WISCONSIN INSECT SURVEY RESULTS 2007 AND OUTLOOK FOR 2008

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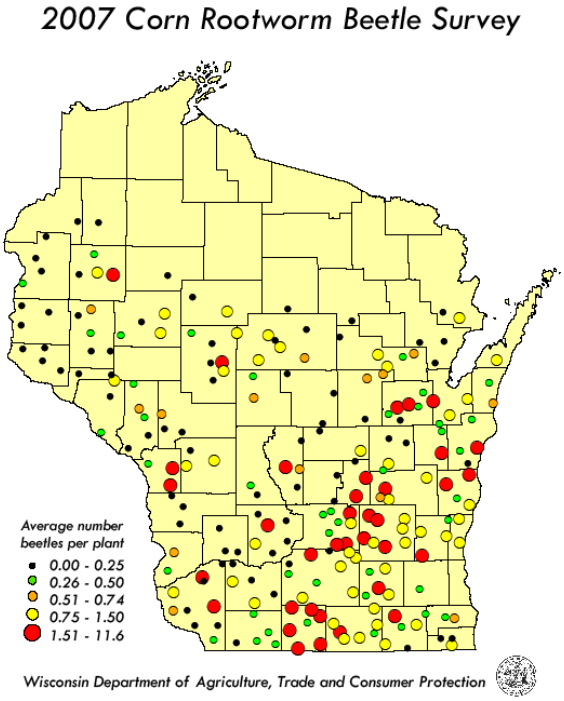
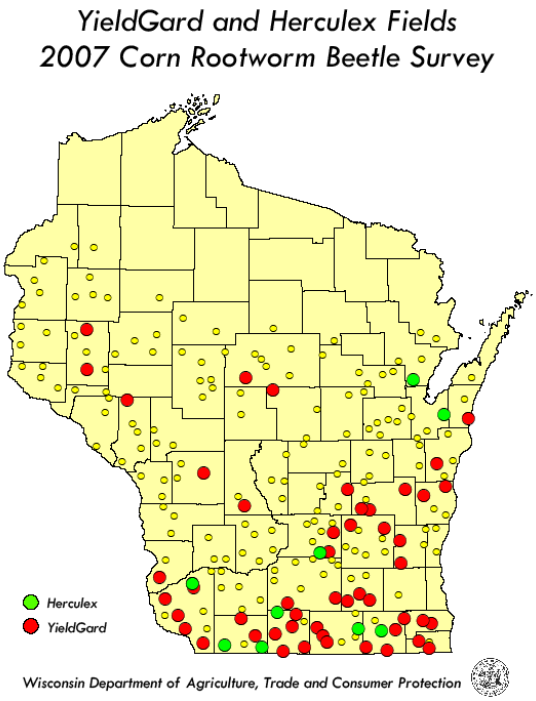
Corn Rootworm

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 beetle per plant indicates the potential for feeding injury by corn rootworm larvae in multi-year corn.

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. The maps below summarize the results of the annual corn rootworm beetle survey.





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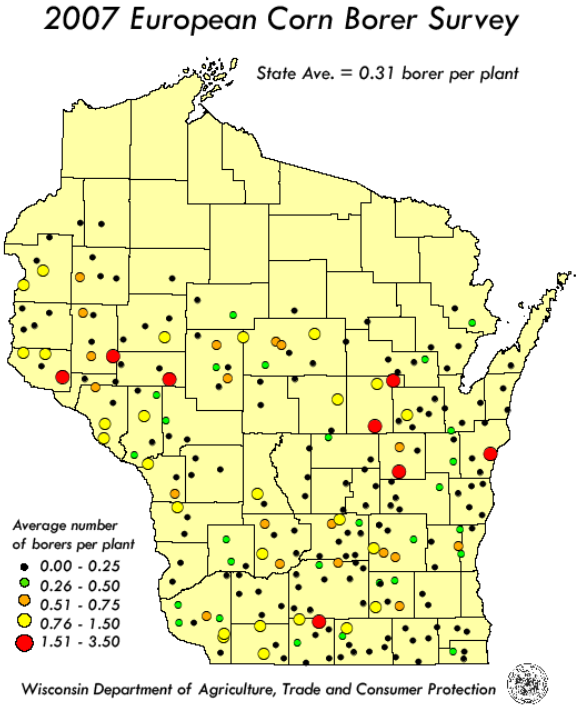
European Corn Borer

The fall abundance survey of 230 fields of grain corn registered a minor increase in larval populations compared to the fall of 2006. The state average number of European corn borers entering the winter of 2007 increased to 0.31 per plant from 0.29 per plant in 2006. This 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 agricultural reporting districts.

Approximately 53% of the fields 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), considering that borer pressure is expected to be very low.

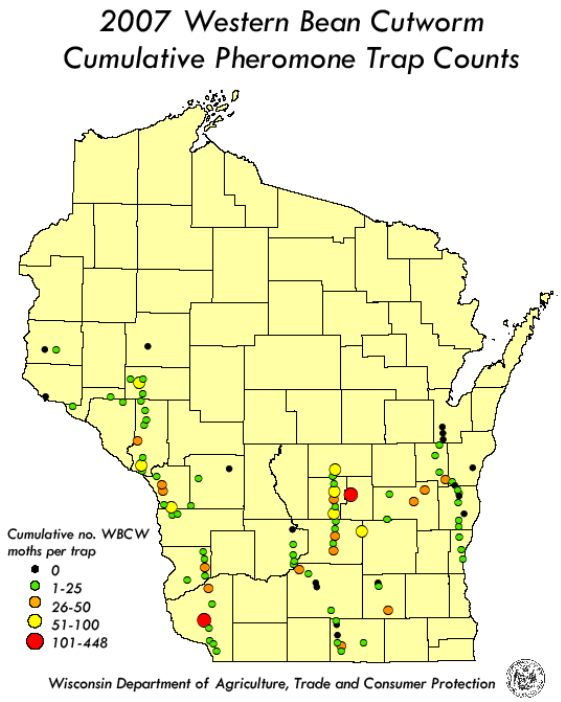
Table 1. European corn borer fall abundance survey summary 1998-2007 (Average no. borers per plant).

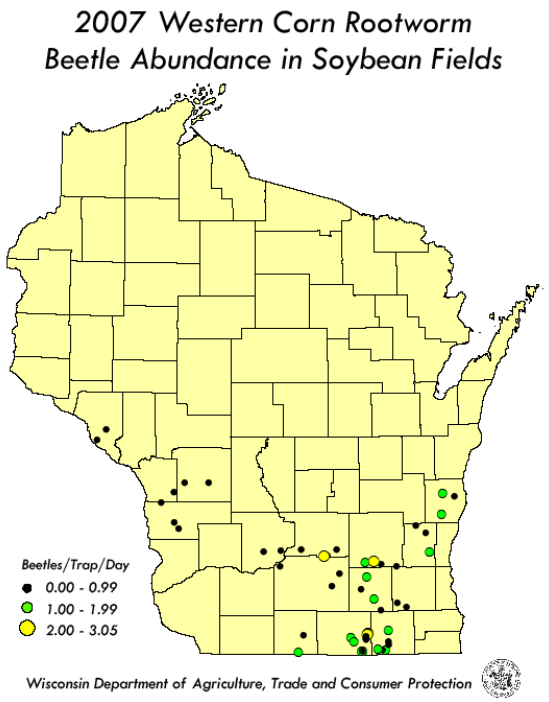
District	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	10 Yr Ave
NW	0.02	0.15	0.24	0.33	0.44	0.20	0.13	0.01	0.27	0.24	0.20
NC	0.01	0.03	0.04	0.05	0.26	0.14	0.20	0.36	0.16	0.35	0.16
NE	0.01	0.18	0.03	0.07	0.75	0.23	0.22	0.33	0.23	0.07	0.21
WC	0.02	0.30	0.31	0.67	0.71	0.16	0.05	0.24	0.42	0.52	0.34
C	0.02	0.30	0.41	0.48	1.21	0.44	0.06	0.44	0.51	0.42	0.43
EC	0.03	0.25	0.19	0.33	0.44	0.20	0.22	0.25	0.11	0.21	0.22
SW	0.17	0.57	0.39	0.87	0.65	0.34	0.10	0.49	0.20	0.28	0.41
SC	0.10	0.61	0.33	0.48	0.86	0.51	0.05	0.67	0.38	0.33	0.43
SE	0.10	0.31	0.16	0.36	0.61	0.21	0.02	0.35	0.16	0.12	0.24
State Ave.	**0.05**	**0.30**	**0.24**	**0.40**	**0.66**	**0.30**	**0.10**	**0.40**	**0.29**	**0.31**	**0.31**

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.



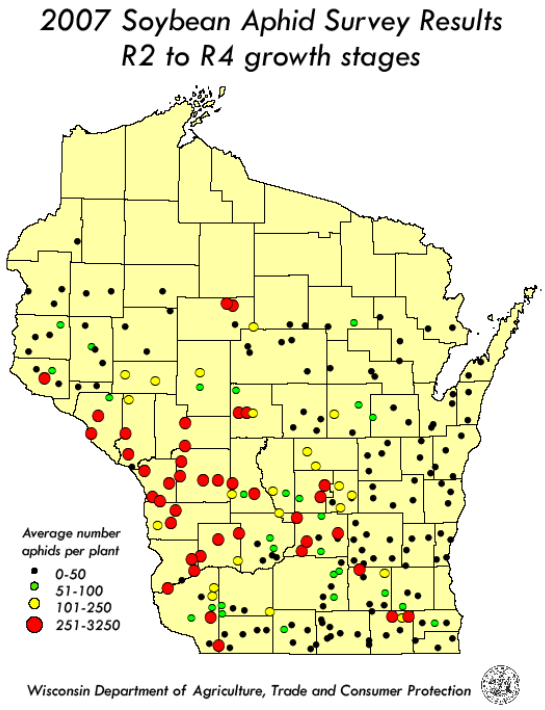


The presence of this late-season corn pest in Wisconsin and the Midwest since the late 1990s is evidence of an eastward expansion in its geographic range, which was once limited to Colorado and Nebraska. Consecutive years of trapping have not found populations of adults comparable to those registered 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.

Variant Western Corn Rootworm

The Wisconsin Variant Western Corn Rootworm Trapping Network monitored 53 soybean yields 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 53 soybean fields in Buffalo, Columbia, Dane, Dodge, Green, Jefferson, La Crosse, Monroe, Rock, Sauk, Sheboygan, Vernon, 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. Western corn rootworm beetle numbers were generally lower in southern Wisconsin this year due to heavy rains and standing water during the peak period of beetle activity in August. Averages in Rock and Walworth counties fell below the 5 B/T/D threshold for the first time since 2003. These 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. The 2007 network trapping results are provided in the map on the preceding page.

Soybean Aphid



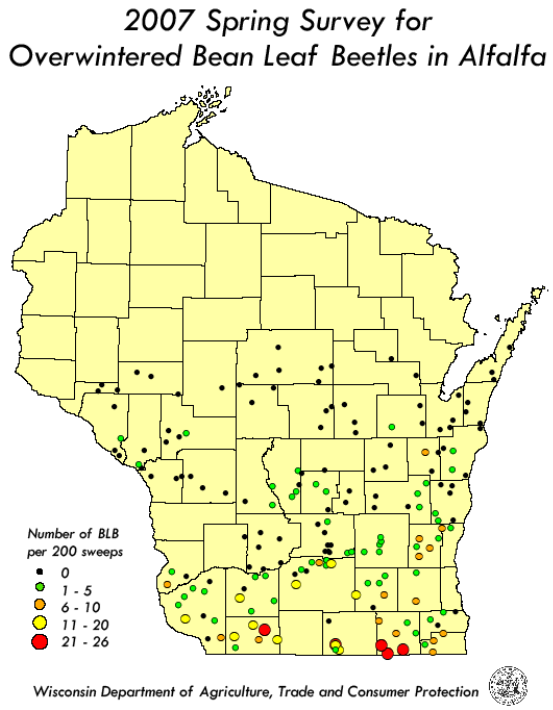
The annual soybean aphid survey is conducted during the R2 to R4 stages of soybean growth to detect peak seasonal soybean aphid densities and to assess fields while treatment may still be beneficial. Examination of 227 soybean fields between July 12 and 31 found non-economic soybean aphid populations at 83% of the survey sites. Treatable or economic populations were detected at 17% 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, 118 aphids per plant in 2005, 11 aphids per plant in 2004, and 758 aphids per plant in 2003. The highest average number of aphids per plant recorded was 3,250 in a Columbia County field. Final survey results are summarized by agricultural statistics districts in the table on the following page.

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 between May 9 and June 13, and collected 509 beetles from 86 of the sites (47%). 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).



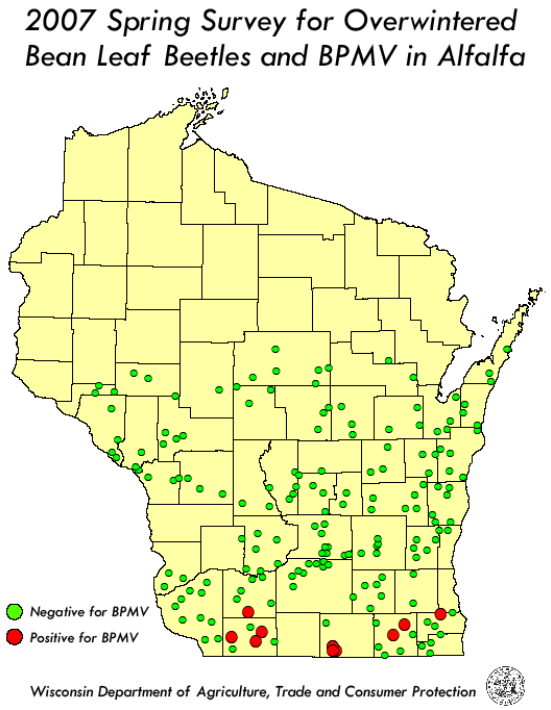


Table 2. Soybean aphid survey summary 2003-2007 (R2-R4 stages of growth).

District	Ave no.soybean aphids per plant 2007	Ave no.soybean aphids per plant 2006	Ave no.soybean aphids per plant 2005	Ave no.soybean aphids per plant 2004	Ave no.soybean aphids per plant 2003
Northwest	13	56	306	1	566
North Central	109	22	113	7	93
Northeast	13	58	42	25	170
West Central	356	101	198	9	632
Central	170	44	175	43	680
East Central	10	159	124	5	968
Southwest	302	55	44	2	149
South Central	188	30	75	11	993
Southeast	54	23	91	6	1268
State Average	**164**	**69**	**118**	**11**	**758**

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