WISCONSIN INSECT SURVEY RESULTS 2005 AND OUTLOOK FOR 2006

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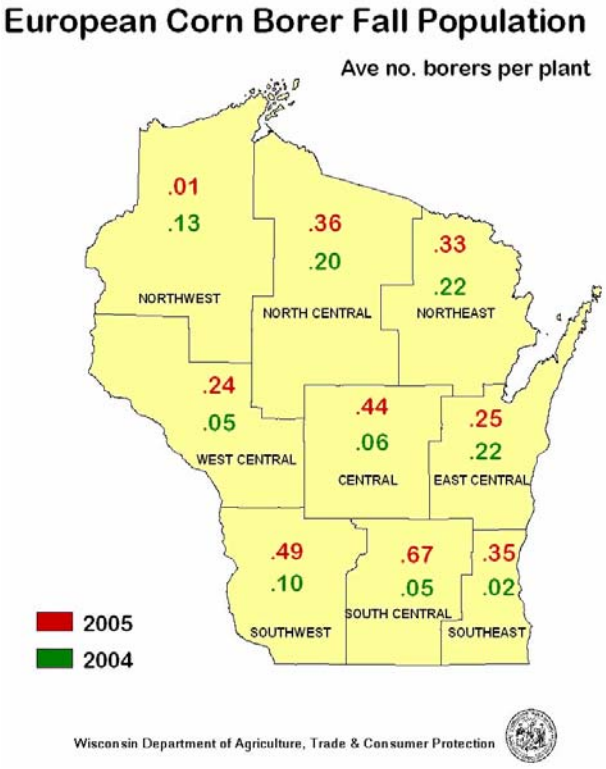
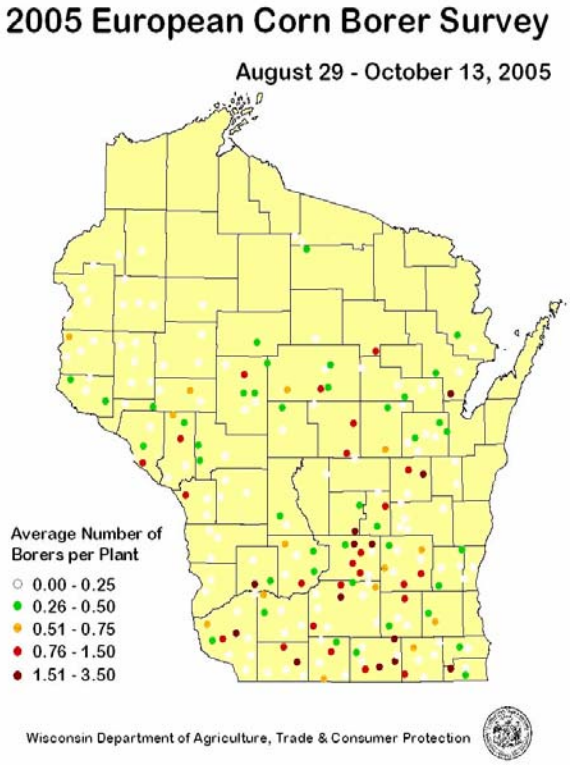
European Corn Borer

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. Approximately 87% of the corn fields surveyed had larval populations below 1.0 borer per plant (182 of 210 fields), while 13% of the corn fields had high larval populations, ranging from 1.0-3.5 borers per plant (28 of 210). As a reminder, a corn borer population of 1.0 borer per plant is economically important, 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 to moderate first flight of corn borer moths should be anticipated 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.



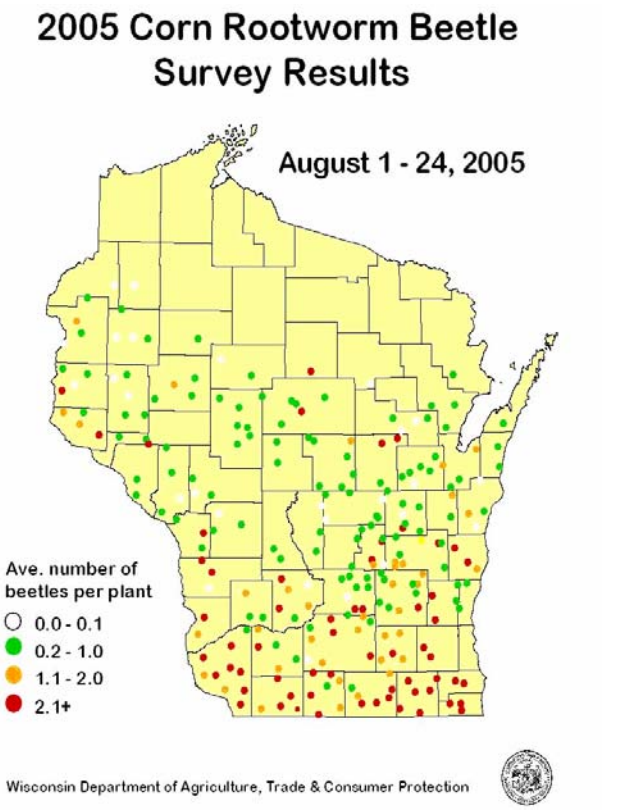


Corn Rootworm

The first adults of the season were observed during the week of July 8 in Walworth and Dane County corn fields, and by July 22, both beetles and silk feeding in drought-stressed fields were common. Damage in the form of lodged plants first became evident about July 25 following severe thunderstorms, and might have been evident earlier, if not for the insufficient rainfall and absence of storm activity throughout July of 2005.

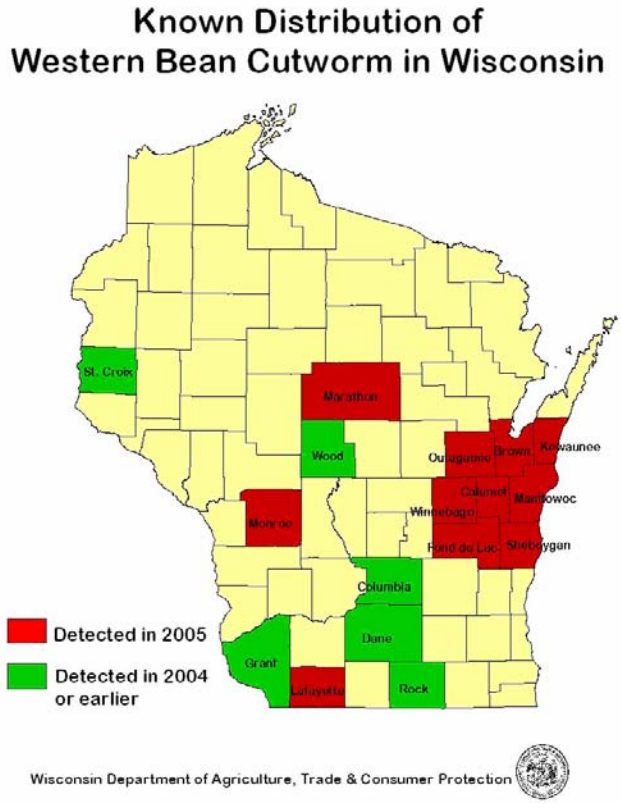
The annual corn rootworm beetle survey began during the first week of August, with preliminary findings indicating heavy beetle populations in the southern half of the state. The survey, which was timed to correspond with peak adult emergence during the first two weeks of August, found high adult rootworm 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 widely considered 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.

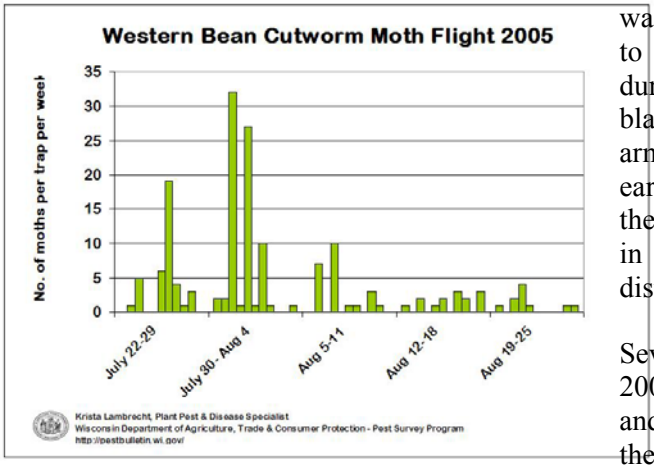
In addition, the beetle survey showed the western species, *Diabrotica virgifera* LeConte, to be the dominant species statewide, comprising 58% of all rootworms present. Emergence of rootworm adults was essentially complete by August 19, although weather conditions continued to favor rootworm activity into early October.



Western Bean Cutworm (WBCW)

In 2005, Wisconsin's first coordinated WBCW trapping network was established to track the emergence of moths and to monitor flight activity. WBCW is a new pest of corn to the Midwest that 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.





In 2005, WBCW was recorded for the first time in Calumet, Kewaunee, Manitowoc, Outagamie and Shawano counties. 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 County; 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.

True Armyworm

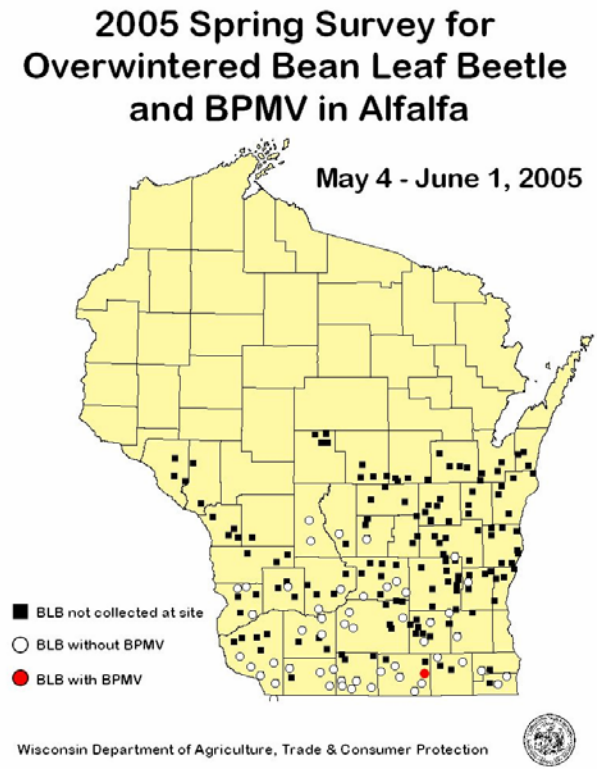
The earliest news of armyworm troubles came during the week of July 29 from Monroe County UW-Extension agent Bill Halfman, who reported armyworms had decimated a 48-acre corn field on the Monroe/Vernon County line. The same week, scattered problem areas were detected in Burnett, Polk, Rusk, Sawyer and Washburn counties, signaling that outbreaks 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 County 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. After armyworms had run their course last season, it appeared corn fields in the west central, northwest and central districts were hardest hit.

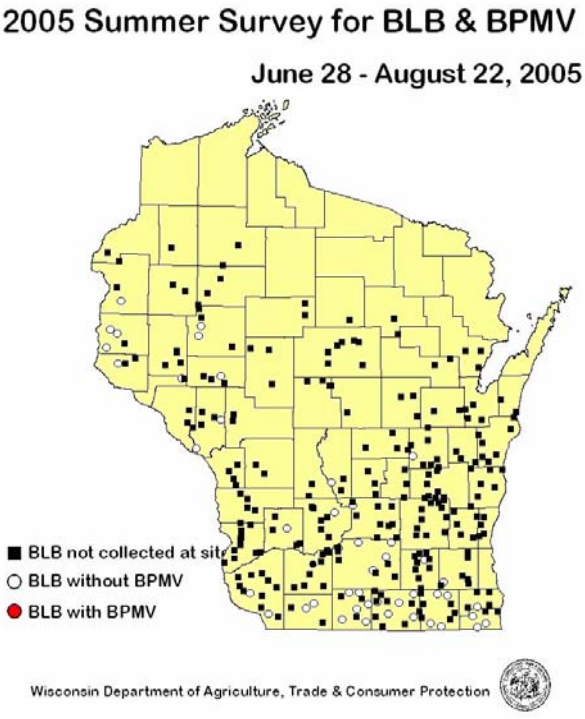
Several variables contributed the outbreaks of 2005, including widespread weed problems and late herbicide applications that prompted the migration of armyworms from grassy fields to corn plants following weed control. Fortunately, only one of the generations of armyworm was destructive last summer.

Bean Leaf Beetle

The spring survey for overwintered bean leaf beetles began in Green County on May 4, and advanced as far as Adams, Juneau and Marquette counties 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 one beetle from a Rock County field, while bean leaf beetles from the other 50 fields tested negative for BPMV. Testing of beetles was conducted using DAS ELISA kits from Agdia Inc., Elkhart, Indiana.

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 DAS ELISA method used to test beetles from the spring survey. No summer bean leaf beetles tested positive for BPMV. In addition, 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.





Soybean Aphid

The soybean aphid season began early in 2005, with the first detection of aphids on June 1 in western Dane Co. The annual 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, up from 14 in 2004, and down from 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 (>90°F) helped to limit aphid population growth in 2005.