Corn Earworm Picks up Activity in Iowa

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Abstract
Corn earworm (Photo 1) is common in Iowa corn. It is a migratory pest, migrating from the southern and southeastern U.S. every summer. There are two general flights to the Midwest every summer, but the first flight is not of economic concern. Iowa's corn is more vulnerable to infestation of the second flight, arriving in late July. Yield losses can occur in late-planted cornfields, where caterpillars can infest >50% of plants. It is more common to see corn earworm issues in sweet corn, white corn, popcorn, and seed fields. Kernel injury can promote ear mycotoxins (e.g., fumonisins and aflatoxins) and further reduce grain quality. The frass (excrement) can also be a contaminant for corn processing.

Disciplines
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September 23, 2019

Corn earworm (Photo 1) is common in Iowa corn. It is a migratory pest, migrating from the southern and southeastern U.S. every summer. There are two general flights to the Midwest every summer, but the first flight is not of economic concern. Iowa’s corn is more vulnerable to infestation of the second flight, arriving in late July. Yield losses can occur in late-planted cornfields, where caterpillars can infest >50% of plants. It is more common to see corn earworm issues in sweet corn, white corn, popcorn, and seed fields. Kernel injury can promote ear mycotoxins (e.g., fumonisins and aflatoxins) and further reduce grain quality. The frass (excrement) can also be a contaminant for corn processing.

Caterpillars feed on leaves, tassel, silks, and the whorl, but they prefer to feed on kernels. They are generally found at the ear tip and leave extensive frass inside the husk, creating soft ears (Photo 2). They can eat ~15 kernels or the top two inches of the ear tip.
Females lay about 1,000 eggs. The caterpillars are 1 ½ - 2 inches when fully developed and range from pale green to pink to dark brown (Photo 3). Usually, the head capsule is orange and dark tubercles (bumps) run along the side of the body. Caterpillars will drop from the ear to pupate. In some cases, they chew their way out of the ear and leave an exit hole that can be confused with western bean cutworm.

Hybrids with Bt traits that target corn earworm (e.g., Vip3Aa20, Cry1A.105 + Cry2Ab2) provide acceptable larval suppression in Iowa. In addition to reducing feeding injury, the amount of mycotoxins in the grain can be reduced.

In 2018 and 2019, several fields planted with a pyramided Bt hybrid had severe injury with nearly all the ears infested with corn earworm. Research confirming Bt resistance of corn earworm in sweet corn on the east coast was published in 2017, but resistance is not known to occur in the Midwest. USDA-ARS entomologists are working with ISU Entomology to determine the extent of resistance of these migratory pests.

If you are unsure if your corn hybrids have Bt traits that suppress corn earworm, check out the Handy Bt Trait Table for 2019 from Michigan State University.
Resources:

https://entomology.ces.ncsu.edu/field-corn-insect-corn-earworm/

https://www.vegedge.umn.edu/pest-profiles/pests/corn-earworm-sweetcorn

Category:  Crop Production  Insects and Mites

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Crop:
Corn

Tags:  pest  caterpillar  Bt  scouting  Corn

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Dr. Erin Hodgson started working in the Department of Entomology at Iowa State University in 2009. She is an associate professor with extension and research responsibilities in corn and soybeans. She has a general background in integrated pest management (IPM) for field crops. Dr. Hodgson's curre...