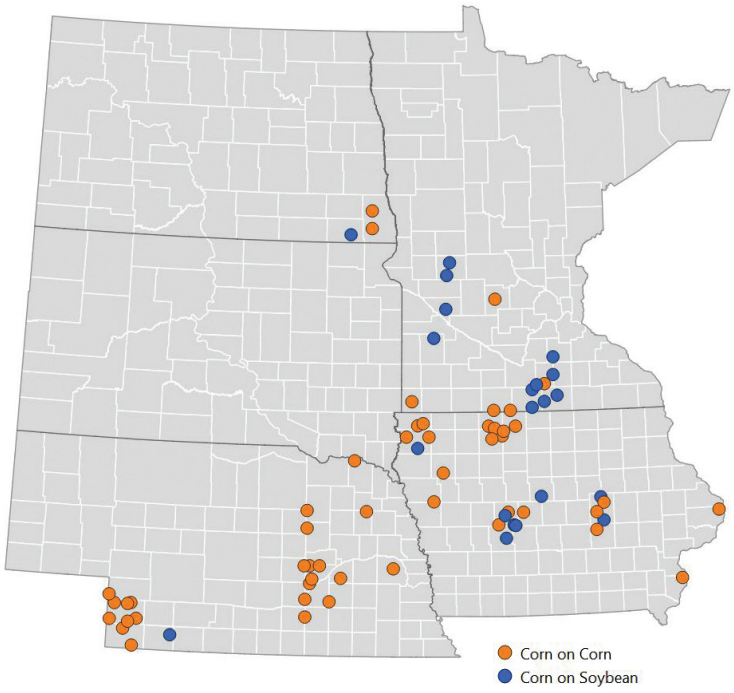
2019 Corn Rootworm Beetle Monitoring Project Summary

Rob-See-Co Direct Sales Representatives (DSRs) and Business Associates (BAs) worked together to conduct a Corn rootworm beetle trapping project during the summer of 2019. The primary purpose of this project was to demonstrate the value of Agrisure Duracade® for control of Corn rootworm, but the insights gained also help our customer's manage corn rootworm on their individual farms. Trap project observations provided cooperators with documentation of corn rootworm beetles actively feeding on silks during pollination, which coincided with timing of trap deployment. Trap counts provide all Rob-See-Co customers with insight into where corn rootworm larvae are most likely to be a problem in 2020.

A set of one or more sticky traps were placed in Eighty-seven corn fields during the Corn rootworm beetle flight and monitored for three consecutive weeks. Corn rootworm beetle traps were collected weekly. The number of Corn rootworm beetles trapped on each trap were counted, and then traps were replaced with a fresh trap.

Location of Traps

Traps were placed in fields that represented a combination of corn following corn, and corn following soybeans. The corn following soybean fields helps us understand the likelihood of damage by Northern corn rootworm in extended diapause and/or the presence of Western corn rootworm soybean variant. Seventy two of the eighty-seven locations had a set of two traps, sometimes in the same hybrid and Corn rootworm control trait, but most often comparing two different hybrids or control strategies. This summary of results and the adjacent map of locations are based only on these seventy-two locations.



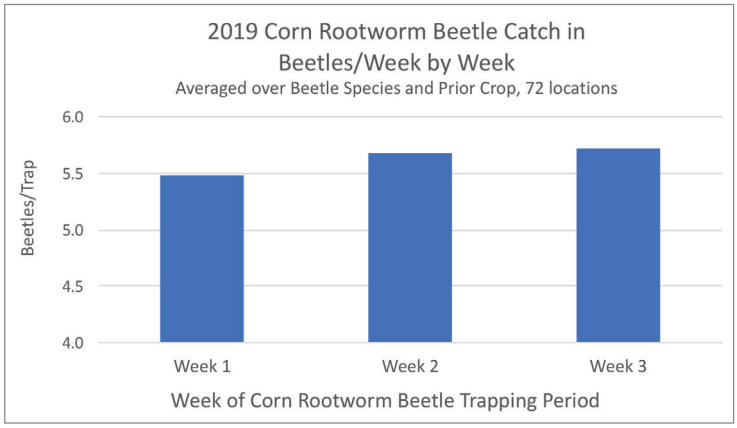
Summary of Results

All results are presented as the average number of Corn rootworm beetles captured per week. Only counts of Northern and Western corn rootworm beetles were collected. While the Southern corn rootworm beetle is often observed in corn fields, it is not able to overwinter in the Central/Northern Corn Belt and is not a significant pest of corn in geographies where traps were placed.

Left to right: Southern corn rootworm (Spotted cucumber beetle), Western corn rootworm, and Northern corn rootworm

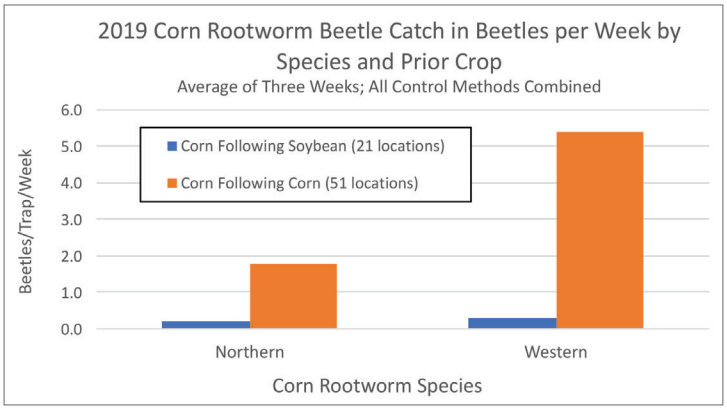
Photo courtesy of Iowa State University

Beetles Captured by Week



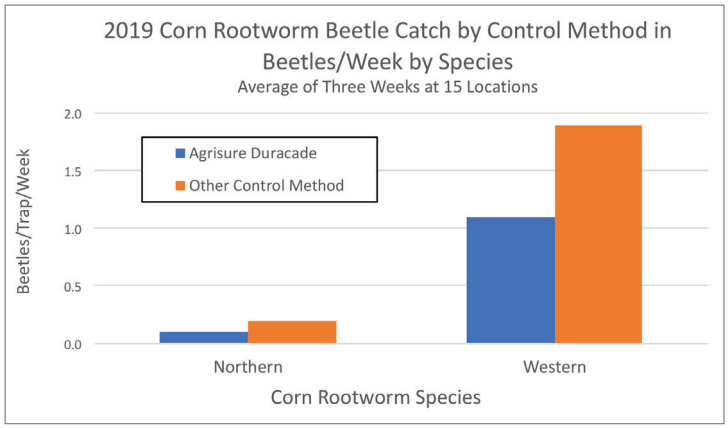
Traps were not deployed during the entire beetle flight. The project was designed to have traps out during the front end and peak in the beetle flight, due to the importance of this time period relative to Corn rootworm management strategies. Corn rootworm beetle numbers were lower in 2019 compared to a smaller scale pilot study conducted in 2018. The average number of beetles/trap/week in 2019 was only about a third of the number of beetles captured/week in 2018 (data not shown; see 2018 CRW Beetle Monitoring Project Summary under the Agronomy tab, and Agronomy Projects selection option at robseeco.com).

Beetles Captured by Corn Rootworm Species and Prior Crop



Fifty one of the seventy-two trap locations were in fields where corn followed corn; the remaining twenty-one were in corn following soybeans. The ratio of Northern to Western was similar across the two rotation types, and on average the Western species outnumbered Northern by approximately three to one. Beetle numbers were more than ten times higher in corn following corn compared to corn following soybean.

Beetles Captured by Control Method



Eighteen of the trap location fields included a direct comparison of a Rob-See-Co hybrid carrying the Agrisure Duracade trait to an alternative control option. Fifteen of those locations had Corn rootworm activity in the field, (based on beetle capture) and were used for a comparison of control strategy efficacy. Alternative control options compared included a conventional hybrid treated with a soil insecticide at planting (1), a single mode of action Corn rootworm control trait (1), hybrids carrying the Genuity® SmartStax® trait package (2), and hybrids carrying the Optimum® AcreMax® XTreme trait package (11). Overall, Agrisure Duracade resulted in 40% fewer corn rootworm beetles compared to the other control methods.

These results demonstrate the control advantage provided by Agrisure Duracade, as well as the importance of managing Corn rootworm on continuous corn acres. For more information on the 2019 Rob-See-Co Corn Rootworm Beetle Trap Project, contact your DSR, BA, or Product Evaluation Lead.