WISCONSIN INSECT SURVEY RESULTS 2006 AND OUTLOOK FOR 2007

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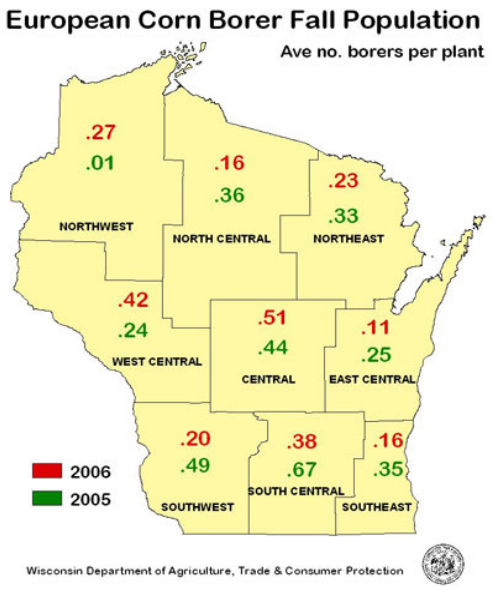
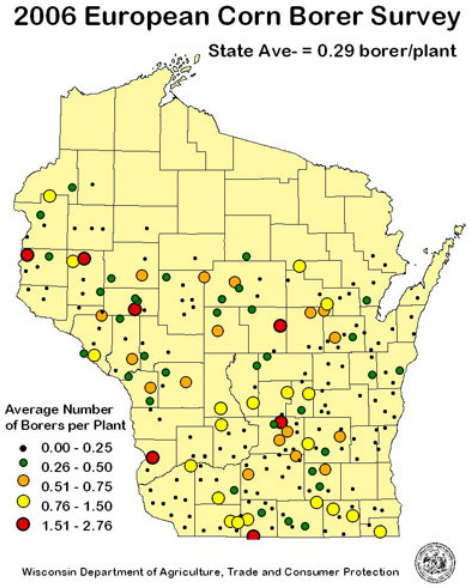
European Corn Borer

Wisconsin's annual fall survey documented a decrease in the state average European corn borer population from 0.40 in 2005 to 0.29 borer per plant in 2006 (29 borers per 100 plants). This compares to a 10-year average of 0.30 and a 50-year average of 0.48 borer per plant. The northwest, west central, and central districts showed increases from 0.01 to 0.27, 0.24 to 0.42, and 0.44 to 0.51 borer per plant, respectively. The largest decreases in 2006 were documented in the south central and southwest districts, where averages declined from 0.67 to 0.38 and 0.49 to 0.20 borer per plant. Lower densities in the southern districts may be associated with increased planting of Bt corn hybrids, although no specific evidence for this hypothesis is available at this time. Testing of field corn for transgenic traits during the summer corn rootworm beetle survey showed the highest utilization of hybrids in the southern three tiers of Wisconsin counties (see map in Corn Rootworm section).



Although district averages were generally low, a total of 20% (45 of 226) of the fields surveyed had populations in excess of 0.50 borer per plant, and 8% (18 of 226) had populations above the economic threshold of 1.0 borer per plant. The west central and central districts in particular had a fair number of fields with economic populations, indicating fields in these regions should be scouted for first generation corn borer injury next June.



European corn borer populations were determined by sampling 25 consecutive stalks in 226 mature corn fields in the districts shown on the accompanying map. Plants were examined for signs of infestation, including broken stalks, exit holes, frass, and larval tunnels. Two plants were dissected to determine the average number of larvae per infested plant. A large majority of the borers were mature and appeared to be in good overwintering condition despite the abundance of rainfall in September. A statewide average of 0.29 borer per plant is comparatively low, suggesting a light first flight of corn borer moths next spring. However, favorable weather next season or a small carryover of parasites could result in an increase of damaging borers.

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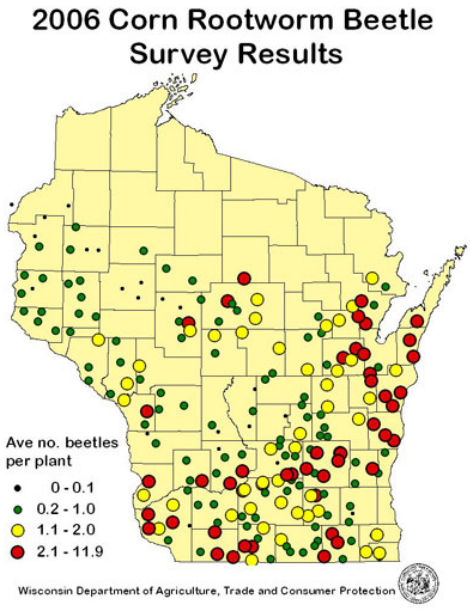
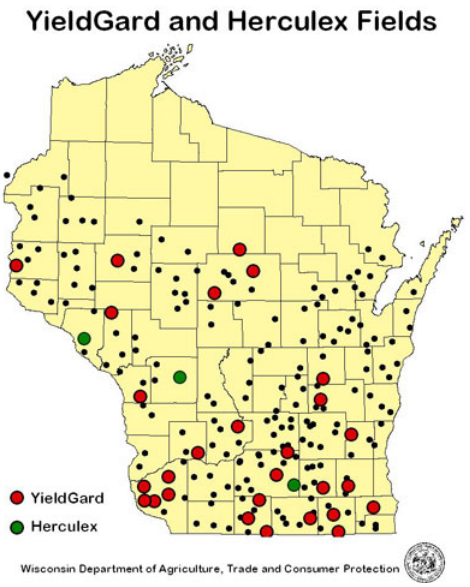
Corn Rootworm

A survey to assess corn rootworm beetle populations during peak beetle emergence last August found a minor decrease in the state average number of beetles per plant, from 1.6 in 2005 to 1.4 in 2006. Results from the statewide survey of corn rootworm adults were as follows: northwest district 0.1 per plant; north central district 0.9 per plant; northeast district 1.8 per plant; west central district 0.8 per plant; central district 0.7 per plant; east central district 2.2 per plant; southwest district 2.2 per plant; south central district 1.7 per plant; southeast district 1.4 per plant.

District averages declined from 2005 to 2006 in the northwest, central, southwest, south central and southeast, and increased in the north central, northeast, and east central districts. The most substantial population increases were documented in the northeast, where the average number of corn rootworm beetles per plants rose from 0.3 in 2005 to 1.8 this season, and in the east central district, where the average doubled from 1.1 beetles per plant in 2005 to 2.2 per plant in 2006. A total of 28% (61 of 218) of the sites surveyed had non-economic averages ranging from 0-0.4 beetles per plant, 29% (64 of 218) had averages ranging from 0.5 to 1.0 beetles per plant, and a 43% of the fields had high populations ranging from 1.1 to 11.9 beetles per plant.



Based on 2006 survey findings, multi-year corn in the northeast, east central, and all southern districts is at risk of heavy larval feeding pressure next spring. Averages in the northwest district may have been artificially low because most of the fields checked were drought stressed and had brown silks at the time of the survey. A total of 3% of the fields surveyed were in the dough stage, 6% were in the dent stage, 54% were at maturity (brown silks, cob full size), 34% were in the pollinated stage, and 1% was in the silk emergence stage. Testing for transgenic traits found the YieldGard® Bt-Cry3Bb1 protein in 13% of the fields (28 of 218) surveyed, while the Herculex® Bt-Cry34Ab1 protein was detected in 1% (3 of 218) of the fields checked. A summary table with results of the 2006 corn rootworm beetle survey is shown below.



Western Bean Cutworm

Measurable populations of the western bean cutworm, *Loxagrotis albicosta* Smith were detected for the first time in Wisconsin corn fields this season. In late August, Pioneer Hi-Bred

Area Agronomist Arnie Imholte discovered an infestation affecting roughly 15 to 20% of the ears in a field test plot south of Mineral Point, and mature larvae were found feeding in ears in Green, Green Lake, Juneau, and Marquette counties during the European corn borer survey in September and October. Corn ears in many of the fields checked had been partially consumed by either western bean cutworm or corn earworm, but no larvae were present to confirm which species was responsible for the injury. Whether the growing numbers of western bean cutworm sightings are due to an increasing incidence of this pest or increased awareness is not clear. Both are probably contributing factors.

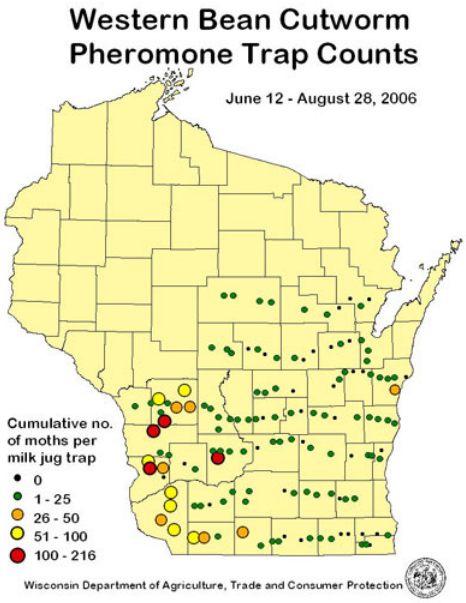
Although its full pest potential remains to be determined, the extensive network of pheromone traps placed throughout the southern two-thirds of the state indicates this insect is most prevalent in western Wisconsin, particularly in the southwest. The accompanying map shows cumulative captures of moths at 135 trapping sites in the southern two-thirds of the state for the period of June 12 to August 28. The highest captures ranging from 100 to 216 moths were reported from Westby in Vernon Co., Mt. Sterling in Crawford Co., Cashton in Monroe Co., and Sylvan in Richland Co. Seven of the 135 sites (5%) registered counts of 51 to 100 moths, another seven sites (5%) had catches of 26-50 moths, and a vast majority, 117 of 135 sites (87%) reported very low cumulative counts of 0-25 moths. These captures represent a significant eastward extension in the known range of this pest, which was historically restricted to the western cornbelt states.

Wisconsin's western bean cutworm population will pass the winter as non-feeding prepupae 3 to 9 inches beneath the soil surface and pupate next June. Peak flight activity, based on two years of pheromone trap data, should be anticipated from the third and fourth weeks of July to the first week of August. More survey work is needed to determine the threat of western bean cutworm in Wisconsin. Most of the infestations detected this season were spotty and not particularly severe, and the numbers of moths captured in milk jug traps were very low in comparison to those registered in Illinois and Iowa (ranging up to 1,834 moths). Certainly the potential for this insect to become a major mid- to late-season pest in Wisconsin does exist, but the survey data collected this season are not conclusive enough to reliably shape management decisions at this time.

Corn rootworm beetle 2005-2006 survey results.

District	*Ave no.CRW per plant 2006*[1]	*Ave no.CRW per plant 2005*[1]	*No. Fields Surveyed 2006*	*No. Fields Surveyed 2005*
Northwest	**0.1**	*0.4*	**15**	*15*
North central	**0.9**	*0.8*	**16**	*15*
Northeast	**1.8**	*0.3*	**10**	*10*
West central	**0.8**	*0.8*	**29**	*31*
Central	**0.7**	*0.9*	**20**	*32*
East central	**2.2**	*1.1*	**27**	*38*
Southwest	**2.2**	*3.2*	**34**	*34*
South central	**1.7**	*1.9*	**48**	*49*
Southeast	**1.4**	*3.8*	**19**	*19*
Statewide Ave.	**1.4**	*1.6*	**218**	*243*

[1]Average based on number of beetles per 10 corn plants examined

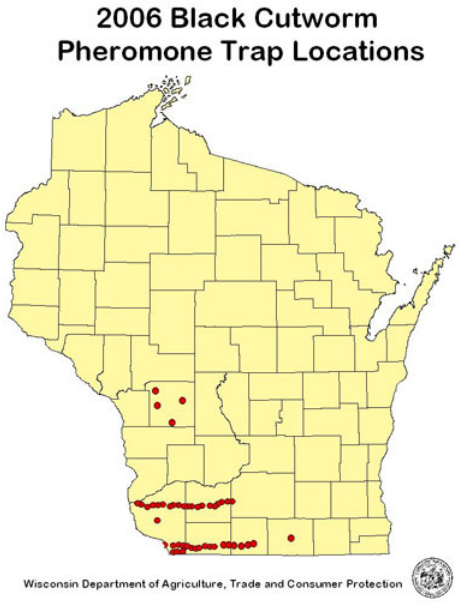


Black Cutworm

Last April a network of 41 traps were placed along Highways 11 and 18 in the southwest corner of the state in anticipation of the arrival

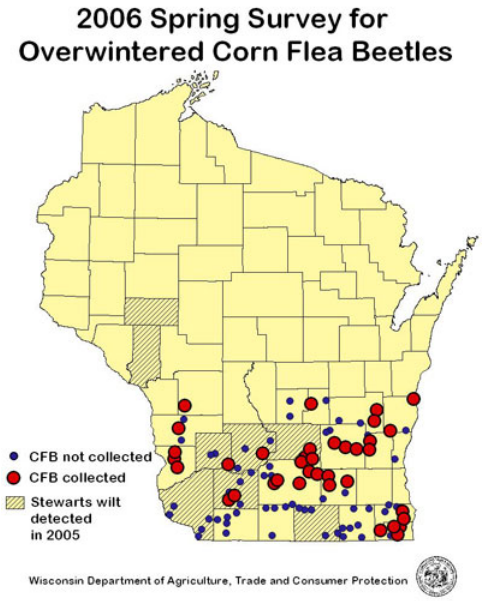
of migratory black cutworm moths from overwintering grounds in southern Louisiana and eastern Mexico. In addition, Bill Veith of Seneca Foods reported counts from Janesville, and Monroe Co. Agent Bill Halfman monitored four traps near Sparta in the west central district. DATCP survey specialists and cooperators have used pheromone traps in 2006 and preceding years to determine the arrival of moths, the start of egg laying, and when seedling corn is most susceptible to cutting.

Black cutworms arrived slightly ahead of schedule this season. The earliest migrants were registered at the Janesville trapping site on April 6, 2006. Other first seasonal moth captures were as follows: April 12 in 2005; April 19 in 2004; April 22 in 2003; April 17 in 2002; and April 21 in 2001. The first "concentrated capture" of eight moths occurred near Janesville on the night of April 24, and corn seedlings were susceptible to cutting by mid-May. Aside from a few isolated instances of cutworm damage to seedling corn in the northwest during the first week of June, this insect cannot be credited with causing any noticeable damage to corn in other parts of the state in 2006.



Corn Flea Beetle

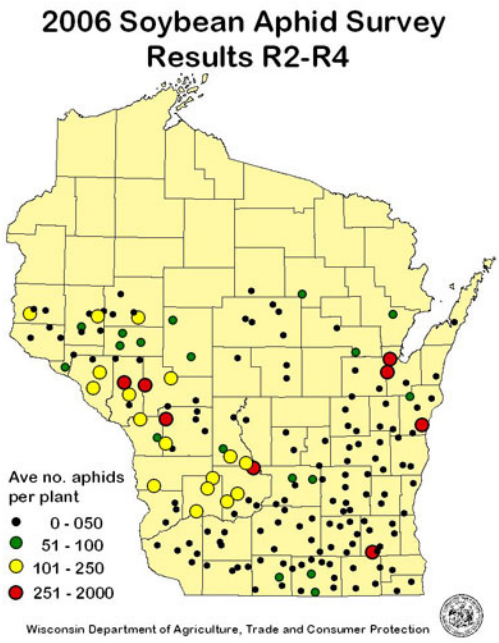
Following a record-setting year of Stewart's wilt detections in Wisconsin seed corn fields in 2005, a spring survey for overwintered corn flea beetles was conducted to forecast the risk for Stewart's wilt in 2006. The Stewart's wilt bacterium, *Pantoea stewartii*, overwinters in the gut of corn flea beetle. If corn flea beetle survives the winter months, generally the bacterium also survives. Surveys for this insect were previously carried out during the 2000-2002 growing seasons, but DATCP specialists questioned their usefulness after the incidence of Stewart's wilt was trace to low for several successive years. The survey was re-established when more cases of Stewart's wilt were detected in 2005 than in any year since 1999. Seed field inspections found the disease in 21 of 44 fields surveyed, or 48% of the fields visited in 2005. The disease occurred in eight counties, extending as far north as Eau Claire County.



Despite the high incidence of Stewart's wilt in 2005, none of the overwintered corn flea beetles collected from 40 of 100 southern and central Wisconsin sites tested positive for the Stewart's wilt bacterium. As expected, the incidence of Stewart's wilt in seed corn fields was very low this season; the disease was found in just three Grant Co. fields earlier this fall.

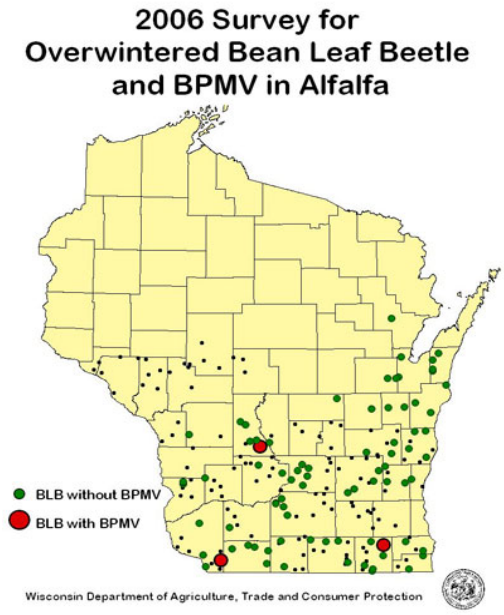
Soybean Aphid

Results from an annual survey of 183 soybean fields (R2 to R4 stages), conducted July 12 to August 9, showed economic populations of aphids did not develop in a majority of Wisconsin soybeans last summer. The survey found 96% (175 of 183 fields) of the soybean fields examined supported aphid populations below the action threshold of 250 aphids per plant, while just 4% (8 of 183) of the fields had soybean aphid populations exceeding the action threshold. Based on the 2006 survey, 85% of the soybean fields averaged fewer than 100 aphids per plant, 10% of the fields averaged 100 to 250 aphids, and 4% averaged 251 to 2,000 aphids per plant. A total of 58% of the fields were at the R2 development stage (full bloom), 20% were at R3 (beginning pod), and 22% were at R4 (full pod). Soybean aphid densities recorded this season were comparable to 2005 densities in most districts, higher than those documented in 2004 (the lightest aphid year on record), and much lower than the record aphid densities detected in 2003. Final survey results are summarized in the map.



Bean Leaf Beetle

Bean pod mottle virus (BPMV) was not prevalent among the 2005-2006 winter survivors, according to a survey conducted between May 4 and June 9. Overwintered beetles were collected from 81 of 202 central and southern Wisconsin first-crop alfalfa fields. Only three beetles from sites in Grant, Juneau, and Walworth Cos. were carriers of BPMV. In addition, none of the 188 soybean leaf samples collected during a summer follow-up survey from July 12 to August 8 tested positive for BPMV, indicating BPMV was probably absent from most Wisconsin fields this season.



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