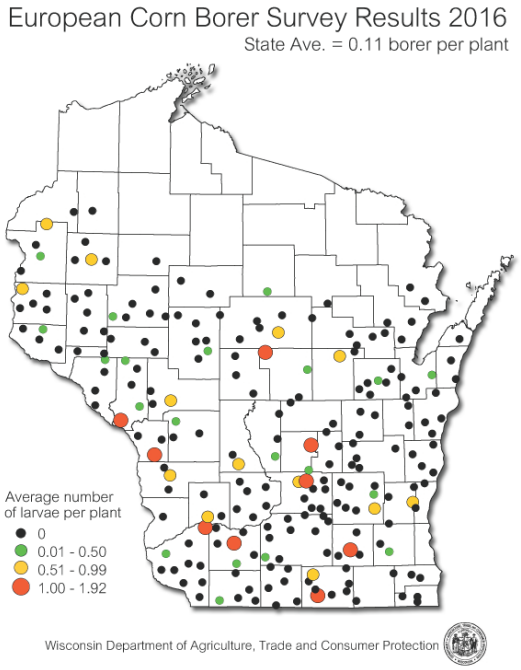
WISCONSIN INSECT SURVEY RESULTS 2016 AND OUTLOOK FOR 2017

Krista L. Hamilton[1/]

European Corn Borer

An increase in conventional corn acreage due to lower commodity prices apparently favored larval populations this fall. The 75th annual survey in September and October found a state average of 0.11 borer per plant, an increase from last year's historical low of 0.02 borer per plant. Minor population increases from 2015 were documented in seven of the nine crop districts, except in the east-central and northeast regions. Larval densities in the central area rose to 0.24 borer per plant, or 24 per 100 plants, the highest average recorded in that area since 2007. Although more sites had economic averages above 1.0 larva per plant than in recent years, and second-generation larvae were detected in 49 of the 229 fields (21%) surveyed compared to14% in 2015, the very low state average of 0.11 borer per plant indicates that Bt corn continues to suppress corn borer populations and reduce the pest status of this insect in Wisconsin.



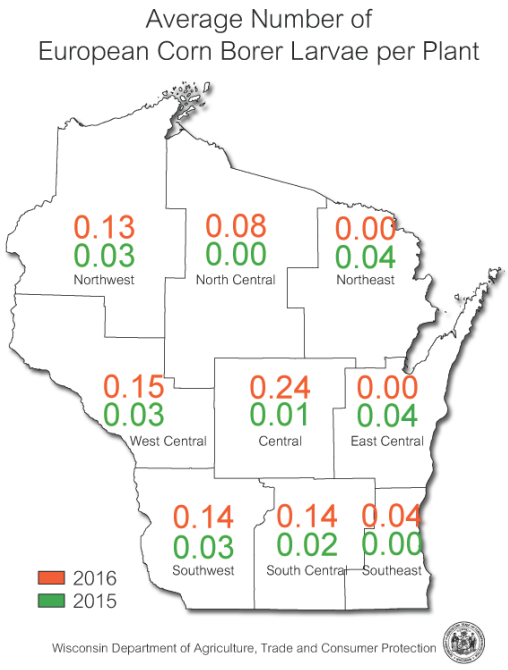


Table 2. European corn borer fall abundance survey results 2007-2016 (Average no. borers per plant).

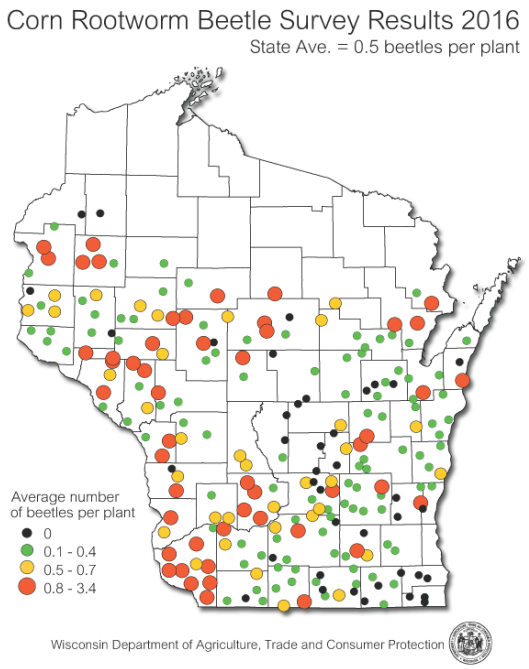
District	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	10-Yr
NW	0.24	0.12	0.06	0.08	0.15	0.04	0.07	0.06	0.03	0.13	0.10
NC	0.35	0.18	0.10	0.02	0.07	0.01	0.02	0.04	0.00	0.08	0.09
NE	0.07	0.12	0.12	0.19	0.13	0.05	0.02	0.01	0.04	0.00	0.08
WC	0.52	0.04	0.10	0.08	0.12	0.09	0.06	0.12	0.03	0.15	0.13
C	0.42	0.11	0.06	0.06	0.05	0.01	0.01	0.00	0.01	0.24	0.10
EC	0.21	0.20	0.09	0.01	0.03	0.01	0.01	0.01	0.04	0.00	0.06
SW	0.28	0.05	0.06	0.12	0.03	0.03	0.06	0.00	0.03	0.14	0.08
SC	0.33	0.07	0.02	0.07	0.20	0.01	0.08	0.01	0.02	0.14	0.10
SE	0.12	0.04	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.04	0.02
State Ave.	**0.31**	**0.09**	**0.06**	**0.07**	**0.09**	**0.03**	**0.04**	**0.03**	**0.02**	**0.11**	**0.09**

[1/] Entomologist, Department of Agriculture, Trade and Consumer Protection, 118 North 6th Street La Crosse, WI 54601.

Corn Rootworm

Review of annual beetle survey data shows that populations decreased from 2015 levels across southern, central and east-central Wisconsin, while beetle counts in the west-central and northern counties were markedly higher. Averages declined in five of the nine crop districts and increased in four. The largest decreases were found in the south-central and southeast districts where averages fell sharply from 0.8 to 0.4 beetles per plant and from 0.7 to 0.2 beetles per plant, respectively. By contrast, the survey found substantially higher averages in west-central and northern Wisconsin, particularly in the northeast where the district count more than tripled from 0.2 to 0.7 beetles per plant. Despite regional increases, the 2016 state average of 0.5 beetles per plant still represents a decrease from the 2015 average of 0.6 per plant.

Results of the survey suggest a greater threat of larval rootworm damage to non-Bt continuous corn in the northern and west-central counties next season, while beetle pressure may be lower across the southern, central and east-central areas.



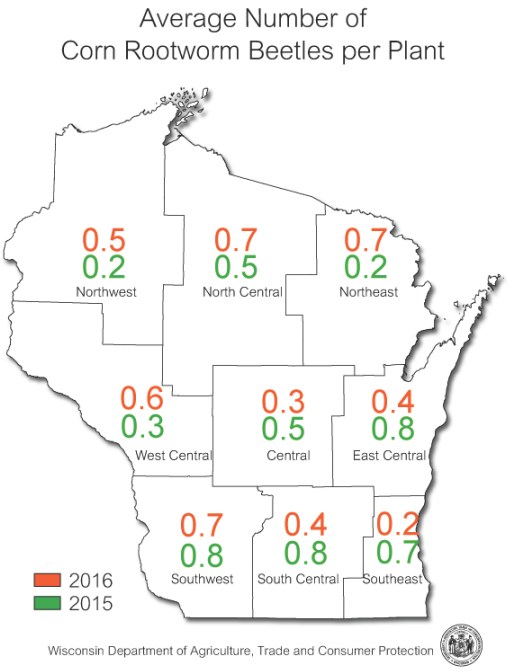


Table 1. Corn rootworm beetle survey results 2007-2016 (Average no. beetles per plant).

District	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	10-Yr
NW	0.4	0.5	0.4	0.3	0.1	0.5	0.7	0.5	0.2	0.5	0.4
NC	0.7	0.9	0.4	0.1	0.1	0.3	0.2	0.2	0.5	0.7	0.4
NE	0.5	0.6	0.6	0.1	0.3	0.6	0.2	0.1	0.2	0.7	0.4
WC	0.4	0.6	0.5	0.4	0.6	0.4	0.4	0.6	0.3	0.6	0.5
C	0.8	0.5	0.4	0.4	0.8	0.5	0.2	0.2	0.5	0.3	0.5
EC	1.4	1.0	0.6	0.3	0.5	0.4	0.3	0.3	0.8	0.4	0.6
SW	0.4	1.1	0.7	0.3	1.1	0.8	0.6	0.9	0.8	0.7	0.7
SC	2.2	1.5	1.1	0.3	1.4	0.9	0.5	0.3	0.8	0.4	0.9
SE	1.0	1.6	0.3	0.2	0.7	0.9	0.8	0.4	0.7	0.2	0.7
State Ave.	**1.0**	**1.0**	**0.6**	**0.3**	**0.7**	**0.6**	**0.5**	**0.4**	**0.6**	**0.5**	**0.6**

Black Cutworm

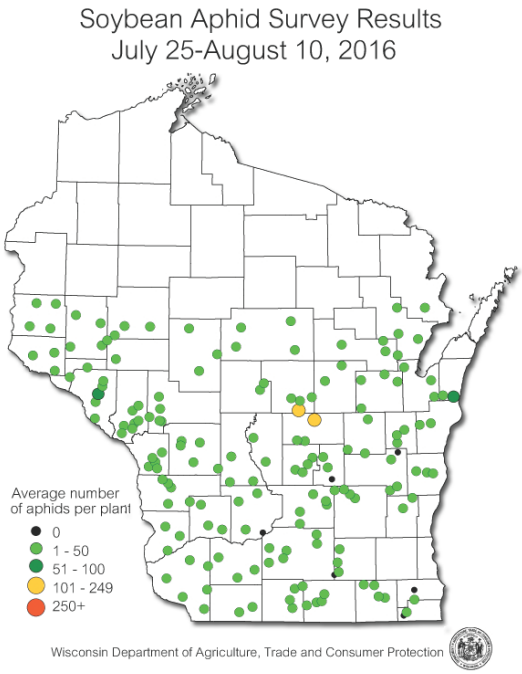
Migrants began arriving in the state by March 29 and an initial cutting date of May 20 was anticipated based on an April 17 biofix. The spring trapping survey registered 1,835 moths in 43 traps from March 15-June 1, with a peak from April 21-May 4. Light infestations developed in corn by early June as a result of the migration and favorable field conditions, but significant injury was not reported or observed.

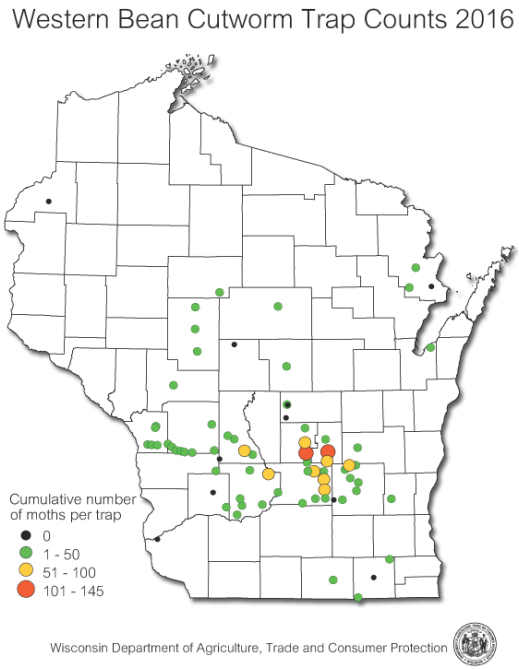
Western Bean Cutworm

Moth counts increased moderately after a three-year collapse. The state cumulative capture of 1,530 moths in 75 traps (20 per trap) was a substantial increase from the 644 in 96 traps (seven per trap) moths collected last season, yet moderate in comparison to counts registered during the 2007-2012 surveys and the 12-year average of 23 moths per trap. The highest individual count for the nine-week monitoring period was 145 moths near Markesan in Green Lake County. Larvae were also more common than anticipated this season and infested approximately 9% of the 458 corn sites surveyed in August and September. Damage to both traited and non-traited corn hybrids was reported.

Soybean Aphid

The annual survey found a statewide average count of eight soybean aphids per plant. This average compares to 35 aphids per plant last year and is only marginally higher than the record-low count of seven aphids per plant documented in 2012. One hundred and seventy soybean fields in the R2-R5 growth stages were sampled during a three-week period from July 25-August 15. Aphid densities were below 151 per plant in all fields, and the majority of sites had counts of fewer than 25 aphids per plant. No field sampled had an average exceeding the 250 aphid-per-plant treatment threshold. Results of the survey suggest that aphid populations remained low or moderate in most soybean fields this season and widespread treatment for aphid control was not required.





Corn Earworm

A late-season migration yielded a cumulative total of 6,402 moths in 16 traps, with a well-defined peak from August 18-31. Almost one-third of the moths (31%) were captured at the Ripon monitoring site during the last week of August. Compared to 2015, the migration was larger and lengthier, with the heaviest flights concentrated in Columbia and Fond du Lac counties. Late sweet corn and other susceptible crops such as tomatoes and snap beans remained under a moderate to severe threat until mid-September.

Japanese Beetle

Defoliation was observed in about 74% of the soybean fields examined in late July and August, indicating that Japanese beetle injury was more widespread than ever. Defoliation estimates were mostly below the 20-30% treatment threshold, but chemical intervention was justified in some instances. Once primarily a fruit and landscape pest, the Japanese beetle has become an increasingly serious threat to Wisconsin's agronomic crops that more soybean and corn growers now have to manage for the first time.

Obliquebanded Leafroller

This generalist leafroller was common in Wisconsin soybean fields for the second year in a row. Larvae began emerging by early June and were prevalent in fields throughout July. Most of the larval population pupated by early August. Despite their abundance, the OBLR damage to soybeans observed in 2015 and 2016 was minor and not of economic importance.