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Check Your Corn for Aphids

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Abstract

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Integrated Crop Management

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August 1, 2018

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Photo 1. Aphids have been detected in northern Iowa again. Photo by Brian Lang, ISU.

Aphids have been confirmed in cornfields for about two weeks, particularly in northeast Iowa. This is about 10-14 days earlier than previous growing seasons. Some of these infested fields will likely be sprayed in early August. From my observations this week, I noticed aggregated colonies at the end rows, but some areas have aphids throughout the field.

One important observation I've noticed is that cornfields can have two aphid species - corn leaf aphid and bird cherry-oat aphid. They are closely related and look very similar in size and color. You can see more than one species in a field and even on a single plant. The bird cherry-oat aphid have an orange-red saddle between the cornicles (Photo 2). Other aphid species can also be found, including greenbug and English grain aphid, but are not as

common in corn this year. Species identification is not critical for management at this point (i.e., an aphid is an aphid).



Photo 2. Bird cherry-oat aphid. Photo by David Cappaert, www.ipmimages.org.

All aphids have piercing-sucking mouthparts and feed on the sap from the plant phloem. They excrete sugar-rich honeydew that can cover the aboveground portion of plants. The honeydew can promote a sooty mold that interferes with plant photosynthesis. We know soybean plants covered with mold and aphids can have serious yield loss, but we don't know the extent of yield reduction caused by aphids in corn.

Currently, there are no treatment thresholds for aphids in corn past tasseling. But regular sampling will help you make educated decisions about a foliar application at this time. Sample field-wide (30 plants for every 50 acres) to determine the average density. Here are some considerations to make before applying an insecticide for aphids in corn:

1. Are 80% of the plants infested with aphids or are they aggregated around the field perimeter?
2. Are aphids colonizing the ears, or the ear leaf and above (Photo 3)?
3. How long has the field been infested and is the density increasing?
4. Do you see honeydew and/or sooty mold on the stalk, leaves or ear? Mold can interfere with photosynthesis and interfere with the grain-filling process. Moldy ears could also reduce grain quality and make harvest difficult.
5. Are you seeing winged aphids or nymphs with wing pads? This may be a sign of migration out of the field.

6. Is the field under drought stress? Dry weather will make amplify potential feeding damage to corn.
7. Do you see any bloated, off-color aphids under humid conditions? Natural fungi can quickly wipe out aphids in field crops. Also, parasitized aphids are common to see in corn and are a result of wasp biocontrol (Photo 4).
8. What is the corn growth stage? Fields reaching hard dent may be past the point of a justified insecticide.
9. What is the expected harvest date? Some insecticides have a 60-day pre-harvest interval. Check the label and calendar.
10. Are you able to use high volume and pressure of an insecticide application to reach the aphids? Ideally, small droplets should make contact with the aphids for a quick knockdown. Don't expect residual to protect the corn from fluid feeders.



Photo 3. Scout for corn aphids after tasseling and look for colonies around and above the ear.



Photo 4. Heavy infestations of corn aphids usually have parasitized mummies. Photo by Adam Sission, ISU.

Typically, fields with more than 500 aphids per plant field wide will benefit from a foliar insecticide. I strongly encourage you to leave an untreated check strip or two in fields that you spray. Try to leave a strip that is a fair comparison to the majority of the field - not just along the field edge. If you decide to treat for aphids in corn, I would like to hear about the yield comparisons. Your pooled data will help me formulate treatment guidelines for the future.

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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...