

Wisconsin Department of Agriculture, Trade & Consumer Protection

Wisconsin Pest Bulletin

PO Box 8911 • Madison, WI 53718 • Phone 1-800-462-2803 • Fax: 608-224-4656

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



Weather and Pests

Weather was the principal factor influencing crop production during the 2007 growing season. Hot, dry conditions in June and July adversely affected crop development, causing alfalfa and unirrigated corn on sandy soils to suffer major yield reductions. Precipitation amounts were scarcely adequate to keep crops growing well in most areas and many insects thrived in the heat. Rain storms late in August ended the drought, but the high winds and historic amounts of rainfall caused flooding in the south and west and widespread lodging of corn. Despite the adversities, many Wisconsin growers harvested good yields of high quality crops, except in regions where the summer drought or excessive fall moisture did irreparable damage.

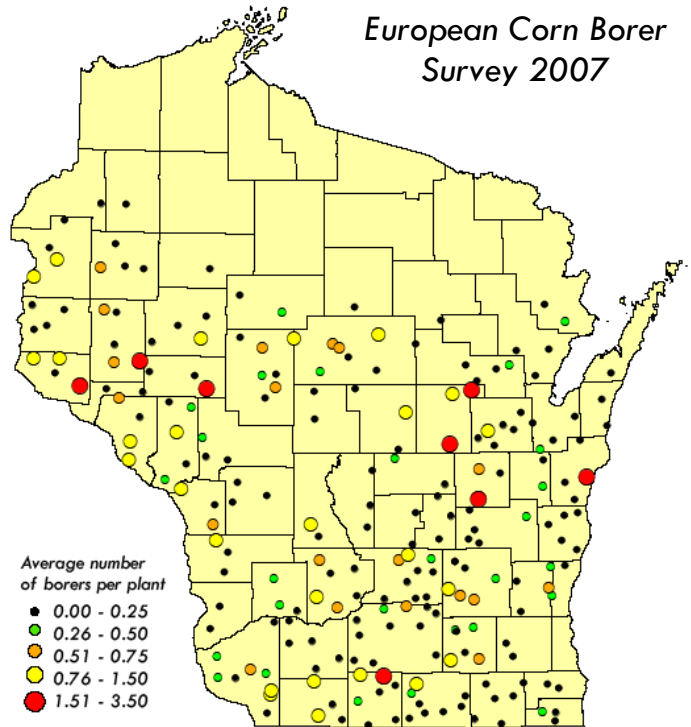
European Corn Borer Average no. borers per plant

| | 2003 | 2004 | 2005 | 2006 | 2007 | 5-Yr |
|---------------|------|------|------|------|------|------|
| Northwest | 0.20 | 0.13 | 0.01 | 0.27 | 0.24 | 0.17 |
| North Central | 0.14 | 0.20 | 0.36 | 0.16 | 0.35 | 0.24 |
| Northeast | 0.23 | 0.22 | 0.33 | 0.23 | 0.07 | 0.22 |
| West Central | 0.16 | 0.05 | 0.24 | 0.42 | 0.52 | 0.28 |
| Central | 0.44 | 0.06 | 0.44 | 0.51 | 0.42 | 0.37 |
| East Central | 0.20 | 0.22 | 0.25 | 0.11 | 0.21 | 0.20 |
| Southwest | 0.34 | 0.10 | 0.49 | 0.20 | 0.28 | 0.28 |
| South Central | 0.51 | 0.05 | 0.67 | 0.38 | 0.33 | 0.39 |
| Southeast | 0.21 | 0.02 | 0.35 | 0.16 | 0.12 | 0.17 |
| STATE AVE. | 0.30 | 0.10 | 0.40 | 0.29 | 0.31 | 0.28 |

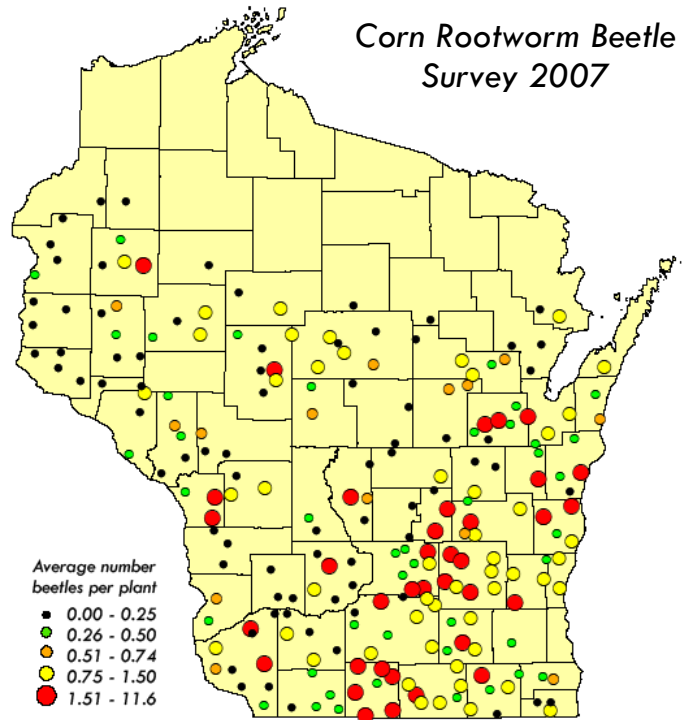
Corn Rootworm Beetle Average no. beetles per plant

| | 1998 | 1999 | 2000 | 2005 | 2006 | 2007 |
|---------------|------|------|------|------|------|------|
| Northwest | 0.5 | 0.2 | 0.9 | 0.4 | 0.1 | 0.4 |
| North Central | 0.1 | 0.2 | 0.2 | 0.8 | 0.9 | 0.7 |
| Northeast | 0.2 | 0.4 | 0.1 | 0.3 | 1.8 | 0.3 |
| West Central | 0.5 | 0.8 | 1.1 | 0.8 | 0.8 | 0.4 |
| Central | 0.2 | 0.4 | 0.6 | 0.9 | 0.7 | 0.8 |
| East Central | 0.4 | 0.8 | 1.5 | 1.1 | 2.2 | 1.4 |
| Southwest | 0.9 | 0.6 | 0.7 | 3.2 | 2.2 | 0.4 |
| South Central | 0.5 | 0.5 | 0.6 | 1.9 | 1.7 | 2.3 |
| Southeast | 0.3 | 0.3 | 0.2 | 3.8 | 1.4 | 0.9 |
| STATE AVE. | 0.4 | 0.5 | 0.7 | 1.6 | 1.4 | 1.0 |

European Corn Borer Survey 2007



Corn Rootworm Beetle Survey 2007



Corn

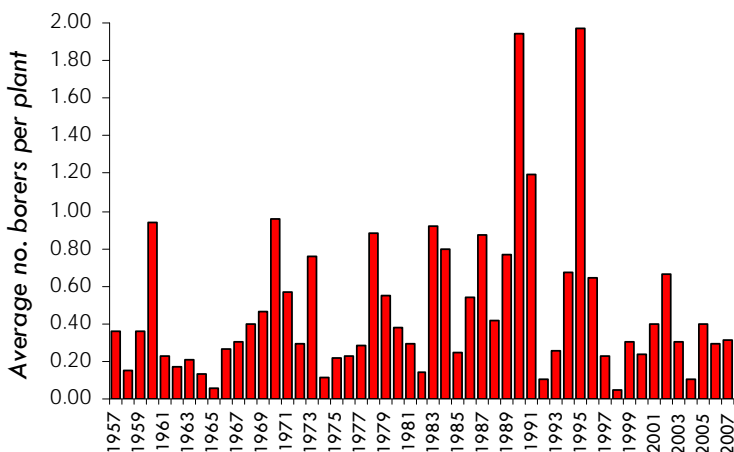
European corn borer - The fall abundance survey of 230 fields registered a minor increase in population densities compared to the fall of 2006. The number of European corn borers entering the winter of 2007 increased to 0.31 per plant from 0.29 per plant in 2006. The state average is equal to the 10-year average of 0.31 per plant and below the 50-year average of 0.48 per plant. Increases were noted in the southwest (0.20 to 0.28 per plant), west central (0.42 to 0.52 per plant), east central (0.11 to 0.21 per plant), and north central (0.16 to 0.35 per plant) districts. Decreases were documented in the remaining five districts.

Approximately 53% of the fields of grain corn had no detectable larval population; some of these unquestionably were Bt hybrids. Roughly 23% of the fields had populations exceeding 0.50 borer per plant and 8% had populations above the economic threshold of 1.0 borer per plant. Three counties -- Eau Claire (1.7 per plant), Pierce (1.14 per plant), and Waupaca (1.9 per plant) -- had average densities greater than 1.0 borer per plant. The state mean percentage of corn plants infested with second generation larvae was 28%.

Many instances of ear shanks being infested with corn borer were noted during the fall survey. This feeding behavior, which resulted in hollow, weakened shanks and eventual ear drop, may have been due to borers finding the shanks more desirable than the saturated, rot-infected stalks. Stalk rot was widely prevalent this fall because of stress from drought early in summer followed by late season rains.

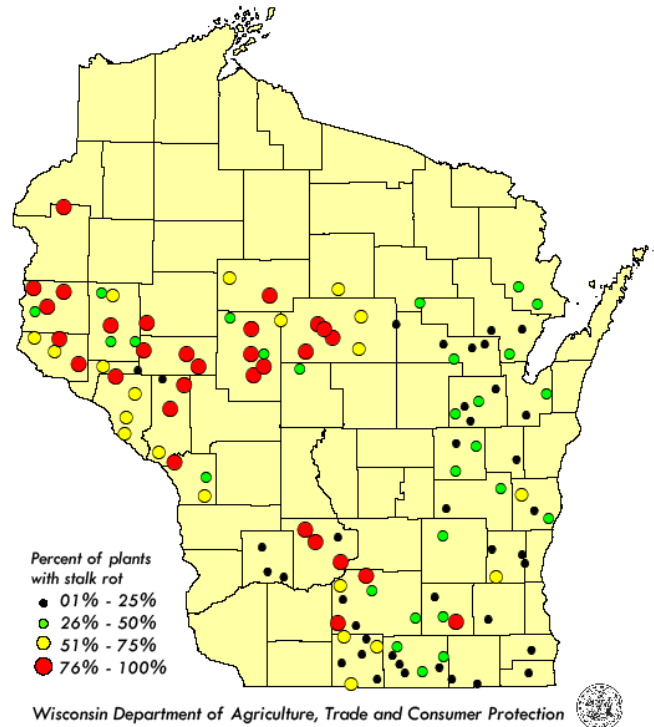
Results of the 2007 survey suggest another light first flight of moths should be expected next spring. Planting Bt hybrids for European corn borer management in 2008 may be unwarranted in many areas (except those represented by red or yellow circles on the map on page 198), considering that borer pressure is expected to be very low.

Statewide ECB Survey Averages 1957-2007



Stalk rot - Examination of many broken and downed corn stalks showed this condition usually was not caused by corn borer tunneling. Most instances of downed stalks this season were the result of stalk rot, which was present at high levels in many corn fields throughout the state. The findings of an unofficial fall survey of damaged stalks in 136 grain corn fields are summarized below. Observations made in corn in October found that 10% of the fields were completely infected with stalk rot, 36% of the fields had more than half of the plants infected with stalk rot, and 20% of the fields had a quarter of the plants infected with stalk rot.

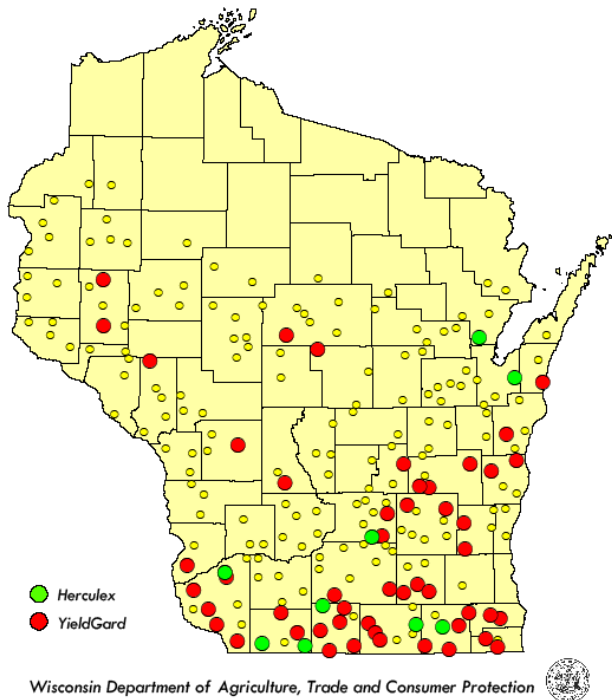
Stalk Rot Survey - October 2007



Corn rootworm - Analysis of the annual corn rootworm beetle survey revealed a state average population of 1.0 beetle per plant. 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. The western species was dominant on a statewide basis, while populations of the northern species were higher in the cooler and more northern counties, including Barron, Chippewa, Door, Dunn, Clark, Green Lake, Juneau, Lincoln, Marathon, Marinette, Oconto, Pepin, Polk, Portage, Rusk, Shawano, Taylor, Vernon, Waupaca, Winnebago, and Wood. About 39% of the 222 corn fields surveyed had economic populations of 0.75 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 from 2006 to 2007 were noted in the southwest (2.2 to 0.4 per plant), northeast (1.8 to 0.5 per

plant), and east central districts (2.2 to 1.4 per plant). An average of 0.75 or more beetles per plant indicates the potential for feeding injury by corn rootworm larvae in multi-year corn.

YieldGard and Herculex Fields 2007 Corn Rootworm Beetle Survey



The use of transgenic Bt corn rootworm hybrids was also measured this season. The percentage of survey sites that were Bt corn rootworm fields nearly doubled 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-Cry34/35Ab1 protein. More Bt-rootworm corn was planted in the southwest and south central districts in 2006 and 2007 relative to the other districts. Maps summarizing the 2007 survey results are provided above and on page 198.

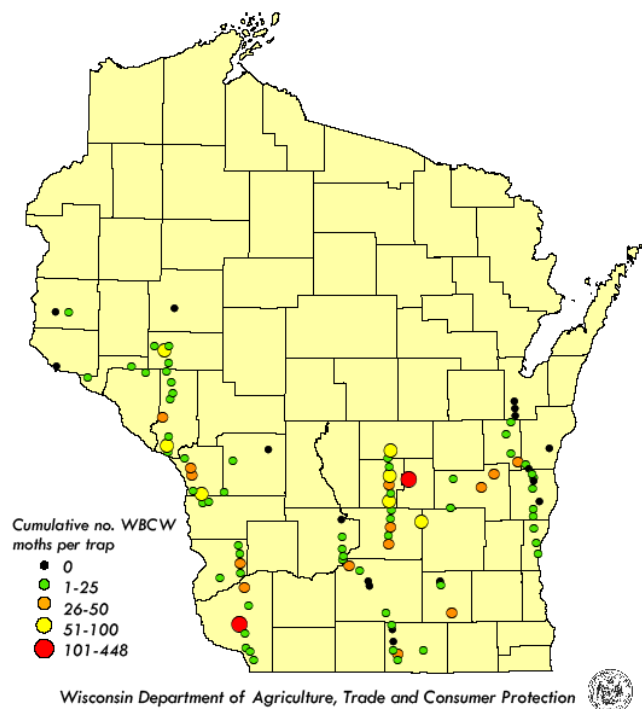
Western bean cutworm - A network of 103 pheromone traps in 27 counties provided data on the distribution, emergence, peak flight, and abundance of the western bean cutworm in 2007. DATCP survey specialists, in collaboration with 15 Pioneer Hi-Bred regional representatives and four cooperators, monitored milk jug traps from mid-June through early August and reported counts weekly as part of a multi-state monitoring network. DATCP has conducted a formalized trapping program for this pest since 2005.

Emergence of western bean cutworm moths was first noted on June 20 near Arcadia in Trempealeau County. Captures in pheromone traps peaked between July 12 and August 7. Black light trap captures escalated around the same time and registered a similar flight period. The

highest single nightly capture of 83 moths was documented on July 13 at Princeton in Green Lake County. This location also registered the highest seasonal cumulative capture of 448 moths between July 12 and August 9, with peak activity between July 12 and 21 when nightly captures averaged 29 moths. The second and third highest seasonal cumulative captures were 131 moths at Lancaster and 78 moths at Randolph. The 103 pheromone traps captured a total of 2,178 western bean cutworm moths during the 2007 season, and roughly 21% of these were reported from Princeton. A total of 17 traps, primarily those in the east central counties of Brown, Manitowoc and Sheboygan, captured no moths during the trapping program.

The presence of this late-season corn pest in Wisconsin and the Midwest since the late 1990s is evidence of an eastward expansion in its geographic range, which was once limited to Colorado and Nebraska. Consecutive years of trapping have not found populations of adults comparable to those registered in Iowa where cumulative captures have numbered as high as 2,069 moths per trap. No heavy larval infestations were reported this season and western bean cutworm does not yet represent a significant threat to corn in Wisconsin.

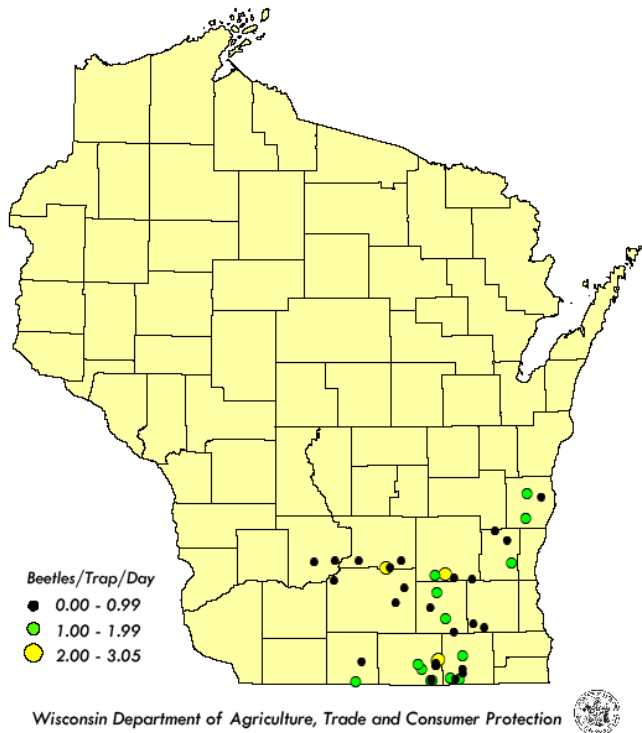
2007 Western Bean Cutworm Cumulative Pheromone Trap Counts



Variante western corn rootworm - The Wisconsin Variante Western Corn Rootworm Trapping Network monitored 45 soybean fields in 2007 and found no fields with populations above the economic threshold of 5 Beetles/Trap/Day (B/T/D) for the four week sampling period. Of the 45 soybean fields in Columbia, Dane, Dodge, Green, Jefferson, Rock, Sauk, Sheboygan, Walworth, Washington, and Waukesha counties, the highest

averages of 3.05 B/T/D and 2.17 B/T/D were found in Columbia and Rock counties, respectively. The trapping network results indicate that first-year corn planted after soybeans in the areas monitored is at a low risk for economic damage from larval rootworm feeding in 2008.

2007 Western Corn Rootworm Beetle Abundance in Soybean Fields



* Eight additional soybean fields were monitored in Buffalo, La Crosse, Monroe, and Vernon counties using a modified survey protocol. All of the fields trapped well-below the economic threshold at 0.01-0.70 B/T/D.

Forages

Potato leafhopper - The first wind-blown migrants were detected at lights on the evening of May 9, but counts did not escalate to any appreciable degree until June 1. Populations were sufficient to justify treatment by mid-June, with 2.0 adults per sweep common in the southern and central districts. Numbers escalated throughout June to reach the highest levels of the season by July 13, when averages climbed to 4.3 leafhoppers per sweep in the central and southwest counties, 2.2 per sweep in the east central counties, and 16.8 per sweep in the west central counties. A count of 38 per sweep was recorded in an exceptional field near Madison on July 11. In the northwest, a crop consultant recommended treatment on nearly every acre of alfalfa, both established stands and new seedings. Heavy populations in apples, beans, and potatoes at this time coincided with a large dispersion from cut alfalfa. During August when counts are perennially the highest, leafhoppers ranged from 1.0 to 12.1 per sweep in untreated fields to about 0.8 per sweep in those fields with

spray programs. Populations began to decrease over the state by mid-month due to heavy rainfall although residual populations remained into September, particularly in the dry northeast and north central counties. Potato leafhoppers were a persistent problem in 2007.

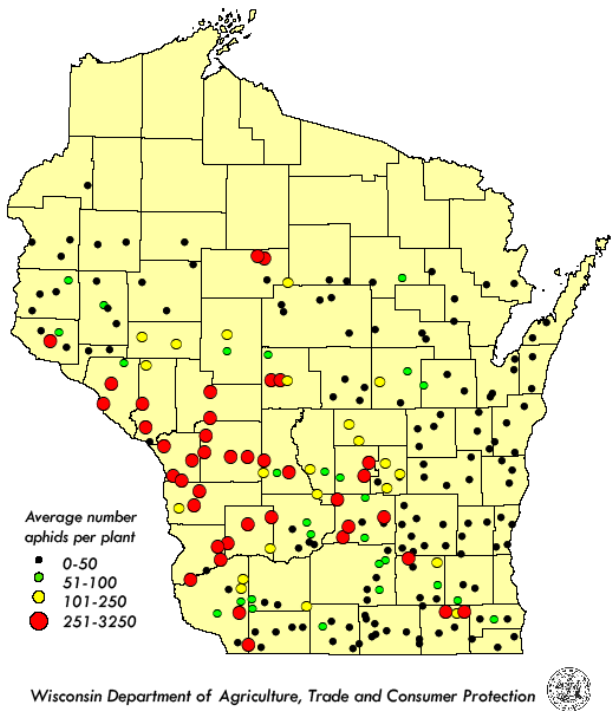
Alfalfa weevil - Larvae from overwintered eggs began appearing in sweep net collections by May 5. Despite a late hatch, abnormally high temperatures during the first two weeks of May greatly accelerated larval development, and surveys found the first economic injury between May 10 and 16. Growers in the south and west were alerted to the heightened potential for alfalfa weevil damage on May 18; some applied chemical treatments, while others opted to adjust their harvest schedules. Damage in the east central counties peaked around May 22, at which time alfalfa was either cut or being cut. Chemical controls were initiated by May 10 and continued through the end of the month. At the start of June, any unprotected hay that had not been harvested in the southern three tiers of counties incurred heavy feeding injury. Pupation began in the southern districts around June 8. Larval numbers decreased to less than 0.6 per sweep in all areas by June 22, and were very low during the balance of the summer.

Soybeans

Soybean virus - Virus symptoms were detected in 14 of 227 soybean fields examined as part of the annual soybean aphid and virus survey. Results were as follows: bean pod mottle virus (one field positive in Grant County); soybean dwarf virus (seven fields positive: Vernon [1], La Crosse [2], Walworth [1], Grant [2], and Crawford counties [1]); potyvirus group (one field positive in Dane County); cucumber mosaic virus (all negative); alfalfa mosaic virus (five fields positive: Crawford [1], Marathon [1], Monroe [1], Racine [1], and Sauk [1]).

Soybean aphid - The annual soybean aphid survey is conducted during the R2 to R4 stages of soybean growth to detect peak seasonal soybean aphid densities and to assess fields while treatment may still be beneficial. Examination of 227 soybean fields between July 12 and 31 found non-economic soybean aphid populations at 82% of the survey sites. Treatable or economic populations were detected at 18% of the sites, located principally in the west central district and portions of the southwest, south central, and central districts. Individual fields with high populations were found in Columbia, Crawford, Richland, Vernon, La Crosse, Marquette, Monroe, Juneau, Jackson, Buffalo, Trempealeau, Walworth, and Wood counties. Average soybean aphid densities in these areas ranged from 253 to 1,071 soybean aphids per plant. Moderate populations were detected in the central and north central districts, and low populations were found over much of the southeast, east central, northwest, and northeast districts. The 2007 statewide average number of soybean aphids per plant was 164. This compares to 69 aphids per plant in 2006, 108 aphids per plant in 2005, 11 aphids per plant in 2004 and 618 aphids per plant in 2003. The highest average number of aphids per plant was 3,250 in Columbia County.

2007 Soybean Aphid Survey Results R2 to R4 growth stages



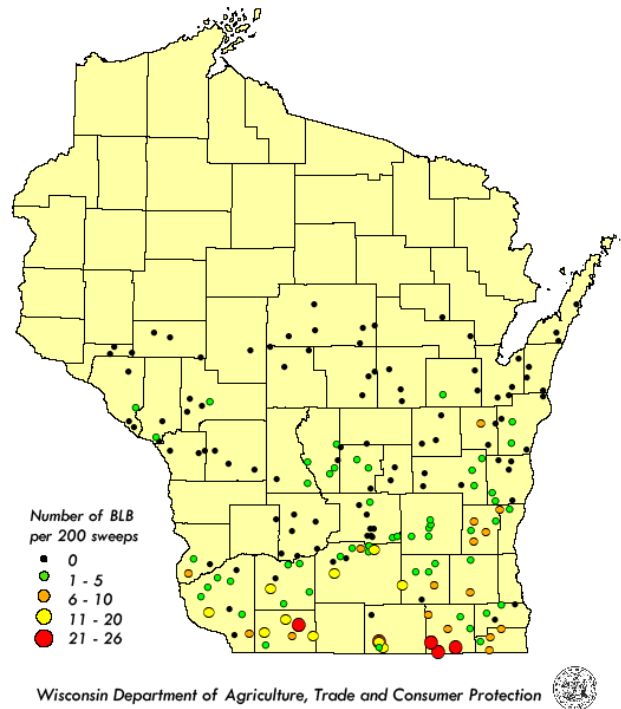
Bean leaf beetle - The fifth annual spring survey found the highest number of overwintered bean leaf beetles since surveys began in 2003. Pest survey specialists sampled 183 first crop alfalfa fields in 44 counties between May 9 and June 13, and collected 509 beetles from 86 of the sites. Counts ranged from 0 to 26 beetles per site, with the greatest numbers swept from fields in Lafayette, Rock and Walworth counties. Although fewer beetles were found per site as the survey progressed northward, this insect appeared to have wintered successfully across much of central Wisconsin. Overwintered adults were detected in Buffalo, Jackson, La Crosse, Manitowoc, Outagamie, and Trempealeau counties for the first time in the history of the survey. Ordinarily very few bean leaf beetles survive the winter months north of the southern three or four tiers of counties.

Subsequent to the field portion of survey, the beetles were tested for Bean Pod Mottle Virus (BPMV) at the DATCP Plant Industry Laboratory in Madison. ELISA testing determined that overwintered beetles from 11 alfalfa fields in Iowa, Lafayette, Racine, Rock, and Walworth counties carried BPMV. This is the most sites with bean leaf beetles carrying BPMV documented since 2003. Despite the higher number of surviving beetles, no increase in the incidence or severity of BPMV was noted this season. A follow-up soybean virus survey in August found BPMV in a single Grant County field (of 220 fields tested). The maps to the right summarize the results of the 2007 survey.

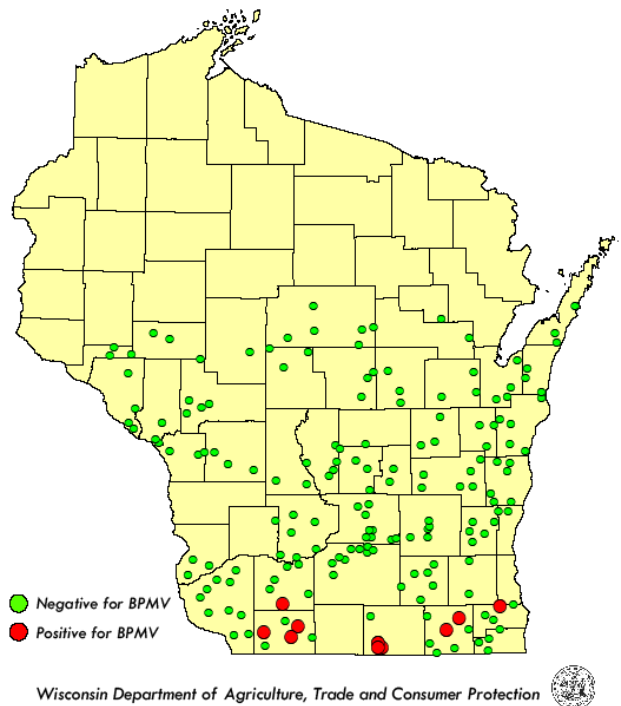
Soybean cyst nematode - Established populations of the Soybean Cyst Nematode (SCN), *Heterodera glycines*, have been confirmed in 44 Wisconsin counties, as indicated by the red areas in the map on page 203.

Twenty-eight soil samples were collected at random from soybean fields in counties not known to be infested with SCN. Two samples from Fond du Lac County were positive for SCN in 2007, marking the first detection of SCN on soybean in this county. Soybean cyst nematode is the most serious economic pest of soybeans in the United States.

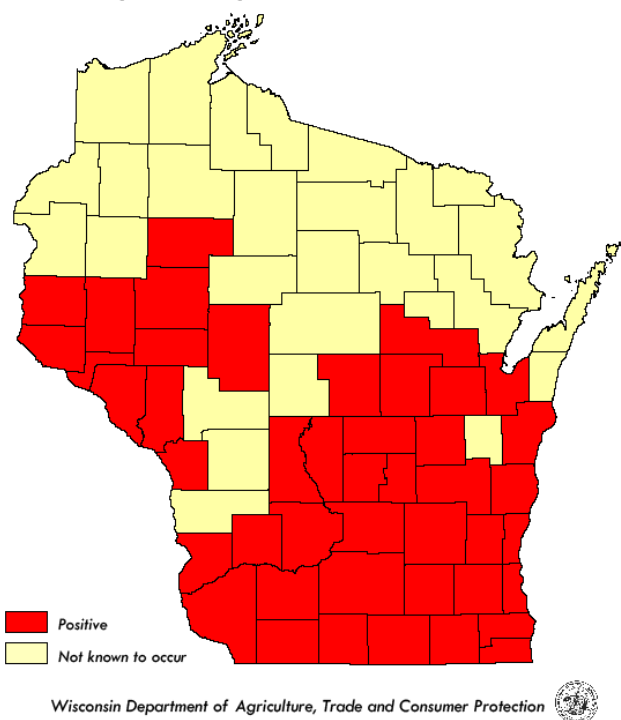
2007 Spring Survey for Overwintered Bean Leaf Beetles in Alfalfa



2007 Spring Survey for Overwintered Bean Leaf Beetles and BPMV in Alfalfa



Known Distribution of Soybean Cyst Nematode - 2007



potato growing areas of the state. The continued export of potatoes relies on the certification of potato fields and tubers as being free from these regulated pests.

Fruit

Exotic fruit moths - The DATCP network of 34 apple growers used pheromone traps to monitor the presence of light brown apple moth (LBAM), fruit tree tortrix (FTT), apple tortrix (AT), and cherry bark tortrix (CBT) in Wisconsin orchards. Trapping efforts for CBT have been carried out intermittently since 1983. Detection surveys for FTT and AT began in 2004. Trapping for LBAM was conducted for the first time in Wisconsin as part of a nationwide effort following the detection of this pest in several California counties in March 2007. Suspect LBAMs were captured near Bayfield, Beldenville, Brownsville, Deerfield, Malone, Raymond, and Spring Valley in late June and submitted to the DATCP entomologist for identification. All suspects were identified as native tortricids in the genus *Sparganothis*. Survey results for all four species were negative.

Vegetables

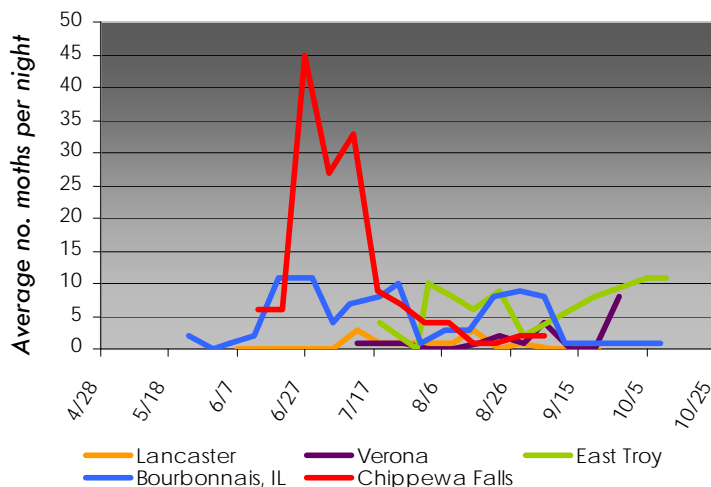
Cabbage looper - Pheromone traps monitored the adult flight period at five locations in Chippewa, Dane, Grant, and Walworth counties and Kankakee County, Illinois from May 24 through October 11. The first moths were captured at the Illinois site by June 7 and in Wisconsin by June 15. The highest weekly count of 45 moths was registered on June 27 near Chippewa Falls. Small peaks in activity occurred around late June-early July and again around late September-early October, reflecting the first and second flights. Cabbage looper flight activity was extremely light this season and larval damage to cruciferous crops was minimal.

Potatoes

Potato rot nematode - Since 1953, when this nematode was first detected in Wisconsin, approximately 3,014 acres of potato lands (108 fields) have been quarantined to prevent its spread to non-infested areas. To date, 992 acres (30 fields) still remain under state quarantine. In 2007, seven fields were inspected and potato rot nematode was detected in two of seven fields in Langlade County. These two fields, totaling 190 acres, were placed under quarantine. Two additional fields were released from quarantine. One was released for certified seed potato production after fumigation and two successive potato crops showed no evidence of potato rot nematode. The other was released for table stock potatoes.

Potato cyst nematodes (PCN) - A national survey for pale potato cyst nematode (*Globodera pallida*) and golden nematode (*Globodera rostochiensis*) was started in 2006 by the USDA Animal and Plant Health Inspection Service (APHIS) in response to finds of pale potato cyst nematode in Idaho and golden nematode in Quebec, Canada earlier that year. The objectives of the survey were to detect possible infestations by PCN in potato fields and to certify that U.S. potatoes were grown in areas free of the cyst-forming nematodes. As of October 24, DATCP personnel have collected and processed a total of 1,350 soil samples from Wisconsin for PCN (over four tons of piler dirt and soil), representing 75% of the goal of 1,800 samples by April 2008. Wisconsin has conducted surveys for golden nematode periodically in the past. Neither the pale potato cyst nematode nor golden nematode has been found in the

Cabbage Looper Pheromone Trap Counts 2007



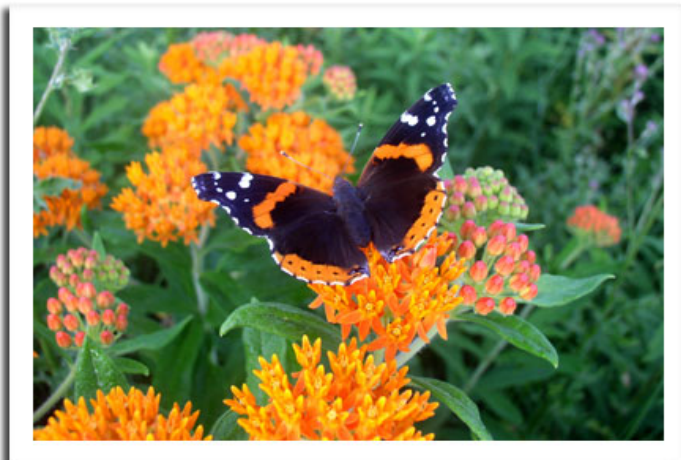
Swede midge (*Contarinia nasturtii*) - Delta traps baited with a lure specific to the Swede midge were positioned in

crucifer cropland and/or cruciferous weeds in Dane, Iowa, Rock, and Walworth counties. The traps were used to detect Swede midge, an introduced, light-brown fly that causes distorted growth and yield loss of broccoli, cabbage, cauliflower, Brussels sprouts, kale, and radishes. Trap liners were collected and replaced by cooperators or survey personnel from mid-July to October. Finds were negative.

Insect Highlights of 2007

Red admiral (*Vanessa atlanta*) - Multitudes of black and orange butterflies were observed along forest margins, roads, open fields, parks, marshes, yards, gardens, and orchards in June 2007. Population explosions of the red admiral are infrequent in Wisconsin, occurring approximately every eight to 10 years. Unlike its close relative the painted lady (*Vanessa cardui*), the red admiral eats weeds and is not considered to be an agricultural pest. Adults can be found on the flowers of buddleia, Joe-Pye weed, milkweed, thistle, red clover, aster, and alfalfa, and are attracted to sap flows, fermenting fruit, and bird droppings. The principal larval food plant is stinging nettle. Possible explanations for the high numbers were increased winter survival, decreased predation, parasitism and disease, and the widespread availability of the preferred food plant.

Mosquitoes - Extremely dry conditions in June and July suppressed the emergence of mosquitoes during the first half of summer. Heavy rains in mid-August restored most breeding pools, and annoyance to humans, livestock, and pets intensified drastically. Biting was severe throughout September near wooded lowlands and in suburban areas, many of which implemented mosquito abatement programs. Dense populations developed in the flooded southern counties of Crawford, Dane, Grant, Iowa, Kenosha, Lafayette, Richland, Sauk and Vernon. The relatively late emergence of mosquitoes continued into October when biting problems were gradually moderated by the cooler weather. The most noteworthy species this season was the floodwater mosquito, *Aedes vexans*.

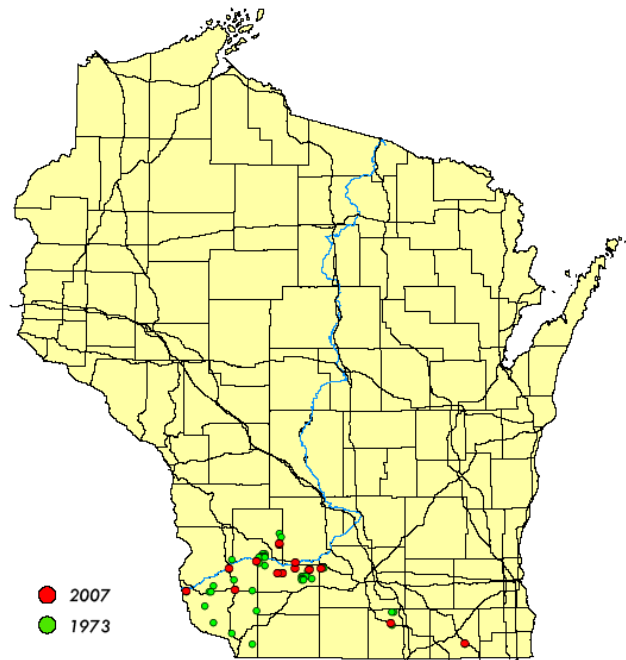


Red admiral, *Vanessa atlanta*

Krista Hamilton DATCP

Periodical cicada (*Magicicada septendecim*) - Emergence of periodical cicadas was first observed along the Rock River north of Janesville on May 25. Localized populations were confirmed in portions of Dane, Grant, Iowa, Richland, Rock, Sauk, and Walworth counties throughout June. Most activity occurred in the deciduous forests along the Wisconsin River south and west of Madison. DATCP historical distribution records noted populations in Columbia, Crawford, Green, Lafayette, Kenosha, and Racine counties, but no new reports were received from these areas. Egg laying was completed by late June and adults were scarce by early July. Damage to young orchard trees and nursery stock was minimal.

Periodical Cicada Populations 2007 and 1973



Wisconsin Department of Agriculture, Trade and Consumer Protection



Post oak grasshopper (*Dendrotettix quercus*) - A number of reports from Adams, Portage and Wood counties were received concerning threatening populations and defoliation by this insect on oaks. Post oak grasshoppers were a serious problem for residents in wooded areas of the state beginning in late May and continuing through June. Outbreaks of this insect are associated with drought conditions much like those which prevailed earlier this summer.

Seed Inspections

Seed field inspection - Seed production field inspections in 2007 totaled 750 acres, including roughly 588 acres of corn (74 fields), 157 acres of soybeans (10 fields), and 5 acres of cucumber seed production (7 fields). For the third year, all inspected corn fields were sampled for *Pantoea stewartii*, the causal agent of Stewart's wilt. *Pantoea*

stewartii was detected in one of 74 fields. Soybean fields were sampled for Anthracnose, bacterial pustule/blight, bacterial tan spot, bean pod mottle virus, brown stem rot, Cercospora blight and leaf spot, frogeye leaf spot, sudden death syndrome, pod and stem blight, southern bean mosaic virus, soybean cyst nematode, tobacco ringspot virus, tomato ringspot virus, and white mold. Four soybean fields in Rock County tested positive for SCN, and one field had trace levels of frogeye leaf spot. Inspection results were negative for all other diseases.

Black Light Trap Summaries

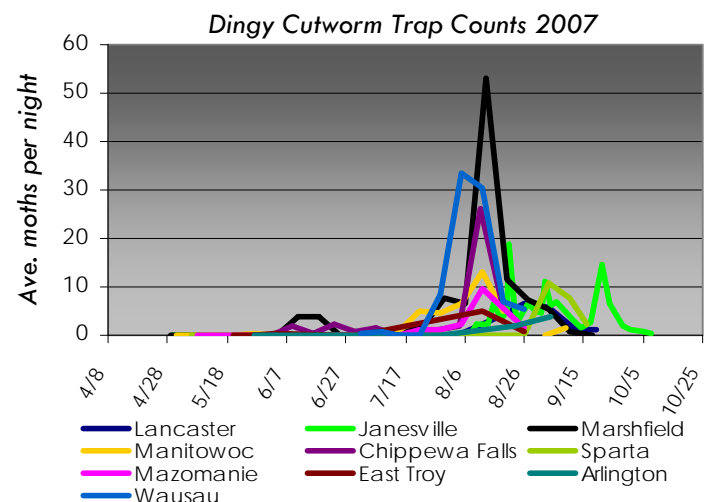
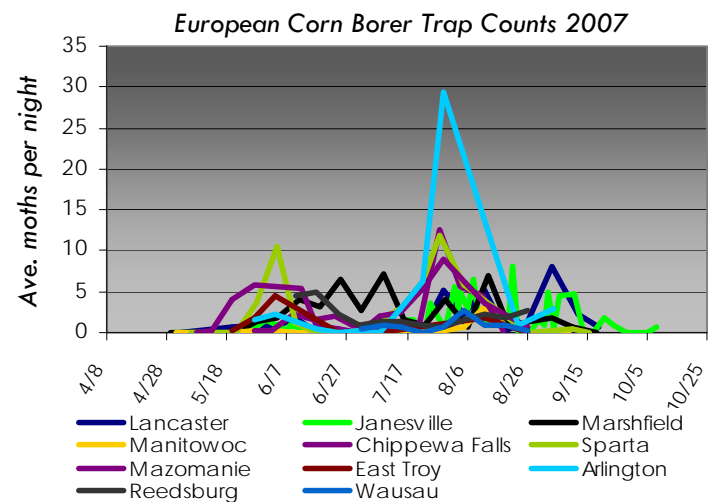
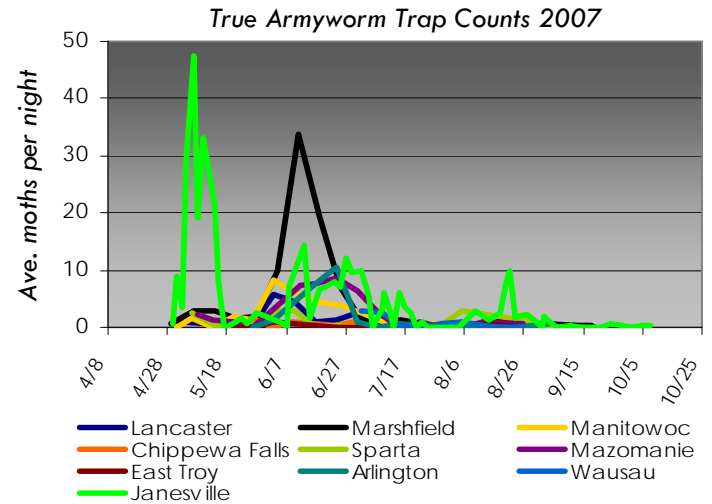
True armyworm - Armyworm moths first appeared in the state on April 23. Black light trap counts peaked early at Janesville between May 4 and 10 with the capture of 256 migrant adults. All other trap locations registered low counts through the final week of May. Pupation began in early June and emergence of first generation adults was noted by June 7. Peak captures were registered as follows: Arlington (June 28), Chippewa Falls (June 13), East Troy (June 7), Lancaster (June 7), Manitowoc (June 7), Marshfield (June 14), Mazomanie (June 28), and Sparta (June 14). A few eastern Monroe County fields developed 70-75% infestations of ½ inch-long larvae by late June, but the second generation of armyworms affected no more than 12% of corn in any other regions surveyed. Larval numbers were not high enough to cause noticeable damage to most field corn this summer.

European corn borer - Pupation of overwintered larvae began by April 30 and the first adults were captured in black light traps on May 12. The first egg masses of the season were noted on May 30 in western Dane County and larval feeding was apparent by June 7. First brood adults were registered in black light traps until July 5, with the peak captures of 8 to 63 moths per week occurring at most sites from May 31 to June 7. Emergence of the second flight of moths began by July 14, and second generation eggs and young larvae were noted around July 20. The highest captures of summer moths occurred between July 26 and August 2.

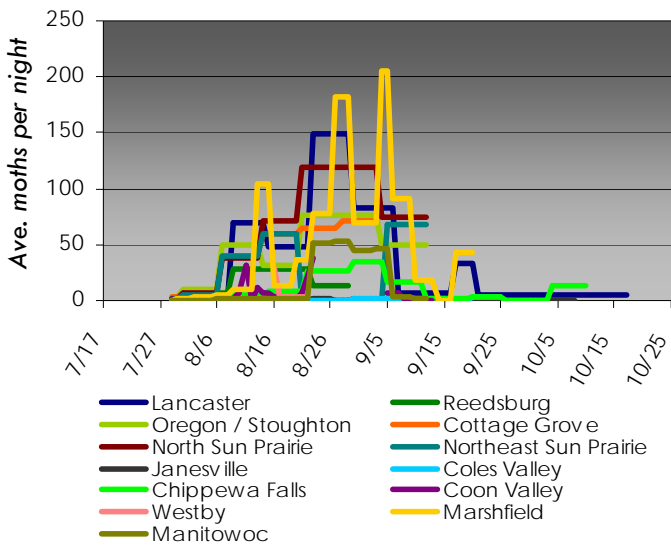
Dingy cutworm - Large numbers of dingy cutworm moths were registered in black light trap collections at Chippewa Falls, East Troy, Marshfield, Manitowoc, Mazomanie, and Wausau during the period of August 3 to 16, and at Arlington, Janesville, Lancaster, and Sparta during the last week of August or first week of September. The highest seasonal capture of 473 moths was registered at Marshfield.

Corn earworm - Migratory adults first appeared at the Lancaster monitoring site in early June and the treatment threshold of five moths per night was quickly surpassed between June 7 and 17. This early flight was exceptional; moth captures were very low throughout June and July at the other 13 trap sites. The first threshold-level captures for the main flight, averaging five moths per night or greater, were reported as follows: Cottage Grove (July 31), Oregon/Stoughton (July 31), N Sun Prairie (July 31),

Reedsburg (August 1), Marshfield (August 6), NE Sun Prairie (August 7), Chippewa Falls (August 8), Lancaster (August 9), Coon Valley (August 10), and Manitowoc (August 28). Numbers at most locations continued to be above-threshold for the remainder of the season. The peak flight period, when counts averaged 0.2 to 206 moths per night, occurred between August 12 and September 9. Economic captures of moths were documented at ten of 14 trap locations in 2007.

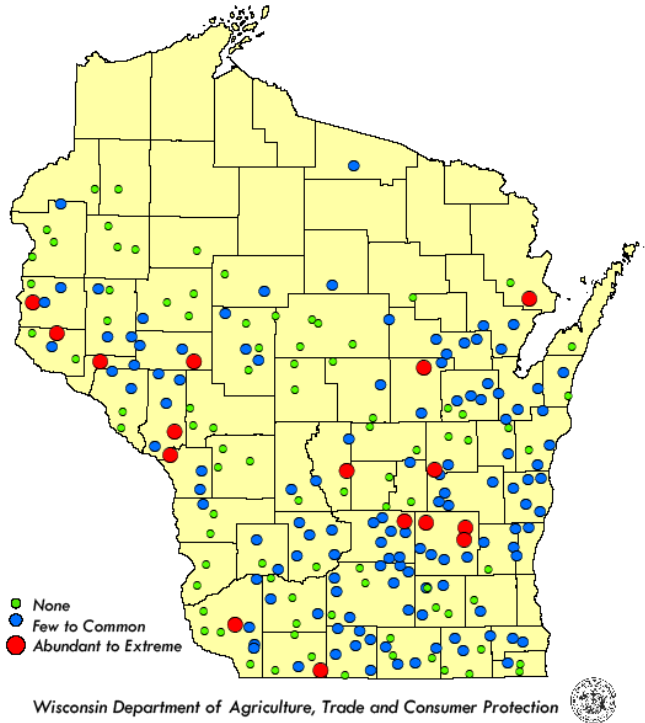


Corn Earworm Pheromone Trap Counts 2007



central and southeast districts, wild proso millet was noted in seven of the nine agricultural districts but occurred most often in the northeast, and woolly cupgrass was most prevalent in the southwest, particularly in Grant County. Results of the survey suggest that some weed management programs were not entirely effective against foxtail this season, but overall weed control was good.

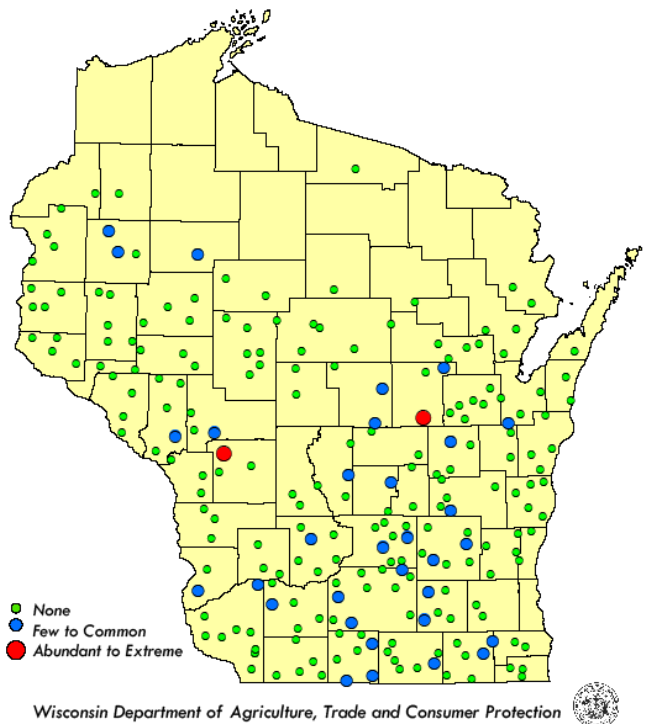
Foxtail Abundance in Corn - Fall 2007



Corn Earworm Peak Nightly Averages 2007

| District | Location | Peak Ave. | Peak Date |
|---------------|------------------|-----------|-----------|
| Southwest | Lancaster | 149 | 08/26/07 |
| | Reedsburg | 29 | 08/12/07 |
| | Coon Valley | 38 | 08/23/07 |
| South Central | Mazomanie | 0.2 | 07/23/07 |
| | Oregon/Stoughton | 77 | 08/28/07 |
| | Cottage Grove | 71 | 08/31/07 |
| | N Sun Prairie | 119 | 08/27/07 |
| Southeast | NE Sun Prairie | 67 | 09/09/07 |
| | Janesville | 2 | 08/25/07 |
| West Central | Coles Valley | 3 | 09/23/07 |
| | Chippewa Falls | 35 | 09/02/07 |
| Central | Marshfield | 206 | 09/05/07 |
| East Central | Manitowoc | 52 | 08/28/07 |

Giant Ragweed Abundance in Corn - Fall 2007

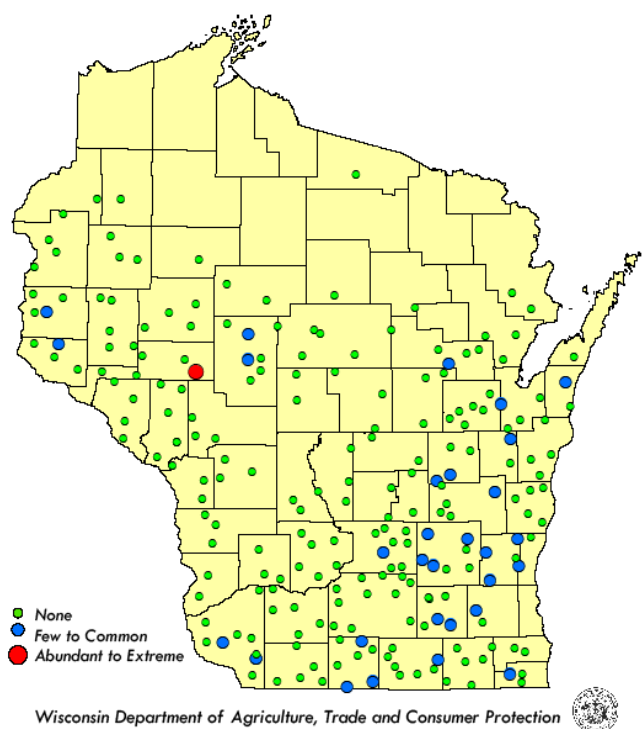


Weeds

Fall weed survey - Estimates of five major weed species were made during fall surveys in corn. INCIDENCE and SEVERITY ratings were assigned for foxtail (*Setaria* spp.), giant ragweed (*Ambrosia trifida*), velvetleaf (*Abutilon theophrasti*), wild proso millet (*Panicum miliaceum*), and woolly cupgrass (*Eriochloa villosa*). The incidence ratings were: 1) none, 2) few, 3) common, 4) abundant, and 5) extreme. The severity ratings were: 1) none, 2) trace, 3) light, 4) moderate, and 5) heavy.

Of the 229 corn fields surveyed, 61% contained foxtail, 15% contained giant ragweed, 14% contained velvetleaf, 5% contained woolly cupgrass, and 4% contained wild proso millet. The foxtail spp. (giant, green and yellow) were the most prevalent of the weed species assessed. Giant ragweed occurred most often in the central and south central districts, velvetleaf was most common in the south

Velvetleaf Abundance in Corn - Fall 2007



the Japanese beetle, Oriental beetle also infests containerized or potted plants; this is its principal means of long-distance travel. Oriental beetle is not a federally quarantined pest so little has been done to stop it from spreading westward. To date, it has been found as far west as Wisconsin and as far south as South Carolina. Indiana recently reported its first find of Oriental beetle in October 2007. Wisconsin has monitored this pest with pheromone traps since 1999. Companies included in the trapping program are those nursery dealers receiving stock from the eastern U.S. In 2007, Oriental beetle was captured in all nine counties trapped, including Brown, Kenosha, Milwaukee, Outagamie, Ozaukee, Racine, Washington, Waukesha, and Winnebago. The highest average counts of 5-10 beetles per trap were obtained in Kenosha and Racine counties.

Phytophthora ramorum - Standard nursery inspections since 2003 have included a search for symptoms of *Phytophthora ramorum*, a fungus-like pathogen that has killed thousands of oaks and tanoaks in the coastal counties of California and Oregon. The most extensive detection program in Wisconsin was conducted in 2005 when 54 nurseries importing stock from these states were surveyed and 300 samples were collected and processed. In 2006 and 2007, inspectors continued surveillance for *P. ramorum*. There has been no indication that it exists in the state.

Nursery, Forest and Landscape

Japanese beetle - One hundred fifty two Japanese beetle traps were set in Wisconsin in 2007. Of these, 114 were positive. Captures were documented in 22 of 32 counties. The highest counts of 51-291 beetles per trap were recorded in Chippewa, Dodge, Grant, Iowa, Kenosha, Ozaukee, and Rock counties, while Brown, Dane, Eau Claire, Jefferson, Manitowoc, Walworth, and Waukesha counties averaged 16-50 beetles per trap. The remaining 18 counties averaged fewer than 15 beetles per trap.

Hosta Virus X (HVX) - This highly infectious hosta virus has become an increasing problem for Wisconsin nursery stock growers and dealers since it was discovered in 2004. The first HVX-infected plants were found at several garden centers in the state that year; the plants originated in the Netherlands and received USDA certification. This season inspectors from all regions of the state submitted hosta samples which tested positive for HVX. Of the 73 samples, 29 from nurseries in Clark, Dane, Douglas Eau Claire, Kenosha, Pierce, Polk, Racine, St. Croix, Walworth, and Washburn counties were confirmed as HVX-positive. The infected cultivars were 'Aureo marginata', 'Gold Standard', 'Golden Tiara', 'Honeybells', 'Janet', 'Krossa Regal', 'Midwest Magic', 'Niagara Falls', 'Pauls Glory', 'So Sweet', 'Sum and Substance', 'Sum of All', and 'Summer Breeze'.

Oriental Beetle - The Oriental beetle (*Exomala orientalis*) is similar to the Japanese beetle in that it feeds on the roots of turf grasses, perennial plants, and nursery stock. Unlike

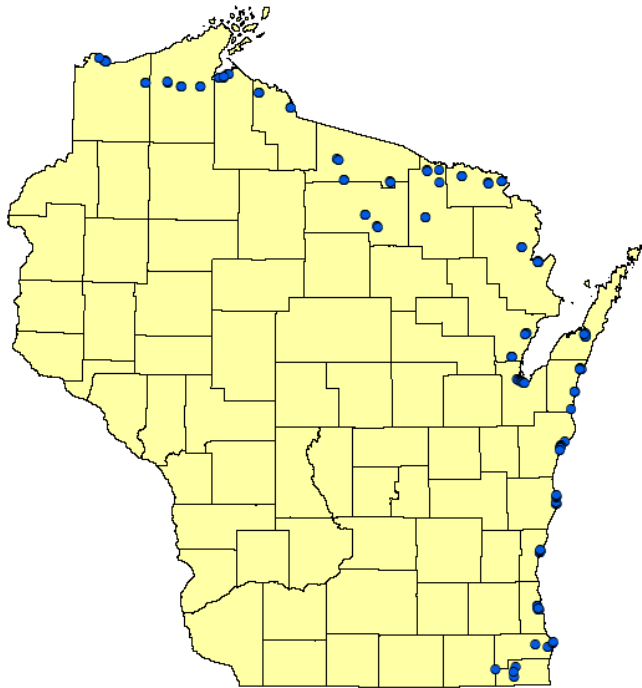
Daylily rust (*Puccinia hemerocallidis*) - This disease was detected for the first time in Wisconsin in 2001 at two sites, a commercial daylily facility and a residence. In subsequent years, daylily rust has been found at garden centers receiving stock from Georgia (2004) and at a single retail outlet in Vilas County (2006). The disease was not detected in any Wisconsin nursery or garden center in 2002, 2003 or 2005. Daylily rust cannot overwinter in Wisconsin, thus its spores enter the state on infested nursery stock or southerly winds. In 2007, this rust was observed on 'Burgundy Velvet' daylily in Racine County and was found at two retail outlets in Milwaukee and Kenosha counties. The infected stock originated from Oklahoma and Illinois, respectively.


European woodwasp (*Sirex noctilio*) - The European woodwasp was first detected in the United States in February 2005 from a Lindgren funnel trap sample collected in Fulton, New York in 2004. Subsequent surveys found this species in Pennsylvania, Vermont, Ontario Province, Canada, and most recently in Michigan. *Sirex* woodwasp has the potential to cause significant mortality of pines and is the most common exotic woodwasp detected at U.S. ports-of-entry (Hoebeke *et al.* 2005). All life stages -- eggs, larvae and pupae -- are easily transported in unprocessed logs, lumber, crates, pallets, and dunnage (Hoebeke *et al.* 2005). Surveys to detect the European woodwasp (*Sirex noctilio*) were conducted in both 2006 and 2007. As part of the 2006 trapping program, 63 Lindgren funnel traps baited with a pine-scented lure were placed in ten eastern counties, including the Ports of Milwaukee and Green Bay. In 2007,

the survey was expanded to include 112 traps in the 19 easternmost and northernmost counties. The regions of Wisconsin closest to the known infestations and with substantial shipping received from Europe and Asia were surveyed. No *Sirex* woodwasp or woodwasp damage has been detected in Wisconsin yet.

Reference: Hoebeke, E.R., D.A. Haugen and R.A. Haack. 2005. *Sirex noctilio*: discovery of a palearctic siricid woodwasp in New York. Newsletter of the Michigan Entomological Society. 50(1&2): 24.

2007 *Sirex* Woodwasp Survey Sites



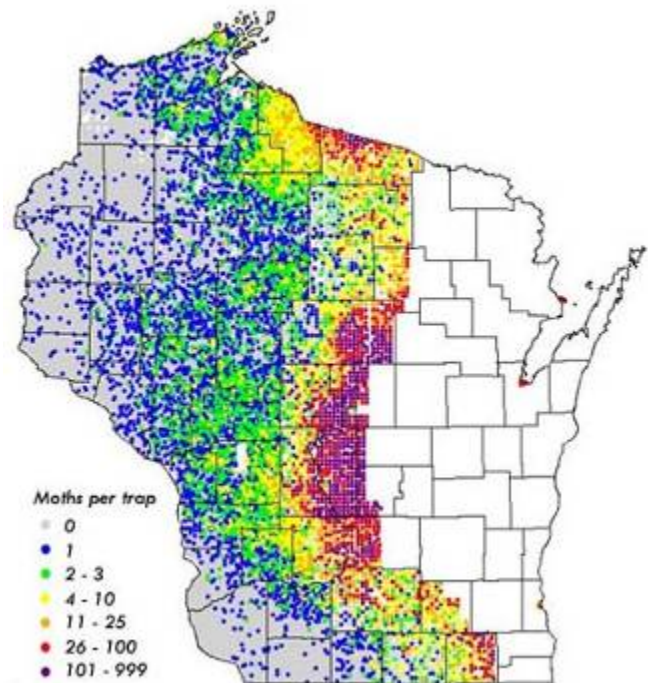
Wisconsin Department of Agriculture, Trade and Consumer Protection 

5. Septoria
6. Cedar quince/hawthorn rust
7. Phyllosticta
8. Blackspot
9. Botrytis
10. Hosta Virus X/tobacco rattle virus

Gypsy Moth

Gypsy moth program - The two major events in the gypsy moth program are field surveys to trap male moths and locate egg masses, and the subsequent application of control treatments to kill the young larvae. In 2007, a total of 30,633 traps were set in 52 counties and 99,671 acres were treated with Btk, NPV, or pheromone flakes. Aerial treatments of Btk totaled 25,229 acres, NPV treatments totaled 3,501 acres, and pheromone flakes to disrupt the male's searching behavior totaled 70,941 acres. All aerial applications were completed by June 30. The program's strategy is to eradicate the most critical populations west of the "Slow-the-Spread (STS) Action Zone" and to slow the spread of the gypsy moth within the "STS Action Zone" to 10 km per year.

Wisconsin Gypsy Moth Catches 2007



Trapping surveys in 52 counties revealed a population increase for the first time in three years. The total number of gypsy moths captured was 295,338 as of November 1, which compares to 121,355 male gypsy moths in 2006, 316,220 in 2005, and 373,656 in 2004. The state record of 703,060 moths was set in 2003. Review of the 2007 male moth trap data suggests that 10 counties -- Barron, Buffalo, Burnett, Douglas, Dunn, Pepin, Pierce, Polk, St. Croix, and Washburn -- have a diversity of gypsy moth populations best characterized as low density/isolated

Top Ten Nursery Pests in 2007

INSECTS

1. Potato leafhopper
2. Ash plant bug
3. Fletcher scale
4. Leafminers
5. Aphids
6. Spider mites, eriophyid mites
7. Bronze birch borer
8. White Pine Weevil
9. Eastern Spruce gall Adelgid
10. Zimmerman pine moth

DISEASES

1. Apple scab
2. Anthracnose
3. Powdery mildew
4. Shothole disease

infestations. This pattern of distribution will make it difficult for the STS algorithm to identify areas to target for treatment in the 2008 spray season. For the first time in a decade, no counties reported a zero moth count.

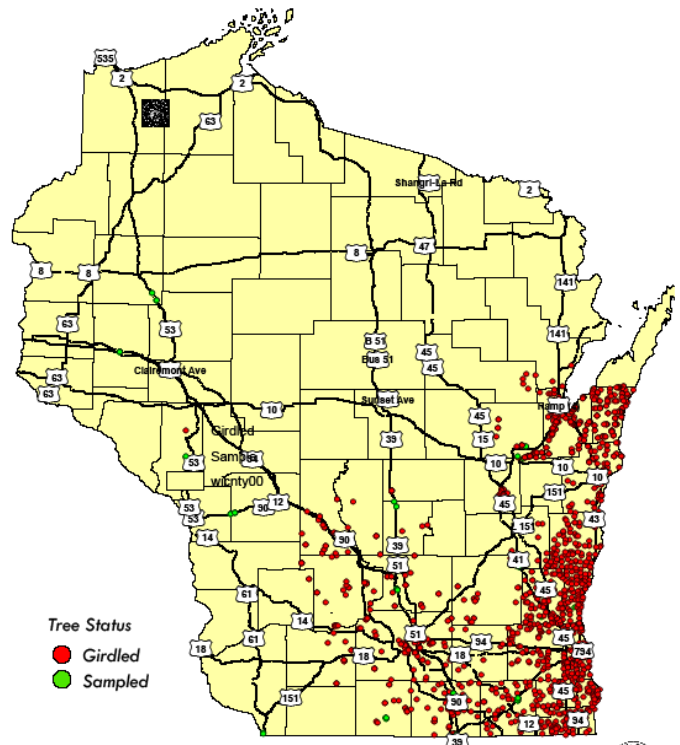
DATCP EAB Detection Trees 2007-2008

Emerald Ash Borer Update

Emerald ash borer (EAB) - The Emerald Ash Borer Program at DATCP has completed the first year of detection efforts and public outreach in the state, without a positive find of EAB. The program, coordinated with concordant work by DNR, APHIS, US Forest Service and UW Extension, included a detection survey in high-risk areas of the state and a multi-faceted education and outreach campaign to raise awareness of the threat posed by EAB and the long-distance movement of firewood.

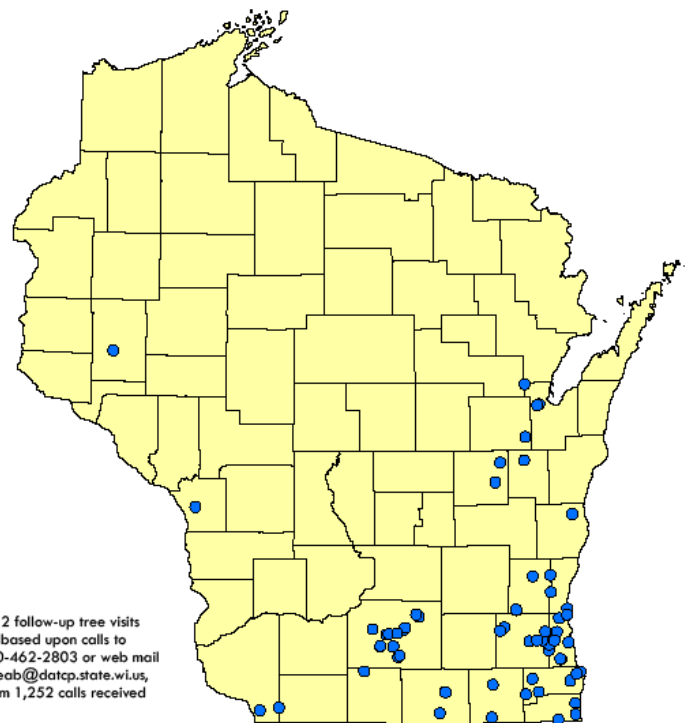
Detection survey work was limited to non-summer months, to avoid cutting trees during the flight period of adult beetles. From December 2006 to May of 2007, the survey component of the program cut and peeled 921 ash trees in search of EAB larvae. The survey also established 1,240 stressed trees to attract beetles, trees which will be peeled beginning this month. The survey used public trees, mostly trees in state or county rights-of-way, or municipal trees provided by city forestry departments. The cooperation with municipal forestry programs has been a crucial component of the detection and preparedness work. As part of ongoing Federal research to improve EAB detection methods, DATCP and DNR set experimental traps at 37 sites in the state.

Public outreach activities included firewood-related mailings to property owners with primary residences in infested states and Illinois residents who hunt deer in Wisconsin, and a statewide radio campaign focusing on firewood movement. In addition, outreach staff attended numerous outdoor-related trade shows and events, distributing emerald ash borer information. The EAB hotline (1-800-462-2803) has received 1,261 calls to date, and DATCP (with assistance from DNR) has conducted 112 site visits in response.



Wisconsin Department of Agriculture, Trade and Consumer Protection

DATCP EAB Program Hotline Response Visual Survey Sites Jan-Oct 2007



Wisconsin Department of Agriculture, Trade and Consumer Protection



Emerald ash borer, *Agrilus planipennis*

www.glendaleohio.org