval generation.

EXOTIC GRAPE MOTHS: Seventeen vineyards in Brown, Calumet, Dane, Door, Fond du Lac, Kewaunee, Manitowoc, Sheboygan and Waushara counties were systematically trapped for exotic grape moths by DATCP entomologists between May 1 and September 30. The target pests were the light brown apple moth, European grape berry moth, European grapevine moth, and silver Y moth, all insects of high concern to the grape industry and USDA APHIS “priority pests” for grapes. No exotic fruit moths were found.

APPLE SCAB: Spring weather conditions were highly suitable for scab development in 2013. Cool temperatures and frequent rainfall during the primary infection period delayed cover sprays and diluted fungicides, making control difficult. The cooperator near Deerfield in Dane County noted that scab pressure was the highest in many years, although most growers indicated their disease management programs were effective.



Apple scab

Skye Hohmann Botanica/Alamy

STINK BUG: A fruit grower in Trempealeau County reported that these insects were the primary cause of surface damage to apples and peaches in her orchard this season. Feeding and probing by the nymphs and adults prior to harvest left depressions on the fruits that appeared only after a period of time in storage. The aesthetic damage was attributed to native species of stink bug and not the invasive brown marmorated stink bug, which has yet to turn up in any Wisconsin orchard or agronomic crop.

DOWNY MILDEW OF GRAPE: Many vineyards were adversely impacted by downy mildew and anthracnose this year due to favorable weather conditions for disease development, according to a report from the UW-Madison Plant Disease Diagnostic Clinic. Removal of leaf litter on the vineyard floor and selective pruning were recommended to reduce the amount of overwintering inoculum.

VEGETABLES

SQUASH BUG: This difficult-to-control insect was a common problem in home gardens again in 2013. Several reports of damage to melons, pumpkins and squash were received in July and August. The dry weather of late summer probably contributed to the high populations observed.



Squash bug nymphs

www.extension.umn.edu

LATE BLIGHT: Symptoms first appeared in an Adams County potato field on June 28 and by early August potatoes infected with late blight had been confirmed in Adams, Brown, Dunn, Juneau, Langlade, Portage and Waushara counties. Infected tomatoes were reported from Brown, Kewaunee, Manitowoc, Monroe, Ozaukee, Portage, Vernon and Waukesha counties. All but two of the samples were identified by the UW-Madison Department of Plant Pathology as US-23, a new strain first detected in 2010. Most late blight identified in the U.S. this year was the US-23 genotype, which is more virulent on tomato than potato.

STRIPED CUCUMBER BEETLE: Overwintered adults became numerous soon after emergence in May and severe infestations were observed on seedling and

transplanted cucurbits in Dane, Grant, Rock and Sauk County gardens. Treatment specifically for this pest was required in several instances. A Dane County grower noted that this beetle was the single most important pest insect on his farm this year.

NURSERY & FOREST

REJECTED NURSERY STOCK: By state regulation, ornamental plants and trees infested with regulated pests or that fail to meet pest cleanliness, labeling, or grade and quality standards cannot be offered for sale in Wisconsin. Among the nursery stock found to be in violation of these regulations in 2013 were numerous herbaceous perennials with viruses, pear trees with fireblight, phlox 'Fireworks' with stem and bulb nematode, redbud and catalpa trees with verticillium wilt, assorted non-viable stock, and various trees and shrubs with scale insect infestation and wood-boring insect damage. Many plants also lacked proper labels, which must include the botanical name and USDA hardiness zone. Nursery inspectors required proper labeling before sale was allowed.

Also rejected again this year were plants listed in the NR 40 Invasive Species Rule, such as blue lyme grass, curly leaf pondweed, red stemmed parrot feather, Tartarian honeysuckle, yellow floating heart and variegated porcelain berry vine. Violations of the NR 40 rule were documented by inspectors at 19 locations in 2013.



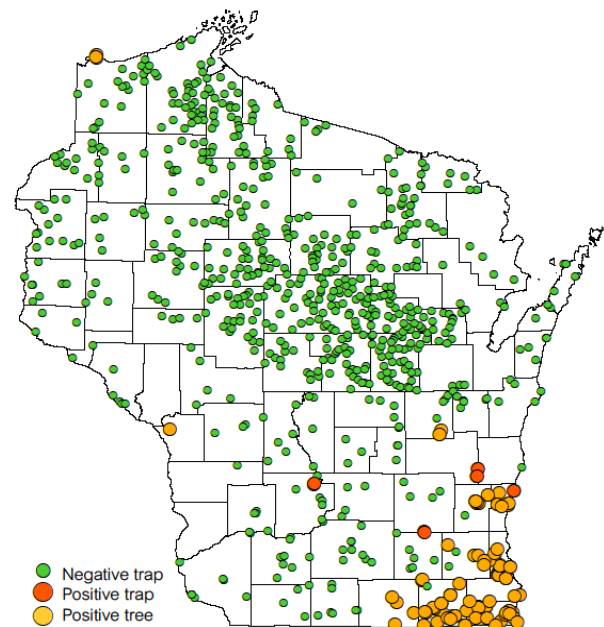
Parrot feather, *Myriophyllum aquaticum*

Konnie Jerabek DATCP

EMERALD ASH BORER: The 2013 Wisconsin EAB detection survey included 693 traps and resulted in the capture of beetles on one DATCP trap in Dodge County and on four DNR traps at state parks in Fond du Lac, Ozaukee

and Sauk counties. Through the vigilance of private and municipal arborists, state forest health specialists and several educated homeowners, infested trees were found in two new counties, Douglas and Winnebago, and in several southeastern counties in which EAB was already known to occur. The Douglas County detection was more than 200 miles north of any previous known infestation. Consequently, Dodge, Douglas, Sauk and Winnebago counties were added to the existing quarantine. Fond du Lac and Ozaukee counties have been quarantined since 2008. Emerald ash borer has now been found in 18 Wisconsin counties: Brown, Crawford, Dodge, Douglas, Fond du Lac, Kenosha, La Crosse, Milwaukee, Ozaukee, Racine, Rock, Sauk, Trempealeau, Vernon, Walworth, Washington, Waukesha and Winnebago. Jefferson and Sheboygan counties have also been quarantined due to their proximity to known infestations.

Emerald Ash Borer Detection Survey 2013



Wisconsin Department of Agriculture, Trade and Consumer Protection



JAPANESE BEETLE: Counts in Wisconsin nurseries declined for the second straight year. The annual trapping survey yielded an average of 95 beetles per trap, a 42% decrease from 165 per trap in 2012, and a 60% decline from 238 in 2011. High average counts of 200 or more beetles per trap were registered in Jefferson and Manitowoc counties, moderate counts of 50-199 per trap were found in Eau Claire, Dodge, Jackson, Ozaukee and Washington counties, and 24 other counties averaged fewer than 50 per trap. One possible reason for the

decreased beetle catch is that dry soils during the 2012 drought negatively impacted egg and larvae survival.

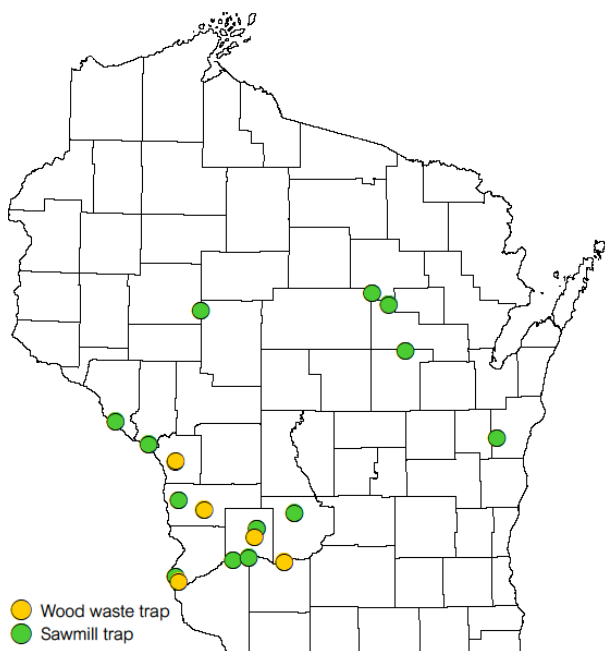


Japanese beetles

John Kaminski flickr.com

WALNUT TWIG BEETLE: A trapping survey for this vector of the thousand cankers disease fungus, *Geosmithia morbida*, was conducted for the second year. The survey consisted of 36 pheromone traps deployed at five municipal wood waste drop-off sites and 13 sawmills in Buffalo, Chippewa, Crawford, Grant, La Crosse, Langlade, Manitowoc, Richland, Sauk, Shawano, Trempealeau, Vernon and Waupaca counties. No beetles have been detected so far, although sample process is not yet complete.

Walnut Twig Beetle Detection Survey 2013



● Wood waste trap
● Sawmill trap

Thousand cankers disease is a newly recognized disease (2008) that has caused widespread death of black walnuts in at least five eastern states (North Carolina, Ohio, Pennsylvania, Tennessee, and Virginia) and nine western states (Arizona, California, Colorado, Idaho, New Mexico, Nevada, Oregon, Utah, and Washington) during the past decade. It has not been found in Wisconsin to date.

CHRISTMAS TREE ROOT ROTS: As of November 1, thirty-eight diseased Christmas trees have been received by the Plant Industry Laboratory for diagnosis. Nine samples from fields in Eau Claire, Marathon and Lincoln counties have tested positive for four distinct Phytophthora species: *Phytophthora cactorum*, *P. europaea*, *P. plurivola* and *P. sansomeana*. Other diseases associated with Christmas tree mortality this year were armillaria root rot, cytospora canker, phomopsis stem canker and sclerophoma tip blight.

VIRUS SURVEY OF ORNAMENTALS: A survey for viruses of ornamentals was conducted at 59 Wisconsin greenhouse, nursery and retailer locations in 2013. Two hundred and eleven plants exhibiting virus symptoms were collected and diagnosed at the DATCP Plant Industry Laboratory. Several samples were tested for as many as nine viruses, depending upon the host. Of the 211 plants tested, 127 (60%) were infected with at least one virus.

The most frequently detected virus was tobacco rattle virus (TRV), found in 68 of 170 plant samples (40%) in 17 separate host genera. Epimedium (100% of samples positive for TRV), dicentra (95% positive), paeonia (47% positive), delphinium (44% positive), and phlox (40% positive) were the genera most often infected with TRV.



Epimedium 'Rubrum' with virus symptoms

Konnie Jerabek DATCP

Several other viruses were also detected. Hosta virus X was diagnosed in 11 of 32 samples (34%), and a variety of potyviruses were found in 15 of 82 samples (18%), including canna (canna yellow streak virus), lily (lily mottle virus), lobelia (turnip mosaic virus), and a few unknown potyviruses detected in iris, phlox and sedum.



Tobacco rattle virus symptoms on *Dicentra* Liz Meils DATCP

Another 10 of 152 samples (7%) tested positive for cucumber mosaic virus, five of 34 samples (15%) were positive for alfalfa mosaic virus, and impatiens necrotic virus was found in six of 159 host plants (34%). Arabis mosaic virus, tobacco mosaic virus and tomato spotted wilt virus were found in only two or three plants.



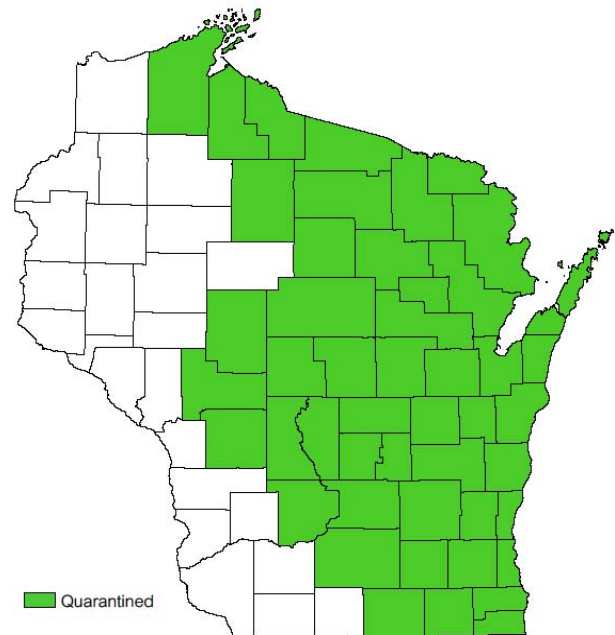
Hosta 'Royal Standard' with virus symptoms Konnie Jerabek DATCP

moths in 18,293 traps in 2012. As was the case in 2012, the highest numbers were reported from Ashland, Bayfield and Jackson counties while average counts in the southern third of the state declined.

The increase in moth capture in the northern part of the state is conjectured to be the result of weather conditions that increased female moth mortality, slowed larval development and extended the male moth flight period. Once again this year, none of the 52 counties trapped recorded zero moths.

No new counties were added to the existing quarantine in 2013. The gypsy moth quarantine currently includes 48 counties in the eastern and central areas of the state.

Gypsy Moth Quarantine 2013



Wisconsin Department of Agriculture, Trade and Consumer Protection

GYPSEY MOTH: Analysis of trapping program data revealed a doubling of moth counts from 2012 to 2013. The annual survey registered an average of 19 moths per trap compared to 9.5 last year. State counts were 353,134 moths in 18,513 traps in 2013 and 173,588

CORN ROOTWORM BEETLE SURVEY RESULTS 2000-2013 AVE. NO. OF BEETLES PER PLANT

DISTRICT	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	*AVE.
NW	0.9	0.4	0.1	0.4	0.5	0.4	0.3	0.1	0.5	0.7	0.4
NC	0.1	0.8	0.9	0.7	0.9	0.4	0.1	0.1	0.3	0.2	0.5
NE	0.1	0.3	1.8	0.5	0.6	0.6	0.1	0.3	0.6	0.2	0.5
WC	1.1	0.8	0.8	0.4	0.6	0.5	0.4	0.6	0.4	0.4	0.6
C	0.6	0.9	0.7	0.8	0.5	0.4	0.4	0.8	0.5	0.2	0.6
EC	1.5	1.1	2.2	1.4	1.0	0.6	0.3	0.5	0.4	0.3	0.9
SW	0.7	3.2	2.2	0.4	1.1	0.7	0.3	1.1	0.8	0.6	1.1
SC	0.6	1.9	1.7	2.2	1.5	1.1	0.3	1.4	0.9	0.5	1.2
SE	0.2	3.8	1.4	1.0	1.6	0.3	0.2	0.7	0.9	0.8	1.1
STATE AVE.	0.7	1.6	1.4	1.0	1.0	0.6	0.3	0.7	0.6	0.5	0.8

Survey results based on average number of beetles per plant per 10 plants examined. *Survey was not conducted 2001-2004.

EUROPEAN CORN BORER FALL SURVEY RESULTS 2004-2013 AVE. NO. OF LARVAE PER PLANT

DISTRICT	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	10-YR
NW	0.13	0.01	0.27	0.24	0.12	0.06	0.08	0.15	0.04	0.07	0.12
NC	0.20	0.36	0.16	0.35	0.18	0.10	0.02	0.07	0.01	0.02	0.15
NE	0.22	0.33	0.23	0.07	0.12	0.12	0.19	0.13	0.05	0.02	0.15
WC	0.05	0.24	0.42	0.52	0.04	0.10	0.08	0.12	0.09	0.06	0.17
C	0.06	0.44	0.51	0.42	0.11	0.06	0.06	0.05	0.01	0.01	0.17
EC	0.22	0.25	0.11	0.21	0.20	0.09	0.01	0.03	0.01	0.01	0.11
SW	0.10	0.49	0.20	0.28	0.05	0.06	0.12	0.03	0.03	0.06	0.14
SC	0.05	0.67	0.38	0.33	0.07	0.02	0.07	0.20	0.01	0.08	0.19
SE	0.02	0.35	0.16	0.12	0.04	0.00	0.00	0.01	0.00	0.01	0.07
STATE AVE.	0.10	0.40	0.29	0.31	0.09	0.06	0.07	0.09	0.03	0.04	0.14

Survey results based on number of 4th and 5th instar corn borer larvae per plant.