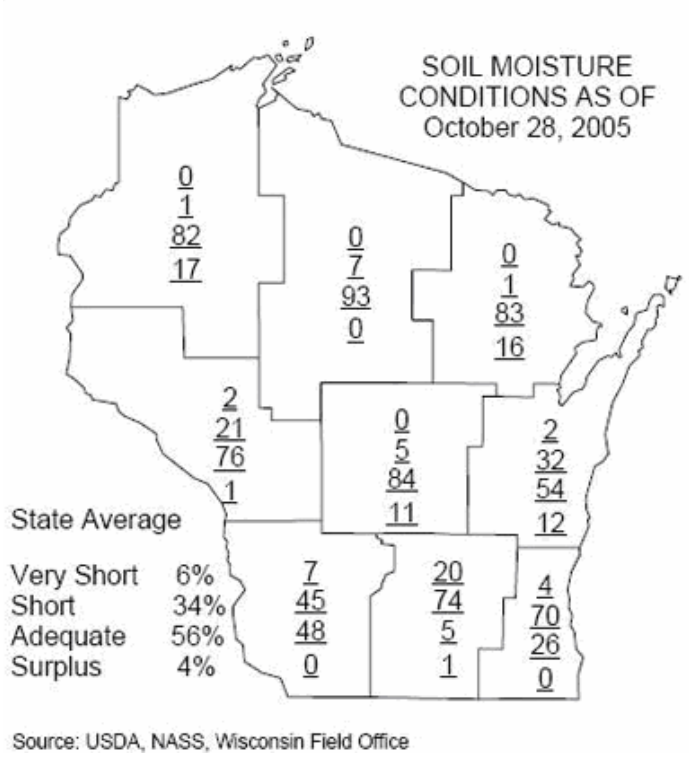
Wisconsin Department of Agriculture, Trade & Consumer Protection

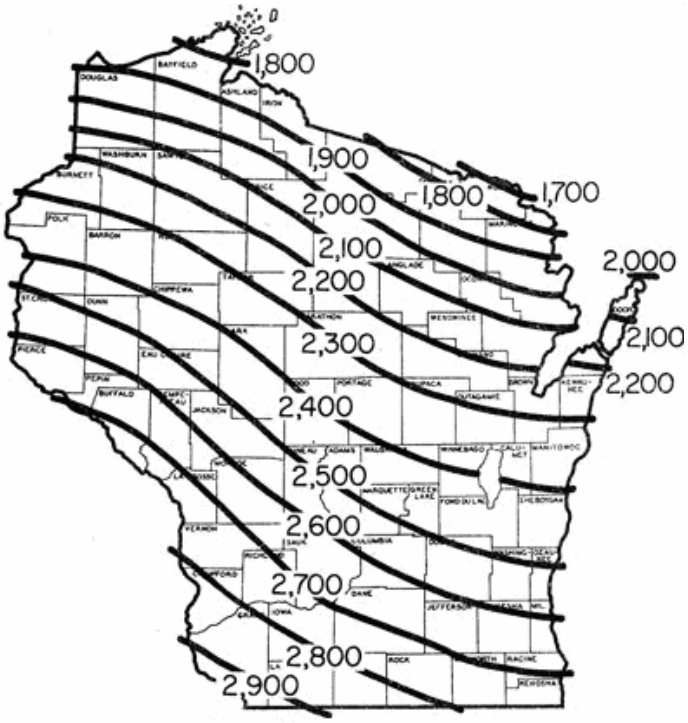
Wisconsin Pest Bulletin

Your weekly source for crop pest news, first alerts & weather information for Wisconsin.

Volume 50 Number 22 Date 11/04/2005 http://pestbulletin.wi.gov



Source: USDA, NASS, Wisconsin Field Office



Historical Growing Degree-Days
Accumulated Since March 1, 2005
(Wisconsin Agricultural Statistics Service)

Weather and Pests

Unusually mild mid-April weather prompted farmers to initiate field activities earlier than normal in 2005, and much planting had been done when spring weather cooled abruptly. A growing season that began on a very promising note turned cold, delaying corn emergence by as long as three weeks in southern counties. Temperatures and weather conditions fluctuated throughout the month of May, finally moderating by the first week of June and urging corn from the ground. Growing conditions and development of resident insects progressed slightly ahead of normal throughout the season, while most migrant insects, including black cutworms, potato leafhoppers, armyworms and earworms, arrived at their usual times. Soybean aphids settled into Wisconsin soybean fields earlier than ever in 2005. The first sighting was made on June 1, about two weeks ahead of previous years.

Perhaps the most influential factor affecting crop development this summer was the drought that began in late June. High temperatures scorched crops and distressed growers throughout July and into early August.

Growing Degree Days through November 3 were:			
Site		Base	Base
	GDD*	48	40
SOUTHWEST			
Dubuque, IA	3264	3100	5226
Lone Rock	3126	3066	5032
SOUTH CENTRAL			
Beloit	3329	3136	5294
Madison	3189	3143	5119
Sullivan	3264	3084	5215
Juneau	3214	3112	5141
SOUTHEAST			
Waukesha	3125	3041	5043
Hartford	3122	3085	5039
Racine	3064	3088	4977
Milwaukee	3020	3018	4924
EAST CENTRAL			
Appleton	2893	2920	4745
Green Bay	2767	2832	4609
CENTRAL			
Big Flats	3036	2960	4908
Hancock	2985	2911	4847
Port Edwards	2920	2871	4755
WEST CENTRAL			
LaCrosse	3267	3127	5248
Eau Claire	2988	3002	4867
NORTHWEST			
Cumberland	2685	2664	4464
Bayfield	2108	2092	3737
NORTH CENTRAL			
Wausau	2657	2657	4400
Medford	2648	2675	4391
NORTHEAST			
Crivitz	2602	2632	4402
Crandon	2439	2428	4103

Precipitation levels through the summer were barely adequate to keep crops growing well in most areas, while many regions were very short of moisture. Despite its intensity, the summer dry spell had little impact on crop yields in the end. Wisconsin farmers found corn, soybean and hay yields to be better than expected.

At the start of November, all winter wheat has been planted and harvest of corn and soybean nearly complete. Frost hit much of the state just over a week ago, putting to rest an unexpectedly fruitful 2005 growing season. *-- Krista Lambrecht*

Alerts

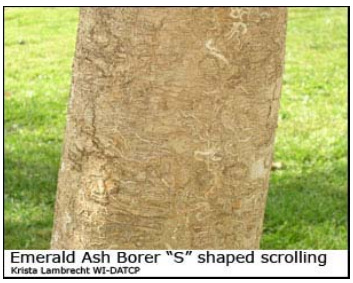
Soybean rust - Despite much hoopla and widespread preparations, soybean rust (*Phakopsora pachyrhizi*) did not appear in Wisconsin in 2005. Neither sentinel plots monitored by UW-Extension, nor field survey efforts by DATCP staff found any evidence of the disease. Spore traps captured a few possible rust spores, setting off some concern, but the samples could not be definitely identified, and scientific discussion is ongoing as to the value of spore trapping as a predictor of disease.

Nationwide, the situation was different. As of the date of this issue of the Pest Bulletin, the disease has been identified in 112 counties in eight states. The range of the detections runs from the southern tip of Florida to Tyrrell County, NC as the northernmost identified infection, and from East Baton Rouge Parish in LA to Hyde County, NC in the east. In addition to being restricted to the Southeastern part of the nation, the disease spread late in the season: of the 112 counties listed, 35 were found in August, 10 in September, 47 in October and 10 in November. Yield loss estimates for areas where the disease occurred are not yet available. Information on the spread of soybean rust is available at http://www.sbrusa.net/.

The absence of soybean rust in Wisconsin in 2005 should not lead to grower complacency. The spread of soybean rust across much of the South this year increases the chances of soybean rust overwintering over a greater area, and thus of spreading more rapidly in the spring of 2006. Much remains to be determined about this new disease, and growers should continue to be alert to reports from sentinel plots and forecasting systems.

The USDA has announced that it will continue to support monitoring, modeling and forecasting efforts for 2006. Researchers, regulators and crop protection workers are gathering in Nashville later this month to discuss strategies for the future. Proceedings of the National Soybean Rust Symposium will be posted soon after the meeting at: http://www.plantmanagementnetwork.org/infocenter/topic/soybeanrust/


EAB D-shaped exit hole
UW Entomology


Emerald Ash Borer "S" shaped scrolling
Krista Lambrecht WI-DATCP

Emerald ash borer (*Agrilus planipennis* Fairmaire, EAB) - This devastating pest of ash trees has not been found in Wisconsin; however, foresters and entomologists believe it is only a matter of time before EAB is detected in our state, especially given the close proximity of Michigan and the growing number of infested areas there. Southeastern Michigan is heavily infested with EAB, and additional spot infestations have been found in the Upper Peninsula. Nine Ohio Cos. are infested with EAB, in addition to two Indiana Cos.

Because EAB is not been a significant pest in its native habitat (northern China, eastern Russia, North Korea, South Korea and Japan), it has not been well researched. As a result, little information on the biology, life cycle and habits of EAB was available prior to its detection in Michigan in 2002. EAB is known to attack all species of ash, and only ash. It may infest and kill any ash tree, regardless of size or health. Wisconsin ash species include black ash, green ash, and white ash and the endangered blue ash.

While limiting the natural spread of EAB is difficult, preventing artificial spread presents an even greater challenge. Firewood, nursery stock and logs may harbor and transmit EAB infestations. In fact, the movement of firewood from infested areas has been the primary means of spreading EAB.

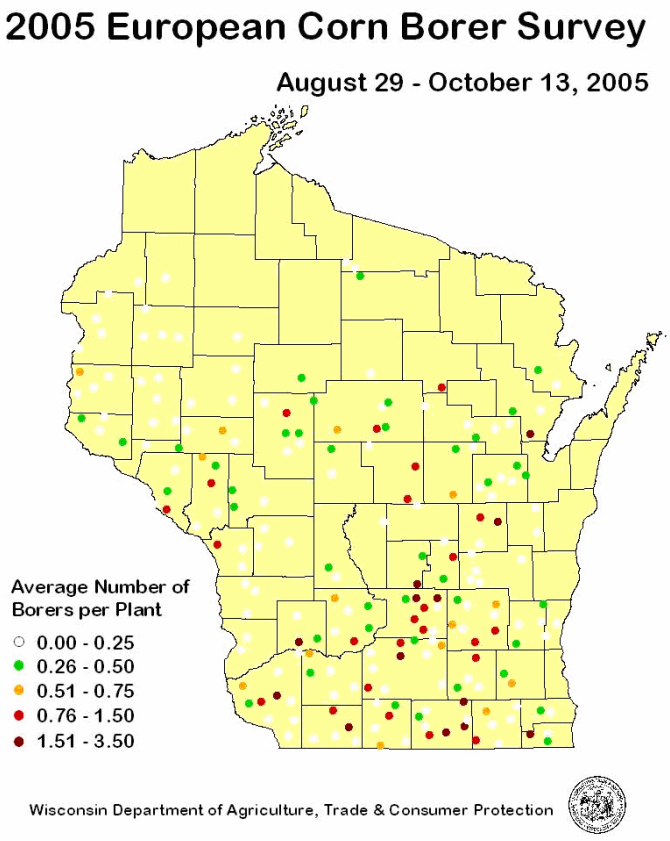
Surveying for EAB also presents unique challenges. Once a tree exhibits symptoms, it is likely to have been infested for about four years. Early detection is essential if reasonable control is to be achieved once EAB is found in Wisconsin. At present, the survey method is to girdle a supposedly uninfested tree, allow it to stand for a full year, then cut and strip the bark to check for infestation by EAB. (The theory behind the method is that the dying tree becomes particularly attractive to EAB.) The current approach to containing an infestation is to delimit the boundaries, mark a ½ mile radius around the most outlying infested trees, and remove all ash trees within the radius. These survey and control techniques are time consuming and labor intensive, but these are only reliable way to monitor for the presence of EAB and to control its spread.

Wisconsin has approximately 628 million ash trees that are at risk. An estimated 30% of all Wisconsin urban street trees are ash. DATCP's goal is to protect the state's ash resources

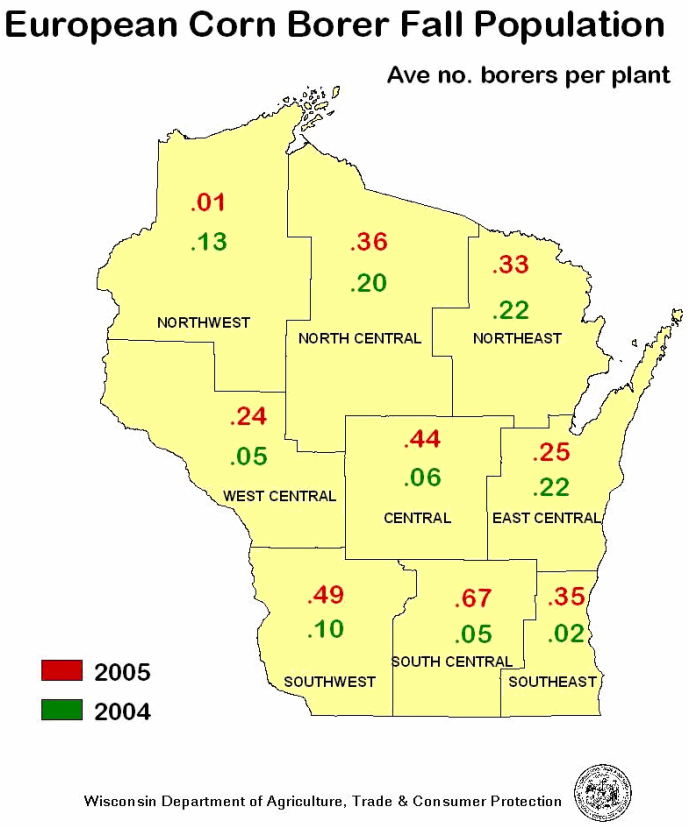
by detecting EAB as quickly as possible and eradicating it before it can spread. Readers are urged to avoid moving firewood. If you are aware of ash trees with EAB symptoms, please call **1-800-462-2803**, the Wisconsin Pest Hotline. -- *Melody Walker*.

Corn

European corn borer - The annual fall survey showed the average European corn borer population in the state to be 0.40 borer per plant (40 borers per 100 plants). This compares to 0.10 in 2004 and a 50-year average of 0.49. Increases occurred in every district except the northwest, a probable outcome given last fall's record-low population. The most substantial increases were noted in the southwest, south central and southeast districts where populations rose from 0.10 in 2004 to 0.49; 0.05 in 2004 to 0.67; and 0.02 in 2004 to 0.35, respectively. Despite overall increases, the district averages recorded in 2005 are considered to be low. In fact, an overwhelming majority of the corn fields visited in fall had only minor levels of second generation larvae. Approximately 87% of the corn fields surveyed had larval populations below 1.0 borer per plant (182 of 210 fields), while just 13% of the corn fields had high larval populations, ranging from 1.0-3.5 borers per plant (28 of 210). Corn borer populations of 1.0 borer per plant are considered high, having been shown to reduce yield by as much as 5% during the first generation, and 2.5% by the second generation.

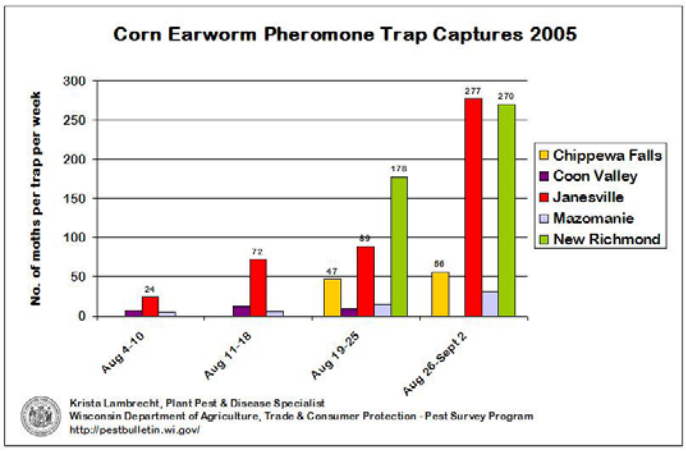


A statewide average of 0.40 borer per plant suggests a light first flight of corn borer moths should be anticipated again next spring. What follows the first flight, an increase or decrease in corn borer densities, depends on factors such as activity of natural enemies and weather conditions during May and June. Scroll down the page for summary maps of the 2005 European corn borer survey.*--Krista Lambrecht*

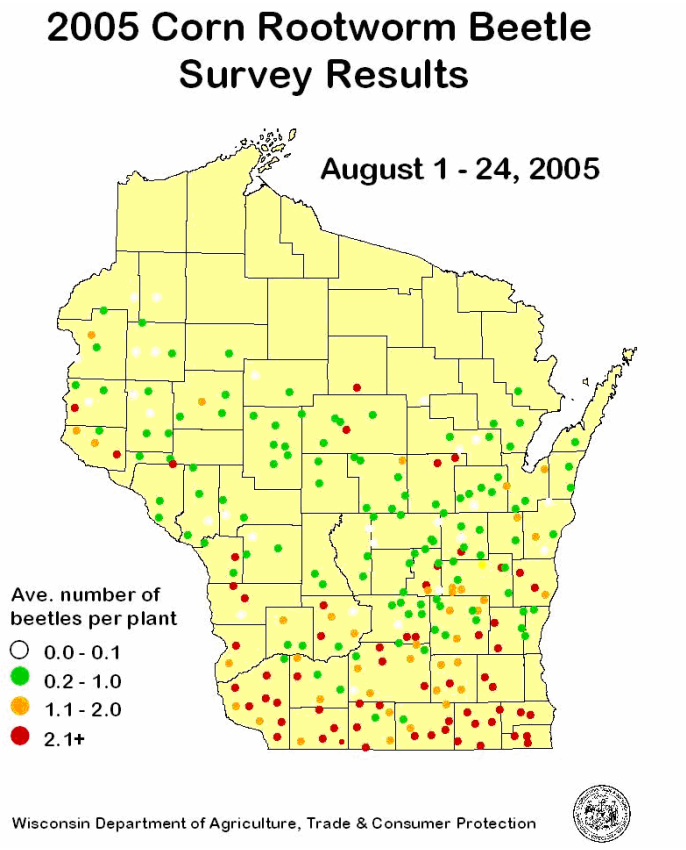


Corn rootworm - The first adults were observed during the week of July 8 in Walworth and Dane Co. corn fields, and by July 22, both beetles and silk feeding in drought-stressed fields had grown common. Damage in the form of lodged plants first became evident about July 25 following severe thunderstorms, and might have been noticed earlier, if not for the insufficient rainfall and absence of storm activity throughout July. The annual corn rootworm beetle survey began during the first week of August, with preliminary findings indicating heavy beetle populations in the southern half of the state. The survey, timed to correspond with peak adult emergence during the first two weeks of August, found high adult rootworm populations across much of the state, with the exception of the north central and northeast districts. The statewide average of 1.6 beetles per plant more than doubled the 0.75 beetle per plant threshold that entomologists consider to indicate a potential for corn rootworm problems in continuous corn the following year. Corn rootworm beetle populations were particularly high in the southwest and southeast districts, where averages of 3.2 and 3.8 beetles per plant were recorded, respectively. In addition, the beetle survey showed the western species, Diabrotica virgifera LeConte, to be the dominant species statewide, comprising 58% of all rootworms present. Emergence of rootworm adults was essentially complete by August 19, although weather conditions continued to favor rootworm activity into early October. A summary map showing results of the 2005 corn rootworm beetle survey is provided below. SUMMARY INFORMATION ON THE VARIANT WESTERN CORN ROOTWORM, AN EMERGING CONCERN, IS AVAILABLE ON THE FINAL PAGE OF THIS WISCONSIN PEST BULLETIN ISSUE.

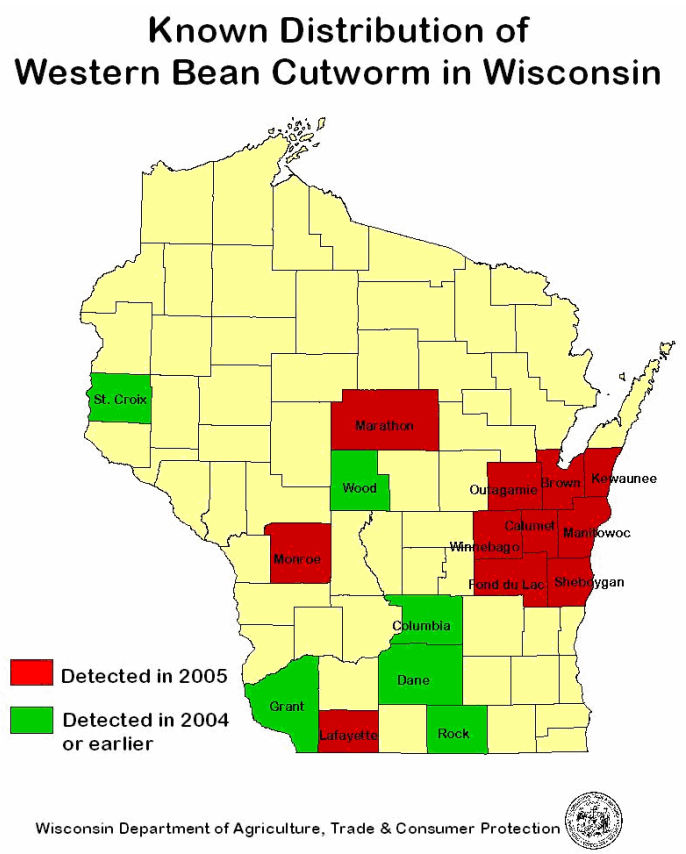
Corn earworm - The earliest alert to approaching earworms came on August 5 from Illinois, where local cooperators reported nightly pheromone trap catches of 100-200 moths. Corn earworms wasted no time migrating northward, arriving in Wisconsin just days later. A capture of 344 during the week of August 8 moths at New Richmond in St. Croix Co. marked the start of the significant flight of corn earworm moths. By August 19, significant flights were registered at

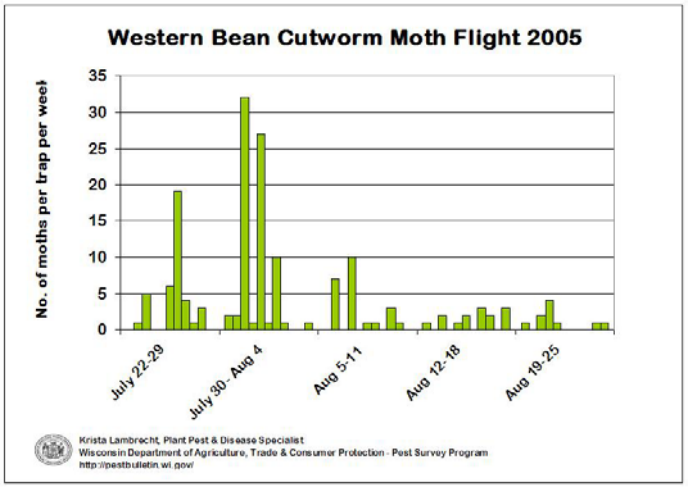


Arlington, Janesville, New Richmond and Stoughton pheromone trapping sites. The major moth flight gained momentum the following week, and the highest captures of 2005 were documented during the first week of September. Moths continued to drift into traps through mid-September, but no sizeable moths counts were reported after the second week. -- *Krista Lambrecht*



Western bean cutworm (WBCW) - During the 2005 growing season Wisconsin's first coordinated WBCW trapping network was established to track the emergence of moths and to monitor subsequent flight activity. WBCW, a new pest of corn in the Midwest, has a reputation of causing 30-40% yield loss in its native western cornbelt states. Pheromone traps were placed at 14 southern and east central sites during the week of July 15, and within a week's time captures began to escalate. Egg laying in corn began by mid-July, either the week or July 15 or July 22, although DATCP specialists found no evidence of WBCW in corn fields during general surveys. Moth flight peaked by August 4. The following week fewer and fewer moths were registered at trapping sites, and no WBCW moths were trapped after August 25. The highest WBCW moth captures of 2005 were recorded between July 30 and August 4 (see chart below).





In 2005 WBCW was recorded for the first time in Calumet, Kewaunee, Manitowoc, Outagamie and Shawano Cos.. Interestingly, the WBCW moth counts registered in

Wisconsin pheromone traps were not comparable to those recorded in neighboring states. The highest cumulative capture of WBCW this season was 38 moths at the McFarland site in southern Dane Co.; treatment guidelines for WBCW are based on a cumulative capture of 700-1000 moths. Although WBCW now appears to have a widespread distribution in Wisconsin, low localized populations indicate the risk of significant western bean cutworm damage is low, for now. -- *Krista Lambrecht*

True armyworm - There was very little advance indication that severe armyworm problems would arise in 2005. Armyworm outbreaks are generally favored when conditions are cool and wet, precisely the opposite of conditions in 2005. In addition, most black light traps had registered relatively few moths in June and July. The earliest news of armyworm troubles came during the week of July 29 from Monroe Co. Extension Agent Bill Halfman, who reported armyworms had decimated a 48-acre corn field on the Monroe/Vernon Co. line. Scattered problem areas were detected in Burnett, Polk, Rusk, Sawyer and Washburn Cos. the same week, signaling that problems were not limited to the west central district. The march of armyworm caterpillars continued during the week of August 5, as more ravaged corn fields were detected in more counties. Alarming levels of defoliation were spotted in Crawford, Chippewa, Pierce and Marathon Co. fields where corn leaves were stripped to the midrib on 50-100% of the stalks. In many cases, the armyworm larvae were nearly mature by the time the infestation was noticed, thus, there was little for farmers to do. Moderate moth captures continued at during the last week of August at Northwest black light trapping sites, suggesting armyworm activity did not fully subside until early September. Several variables contributed the outbreaks of 2005, including widespread weed problems and late herbicide applications that prompted the migration of armyworms from grassy fields to corn plants following weed control. Fortunately, only one of the generations of armyworm was destructive this summer.

Forages

Alfalfa weevil - In general, alfalfa weevil did not pose a major threat to hay fields in the 2005 growing season. The fast build-up of larval populations began around May 13 in south central and southwest counties, and peak populations in first crop hay were reached by May 27. Most threatening weevil populations were eliminated by the timely harvest of first crop hay. The only fields in the southern Wisconsin to face damaging levels of alfalfa weevil larvae were those not harvested by early June. Carryover of larvae from the first crop was not a major issue, and by June 24 alfalfa weevils were no longer a risk to second crop alfalfa.

Potato leafhopper - The annual arrival of potato leafhopper migrants occurred during the week of May 20, with the first detection of adult leafhopper in south central alfalfa fields. Nymph production was noted by June 7 in Dane Co., but leafhopper pressure did not intensify for another two weeks. By June 24, populations in 12-18 inch Jefferson, Dane and Dodge Co. fields jumped above-threshold to 3.5 per sweep, while counts in Marathon, Portage and Shawano Cos. were slightly lower, ranging from 0.5-2 per sweep.

Potato leafhoppers flourished under hot, humid July conditions. A build-up of adults and nymphs progressed throughout the month, and peaked around July 22 at levels of 14 leafhoppers per sweep in south central fields. Reproduction slowed by August 5, giving stressed third crop hay fields a brief opportunity to recover. Southern fields looked much improved after small amounts of rainfall were received. By August 19, counts of potato leafhoppers in south central and southwest counties averaged about 2.5-3 per sweep. Only low populations of potato leafhoppers persisted into September. -- *Krista Lambrecht*

Alfalfa blotch leafminer (*Agromyza frontella* Rondani) - Conditions this season favored the development of remarkably high populations in southern first crop alfalfa fields. Counts of 30-40 flies per 100 sweeps were first netted in fields in mid-May. By June 4, numerous Columbia, Dodge and Jefferson Co. fields were heavily spotted with white, comma-shaped mines and countless tiny pinholes. Dodge Co. fields were most heavily infested, with an average of 71% of plants with mines or pinholes and up to 12 mines per plant. Columbia Co. fields were somewhat less afflicted, with an average of 39% of plants showing leafmines and pinholes. In Sauk and Richland Cos., an estimated 60% of the plants were infested with at least one mine. Reports of heavy mining near Platteville and Lancaster were also received, and in Chippewa and Outagamie Co. fields, 30-40% infestations were detected. Observable levels of leaf mining declined after mid-June and alfalfa blotch leafminer was relatively inconspicuous for the remainder of the season.

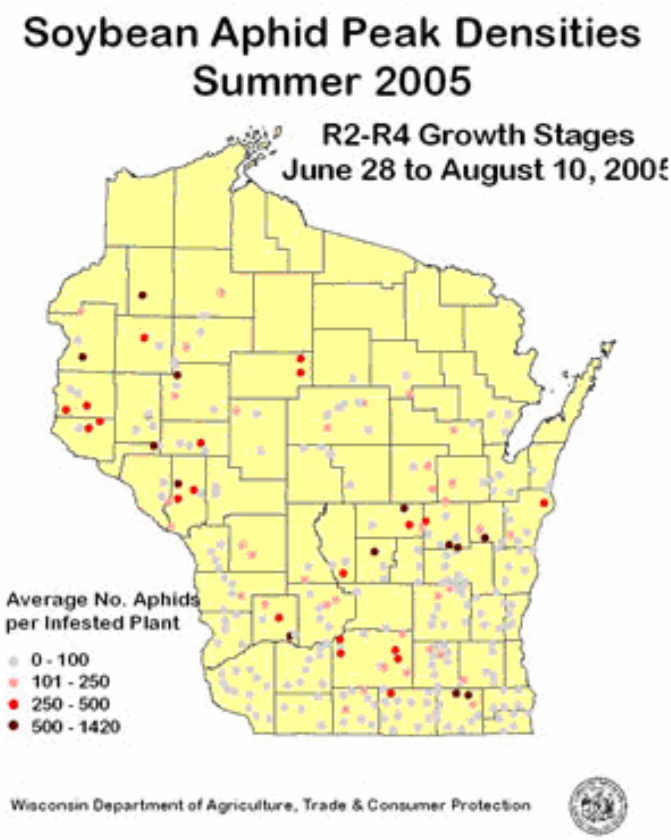
Soybean Insect Surveys

Soybean aphid - The first soybean aphids of 2005 were detected on June 1 at the West Madison research station, marking the earliest finding of the soybean aphid since its discovery in Wisconsin in 2000. By June 24, aphids were present at very low levels in nearly all fields statewide. Colonies were just beginning to establish in northern counties, and densities averaged fewer than 20 aphids per plant. In southern counties aphid densities were escalating, but no fields had reached the 250 aphids per plant threshold.

Aphid pressure intensified considerably during the week of July 15, with scattered R2-R3 fields supporting densities of 1,000-1,400 aphids per plant. By the last week of July, populations exceeding 250 aphids per plant were common, and infestations affecting 90-100% of the plants had become the standard in southern fields approaching R4. The most effective treatment period in the south occurred during a two week window, from July 17-31. Fields in the north benefited from sprays during the first two weeks of August. Soybean aphid reproduction leveled off during the week of August 5, and by August 12, dense populations persisted in only a limited number of fields.

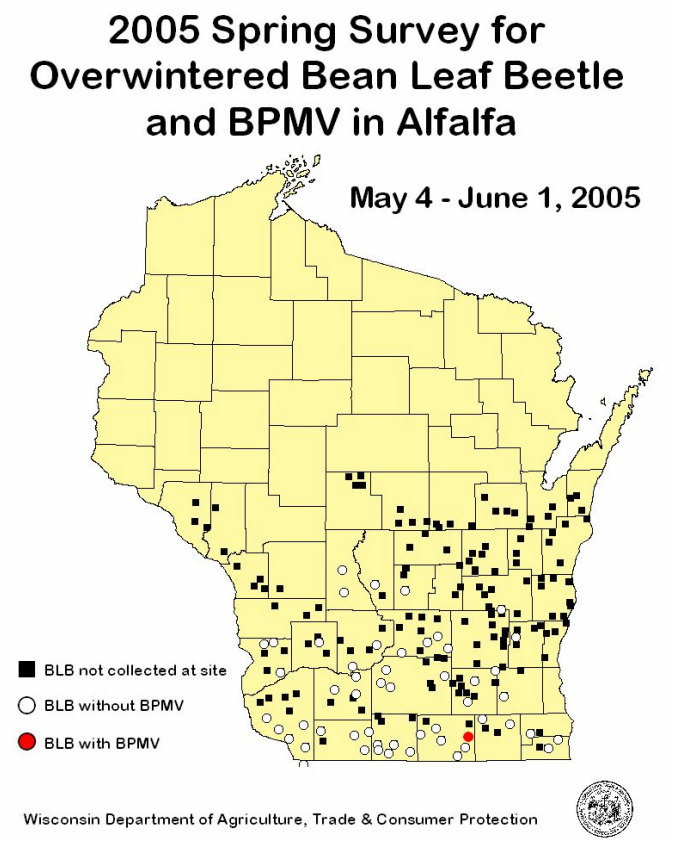
The 2005 soybean aphid survey, conducted from June 28 to August 22, found the statewide average number of aphids per infested plant increased to 120 in 2005, compared to 14 in 2004, and far below the average of 770 aphids per infested plant in 2003. Soybean aphids were detected in all but five of the 274 fields surveyed this season (98%), an increase from 73% in 2004, and a slight decrease from 100% in 2003. A total of 88% of the survey sites had noneconomic aphid levels, while 34 of the 274 (12%) sites had peak aphid densities above the 250 aphid per plant threshold. In

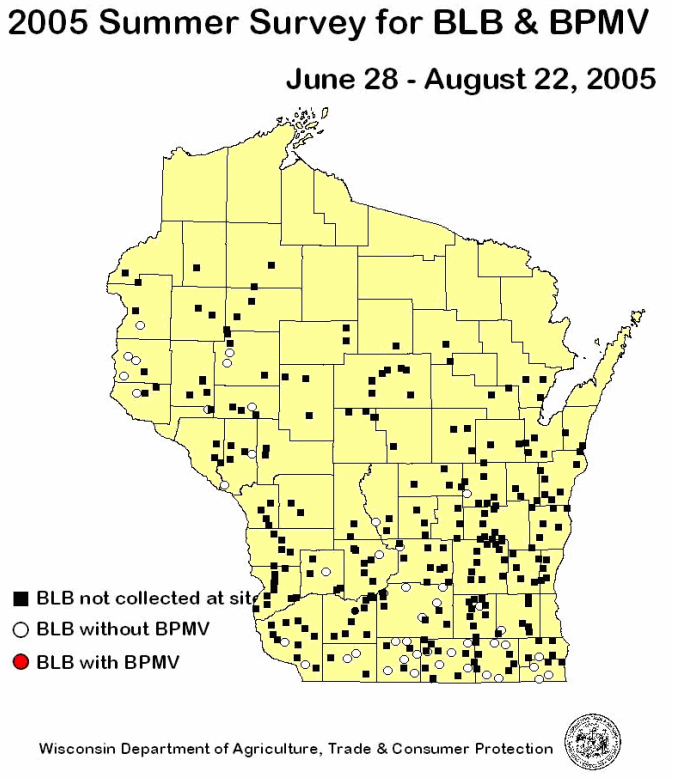
comparison to previous years, the peak aphid densities recorded in 2005 were moderate. Peak densities were considerably higher than in 2004, but significantly lower on average than those encountered in 2003 and in preceding years. High temperatures through the months of July and early August (>F) helped to limit aphid population growth in 2005. Scroll°90 down to see results of the 2005 summer soybean aphid survey. -- *Krista Lambrecht*



Bean leaf beetle - The spring survey for overwintered bean leaf beetles began in Green Co. on May 4, and advanced as far as Adams, Juneau and Marquette Cos. by June 1. The survey found overwintered beetles in 51 of 204 (25%) southern and central alfalfa fields visited. Laboratory analyses of the beetles collected from the 51 sites found bean pod mottle virus (BPMV) in a beetles from a single field in Rock Co., while bean leaf beetles from the other 50 fields tested negative for BPMV. In view of the absence of BPMV in soybean fields in 2004, DATCP specialists anticipated few, if any, overwintered beetles would test positive for BPMV in the spring of 2005. In effect, there was no detectable BPMV inoculum for beetles to pick up from soybeans and retain throughout the winter months.

A summer follow-up survey of first generation bean leaf beetles, conducted between June 28 and August 22, found bean leaf beetles at 47 of 276 survey sites (17%). Individual beetles were tested for BPMV using the same method used to test beetles from the spring survey. No summer bean leaf beetles tested positive for BPMV. In addition to the bean leaf beetles, soybean leaflets from each of the 276 fields were collected tested for BPMV. No BPMV was found in any of the 276 soybean fields sampled. Survey findings suggest early-season BPMV transmission by bean leaf beetles should not be an issue in 2006. -- *Krista Lambrecht*





Two-spotted spider mite - The combination of dry weather and stressed plants during the 2005 growing season created optimal conditions for an outbreak of two-spotted spider mites. This arthropod thrived under drought conditions, and reached "epidemic levels" in numerous southern, central and east central soybean fields by mid-July. Two-spotted spider mite problems were not limited to soybean fields. Heavy mite populations developed in Central Sands snap beans,

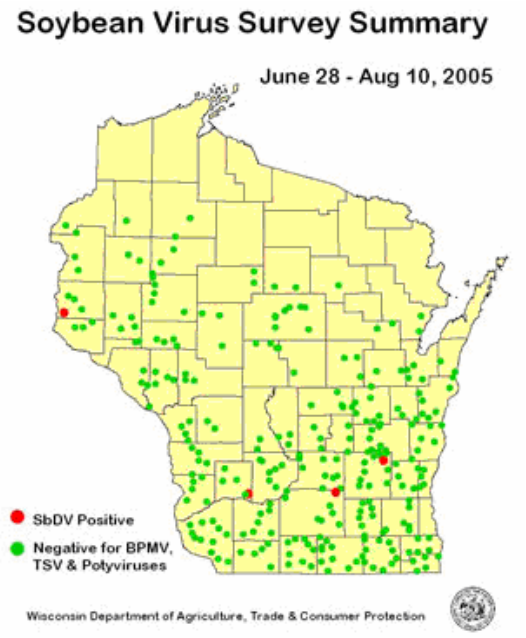
particularly in the non-irrigated fields. Routine scouting for spider mites was strongly advised through mid-August. In several instances multiple miticide applications were needed to regulate mite levels in besieged fields.

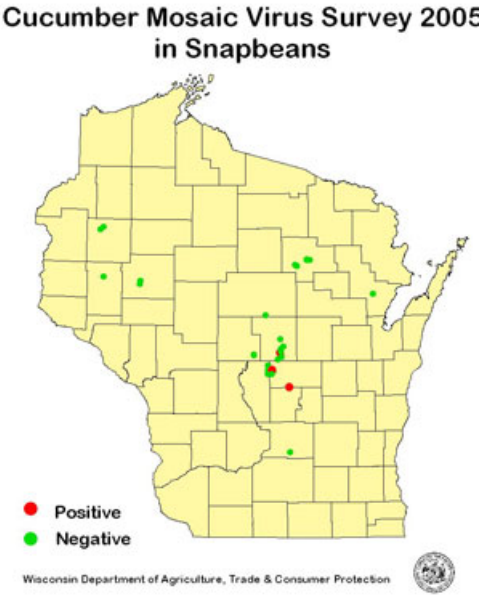
Soybean Virus Survey Results

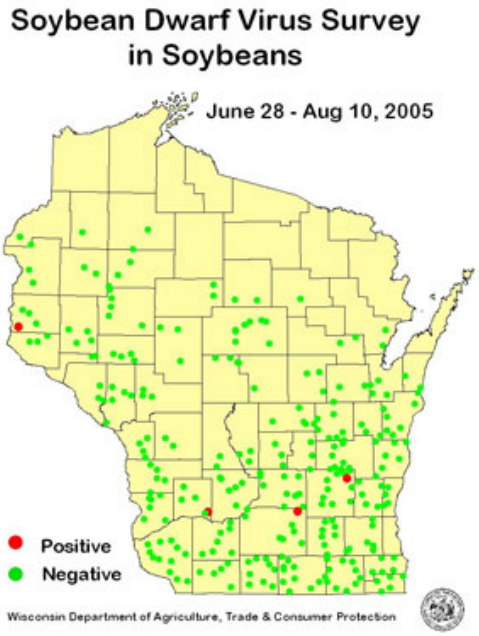
Soybean viruses - 2005 marked the third year that DATCP has conducted a large-scale, systematic statewide survey for soybean viruses. This year, samples were screened for soybean dwarf virus (SbDV)(a recently-detected aphid-vectored virus), bean pod mottle virus (BPMV) (vectored by the bean leaf beetle), tobacco streak virus (TSV) (vectored by thrips), and a potyvirus screen capable of detecting bean common mosaic virus, bean yellow mosaic virus, and soybean mosaic virus, most of which are aphid-vectored. Samples were collected from 276 fields in 59 counties, weighted by soybean acreage. Leaves collected were the uppermost completely unfurled trifoliate from 10 plants at four sites in each field, bulked by field and stored on ice until frozen in the laboratory. In addition to leaf collection, data was gathered about soybean aphid numbers, bean leaf beetle defoliation and any possible soybean rust infection.<BR
In the laboratory, samples were tested by Enzyme-Linked Immunosorbent Assay (ELISA) for the target viruses. Results indicated a surprisingly low level of virus infection, consisting of only four fields positive for virus, and those four positive for only SbDV. Reasons for the low levels of virus detection are the subject of much discussion.

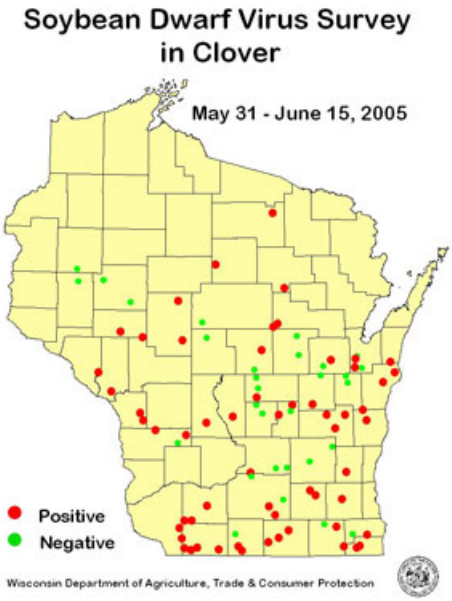
A corollary survey of snap beans detected cucumber mosaic virus in three of 33 fields tested.

A spring survey of red clover, the alternate host of SbDV, conducted to estimate the amount of overwintering virus, found 61 clover samples positive for the virus, of 92 samples collected. It appears that the virus is widespread, but either the strain present in Wisconsin does not readily infect soybeans, or an efficient vector is not present. Work with SbDV will continue in 2006.--*Adrian Barta*





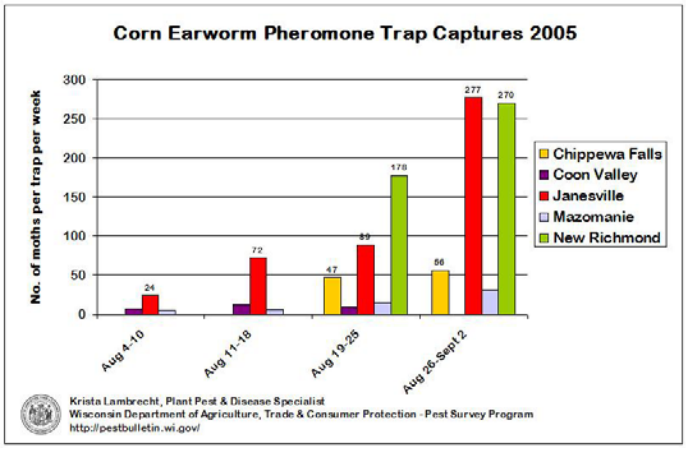




Vegetables

Cabbage Looper Trapping Program - The objective of the newly-established Cabbage Looper Trapping Program was to alert Wisconsin growers to the peak flights of cabbage loopers and to indicate appropriate times to scout for larvae. Vegetable growers located near Cedarburg in Ozaukee Co., Hancock in Waushara Co., Madison in Dane Co., and Viroqua in Vernon Co., monitored cabbage looper pheromone traps from June through September. In addition, UW-Extension and DATCP staff monitored traps at the Arlington Research Station in Columbia Co., and the Lancaster Research Station in Grant Co.

The first flight noted by cooperators took place between June 30 and July 7, with the capture of 95 cabbage looper moths at Lancaster, three moths at Madison, and an average of 5.5 moths per trap at Cedarburg. The following week, from July 7 through July 14, the first captures of 14 and 56 moths were registered at Arlington and Hancock, respectively, and peak flight of the first generation was recorded at Cedarburg. Peak flight was reached at Arlington and Hancock during the week of July 14, with captures of 42 and 91 moths, respectively. Moth numbers declined during the next two weeks, then began to build again at sites from August 4-11, with 27 moths captured at Arlington, 13 moths at Hancock, 111 moths at Lancaster, and 201 moths at Lancaster the following week (August 11-18), marking the peak of the second flight (see the cabbage looper chart below).



In 2004, Cabbage Looper Trapping Program participants deployed Scentry traps. In 2005, cooperators who were new to the program (at Cedarburg, Viroqua, and Madison) were provided with cardboard wing traps (Trece Pherocon II Delta traps), the idea being to transition all participants from Scentry traps to cardboard wing traps in the next few years. Cardboard wing traps were thought to be easier to ship, handle and store, and would be less expensive than Scentry traps. However, comparison shows that Scentry traps may be more effective. After testing out a Scentry trap midway through the season, the Ozaukee Co. cooperator preferred the Scentry trap over the cardboard trap because it caught more moths. Also, at the Lancaster Ag Research Station in Grant Co., a large flight of moths was captured in the Scentry trap, and a cardboard trap 50 feet away only caught three moths. Based on the results from these two locations, Scentry traps are recommended for future cabbage looper trapping. DATCP thanks the growers were participated in this program . We appreciate your interest and assistance as we work together to protect agriculture in Wisconsin.

Swede midge - DATCP staff conducted a first-time survey for Swede Midge from June 21 to August 24, 2005. Swede midge is an exotic, highly injurious pest of cruciferous crops that was first identified in the western hemisphere in Canada in 2001, and more recently in New York in 2004. Feeding by Swede midge larvae distorts growing tips, resulting in multiple heads or no heads, swollen young leaves, and crinkled stems with brown scarring. Fully-grown larvae are 3-4 mm in length and become bright yellow when mature. Adults look mosquito-like, and are very difficult to distinguish from other midge species.


Swede midge trap
R. Klien-Koth WI-DATCP

Survey sites in 2005 included two organic vegetable farms, two conventional vegetable farms, one commercial kraut farm, and one roadside location. Traps were monitored at six locations: Evansville in Rock Co., Mt. Horeb in Dane Co., Franksville in Racine Co., Cedarburg in Ozaukee Co., Hancock in Waushara Co., and New London in Outagamie Co. At each site one delta trap, Jackson-type, was suspended from a stake 30 cm above the ground. Pheromone lures were attached inside the trap to attract male Swede midges. Lures were changed every two weeks at the Rock, Racine, Ozaukee, and Waushara Co. sites. The Outagamie and Dane Co. traps and lures were changed less often, approximately every four weeks. A sticky trap liner was placed in each trap and changed at the same time interval as the lure. The trap liners were removed and carefully examined under a dissecting microscope for Swede midge; no Swede midge suspects were found in 2005.

The Swede Midge survey was funded by the USDA-CAPS (Cooperative Agricultural Pest Survey) Program, which made pheromone lures available to several states. Survey results from Wisconsin and other states can be found at the CAPS website at http://ceris.purdue.edu/napis/pests/swmdg/imap/swmdgall.html

Forest and Landscape

Tobacco rattle virus (TRV) - Much controversy has surrounded the testing of *Brunnera* plants this past year. ELISA tests obtained from virus testing company indicated that most of the *Brunnera* samples submitted to the Plant Industry Lab were positive for TRV. The validity of the test was called into question, prompting samples to be sent to a virologist who had previously tested "positive" plants from another nursery. The virologist tested the samples using immunosorbent-electron microscopy, a procedure that combines an ELISA-like immunological test with the electron microscopic examination of stained sap. Immunosorbent-EM is at least four orders of magnitude more sensitive in detecting a low-level virus infection than either ELISA or the conventional stained sap EM assay used alone. The procedure is recommended in instances when information about very low levels of infection is needed.

No virus was detected in the two samples. The virologist determined that the buffers supplied with the test used by the Plant Industry Lab were not the appropriate ones for this particular species. The virus testing company then retested the Brunnera samples using reverse transcription PCR and their original ELISA test. The samples tested positive by ELISA but negative by RT PCR. The buffers were changed and the corrected ELISA test came back negative. Once the new buffers were sent to the Plant Industry Lab, the four samples were retested. Two *Brunnera* samples, which originally tested positive, tested negative. A peony sample and bleeding heart sample that initially tested positive, retested positive.

The testing protocol for TRV was refined this season, and in future years new potential TSV host species will first be tested using the RT PCR method. If the samples test positive, ELISA tests will be performed for subsequent samples.

***Phytophthora ramorum* -** Forty-nine states and Puerto Rico have reported compliance or national survey results. A total of 3,663 nurseries have been visited and 64,814 samples collected. Fifty-five positive sites in seven states have been identified through national survey or Federal order and annual cleanliness compliance surveys. Wisconsin targeted 54 nurseries and garden centers during the 2005 *P. ramorum* survey. Three hundred samples were submitted to the Plant Industry lab and all tested negative.

The US Forest Service and states are conducting nursery perimeter and general forest detection surveys in 38 states during 2005. As of September 23, there were confirmed positives. On September 15, California Department of Food and Agriculture (CDFA) reported the detection of *P. ramorum* on a white fir located at a tree farm in Santa Clara County, a quarantined county. This is the first report of the pathogen on white fir. PPQ has reviewed the CDFA data and expects to add white fir to the official APHIS List of Host and Associated Host Plants shortly. CDFA reports that a camellia planted in a residential landscape was found infected with *P. ramorum* in El Dorado County on September 22. The camellia was a trace forward from a positive nursery. Two trace forward azaleas also sampled at the home were initially, but erroneously, reported as positive; CDFA has corrected the report and the azaleas are not positive. On September 29, the PPQ Beltsville lab confirmed the detection of *P. ramorum* on several rhododendrons and a kalmia sampled by the Washington State Department of Agriculture. The detections were made at the four nurseries: two in King County, one in Pacific County, and one in Clark County. APHIS confirmed an additional two nurseries as infected on October 4. These nurseries are located in Snohomish and King Counties. Infected plants at both nurseries are varieties of Rhododendron. *P. ramorum* has been detected at 16 Washington State nurseries in 2005.

White pine weevil - This pest, unlike its name suggests, attacks spruce as well as pine causing a disfigurement that can render the trees unmarketable. Adults overwinter in debris under pine or spruce trees. Adults are active in early to mid-spring laying eggs in feeding punctures just below terminal buds on the leader. When the eggs hatch, the young larvae tunnel down the stem through the phloem, girdling the stem. New adults emerge from late July to early September.

These new adults feed on healthy branches for a few weeks before dropping to the ground to spend the winter. Damage from larval feeding is much more significant than the adult feeding on branches. Damaged leaders form a "shepherd's crook" and then die. This leaves the tree with no dominant leader, which is unsightly to buyers. By the time you see the "shepherd's crook" it is too late to apply chemical controls but infested leaders can be pruned out and burned before the adults emerge in summer.

In spring the adults become active when forsythia and Norway maple first blooms. Look for adults laying eggs and feeding close to terminal buds. You can also monitor by beating the tree and collecting weevils on a sheet or drop cloth. Chemical control should be aimed at the adults in early to mid-spring and again in late summer. There are several synthetic pyrethroids that are registered for use. Remember, always read and follow the label.--*Bob Dahl*

Gypsy Moth Program 1-800-642-MOTH

GYPSY MOTH PROGRAM - Trappers have finished taking down traps in all 72 counties. As of October 25, the unofficial total of moths caught is 308,225 in 34,122 traps. Cooperators set an additional 252 traps and caught 7,833 moths. The total moth catch for this year is 316,058. This is a drop from last year?s total of 372,058 moths and a significant drop from 2003?s total of 691,280 moths. There are several factors that may influence the drop in populations, such as weather conditions, presence of bio-control agents, and a more aggressive treatment and trapping program. Although gypsy moth numbers have been down for two consecutive years, it is possible for the gypsy moth population to make a comeback next year if conditions are right.

There were two counties with no gypsy moth catches this year, Pepin and Polk. Counties with the highest totals were Marinette, Oconto, Shawano, Door and Outagamie. Other areas with significant catches were the northern tip of Bayfield County and the Apostle Islands.

Three egg mass survey crews are currently surveying sites of the highest moth catches in the western half of the state. These crews are searching for gypsy moth life stages - egg masses, cast skins and pupal shells. The information gathered from egg mass surveys and the trapping program will be used to determine areas in western Wisconsin to be treated in 2006. Information on proposed treatment sites should be available by late January 2006.

http://www.datcp.state.wi.us/arm/environment/insects/gypsy-moth/index.jsp

Program Information

Autumn update on special registration options for Wisconsin's Agriculture Producers - The growing season is winding down but, this is no time to let the clock run out. It's time to look at the pest management playbook and depth of options, to avoid a defensive struggle next year.

Wisconsin has 42 special registrations in effect, but 15 of those will expire by the end of the year. Twenty six of the special registrations are Special Local Needs (SLNs) to address pest problems unique to a localized area of production in Wisconsin. The other 16 are Emergency Exemptions for temporary products to control various emergency pest infestations. SLNs have permanent tolerances for residues on food and usually are in effect for five years. Emergency Exemptions are temporary tolerances put in place by EPA, at the Department?s request, and they DO expire.

EMERGENCY EXEMPTIONS - Of the 16 Emergency Exemptions, 10 were issued for soybean rust and will be in place for two more growing seasons. The remaining six were issued to help control emergencies of varroa mite on honey bees, pathogens in ginseng and broadleaf weeds in strawberries and will expire at the end of this year. At that time, the temporary tolerances expire, and crops with residues found on them will be considered adulterated.

At year's end, the Department is required to give EPA quantitative and performance data about the products used on each crop. We request this information from the registrant and researchers at the University. Without it, EPA will not approve future requests for these products and may withhold our requests for other products on the crop.

SPECIAL LOCAL NEED REGISTRATIONS - Twenty six of the special needs registrations are categorized as "Special Local Need" registrations and nine of them will expire by the end of the year. The breakdown of these products is: nine insecticides, ten herbicides and seven fungicides. Seven products each are in use for cranberry and potato, and one each for twelve other crops.

EPA expects that by the time a multi-year SLN has expired, alternative pest controls or a full label, listing the crop, should be in place to address the problem. University researchers, growers and registrants should be working toward that goal unless the product is no longer needed.

IPM - University researchers are DATCP's partners and link to the field. They help DATCP provide labels that effectively and safely deal with the production needs of growers. As resistance rears its head and newer chemistries replace the older, perhaps reliable but riskier ones, it is important (and expected) that cultural, mechanical and reduced risk pesticide regimes be part of the request for special use products. Planning now, for control measures that include a variety of options will help growers ensure they have a diverse bench of tools to take on emergency and non-emergency needs.-- *Pat Kandziora, DATCP*

For a current list of products/crop/pest information, go to the Department's Special registration website at: http://www.datcp.state.wi.us/arm/agriculture/pest-fert/pesticides/special.jsp or call **608-224-4500**

Variant Western Corn Rootworm Survey 2005

SOUTHEAST WISCONSIN VARIANT WESTERN CORN ROOTWORM TRAPPING NETWORK 2005

by Eileen Cullen, UW-Entomology and UWEX Field Crops Entomologist

Supported by the University of Wisconsin Extension and the Wisconsin Soybean Marketing Board

Unlike normal rootworm beetles, the Variant Western Corn Rootworm Beetle (VWCR) can lay heavy populations of eggs in soybean fields, resulting in risk of economic injury to corn planted the next year. In 2005, the Rootworm Trapping Network monitored 71 soybean fields in southern Wisconsin to detect changes in the distribution of VWCR in Wisconsin.

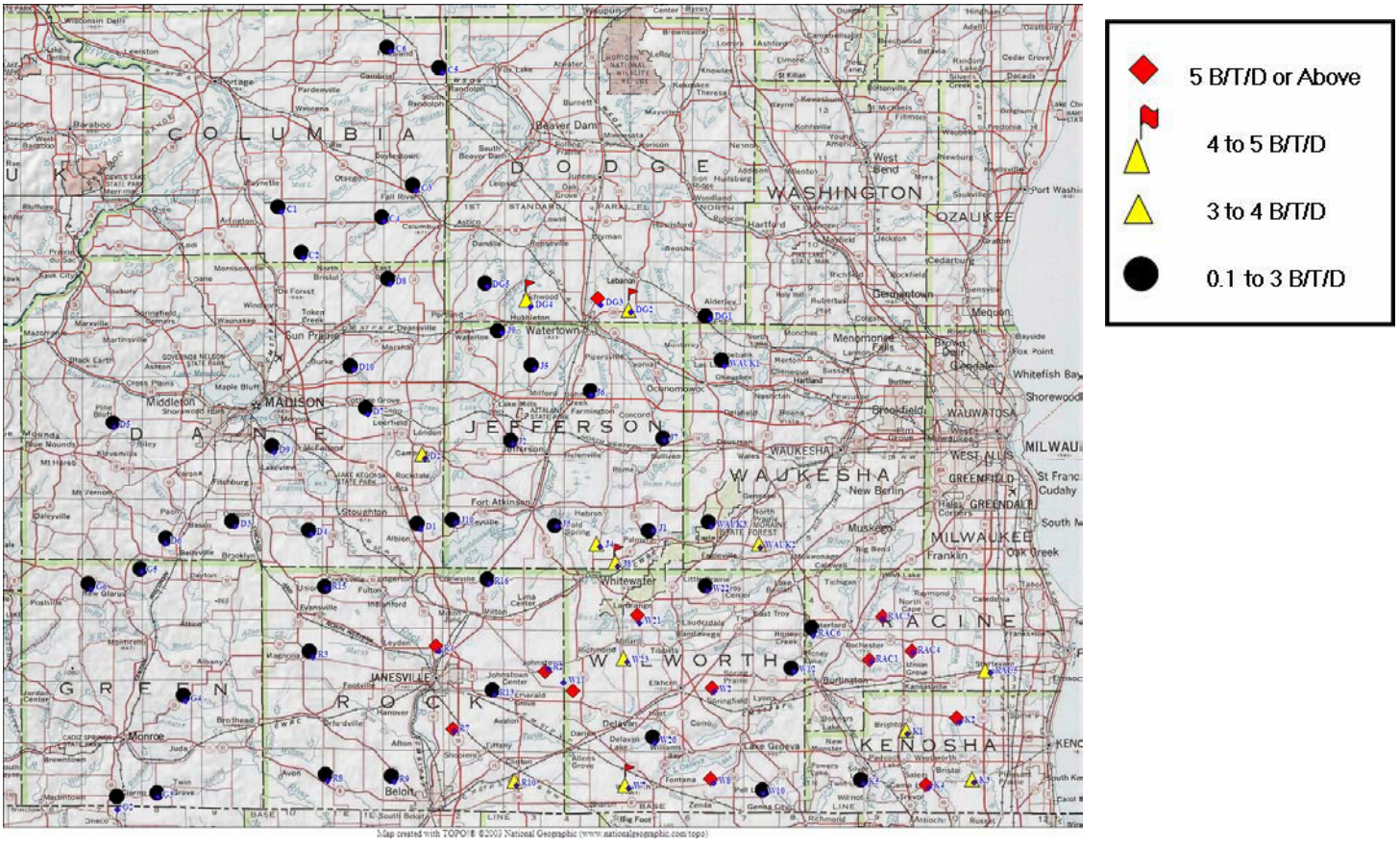
Science-based IPM research recommends a trap-based scouting protocol for VWCR in soybeans to estimate egg-laying activity and provide information to guide treatment decisions for corn planted the next spring. Visually, regular western corn rootworm and Variant western corn rootworm adults look the same, and there are currently no genetic screening methods available to distinguish between the two strains.

The Network soybean scouting protocol uses 12 Pherocon AM yellow sticky traps evenly spaced throughout the soybean field being grown ahead of corn. Trapping begins the last week of July and lasts for four weeks. Each week, total western corn rootworm beetle counts are recorded from each trap and traps replaced. At the end of the sampling period, the average number of adults caught per trap is calculated.

An average of 5 beetles per trap per day (B/T/D) over the August sampling period has been documented to result in economic root injury for corn planted in the field the next season.

The 2005 Network Map below illustrates results of this year's beetle count, and indicates areas of Wisconsin at greater risk for Variant western corn rootworm damage to first year corn. The Map Legend explains symbols for fields that trapped at or above threshold, fields close to threshold, and fields below threshold. In 2005, the Network found 13 of the 71 fields trapped had VWCR averages exceeding the threshold of 5 beetles per trap per day: two Kenosha County fields, three Racine County fields, three Rock County fields, four Walworth County fields, and for the first time, one Dodge County field. The detection of VWCR in Dodge County indicates the possibility of a northward expansion of the VWCR.

Field surveys by entomologists and Extension educators in IL and WI have found that not every first-year corn field requires protection against rootworm, even in the most severely affected pockets. Trap-based scouting and use of the IPM threshold for adult beetles in soybean is currently the most precise method available to determine treatment needs for first-year corn.



Department of Agriculture,
Trade & Consumer Protection
Division of Agricultural Resouces Management
PO Box 8911
Madison WI 53708-8911

Web Site of the Week

World Sunlight Map

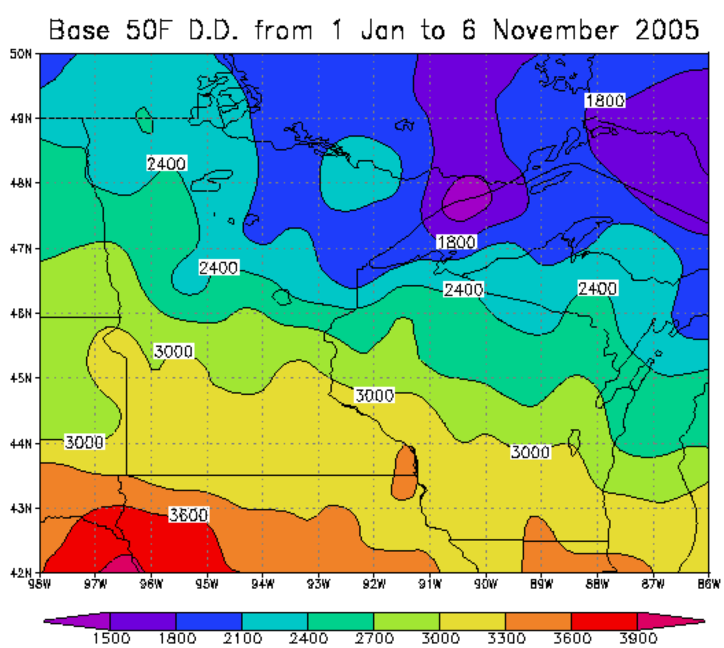
http://www.opentopia.com/sunlightmaprect.html

As we descend into the winter darkness, here's a si
help us remember that the sun does shine, somewh
(Check out the webcam links as well, for a peek arc
world.)

Quote of the Week

For I have had too much
Of apple-picking; I am overtired
Of the great harvest I myself desired.

Robert Frost (1874-1963)



http://www.soils.wisc.edu/wimnext/tree/arbor.html

November 04, 2005