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Soybean Aphid Numbers on the Rise

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Soybean Aphid Numbers on the Rise

Abstract

Since 2000, soybean aphid has been the primary soybean insect pest in Iowa. Infestations are sporadic and unpredictable, but this insect has the ability to cause significant yield loss during periods of optimal reproduction. Several notable infestations have been reported, particularly in north-central Iowa, this week, and therefore scouting to determine population densities is strongly encouraged. Fields that have a fairly uniform infestation with low densities (e.g., 50% of plants infested with an average of 40 aphids per plant) should be closely monitored in August.

Keywords

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Soybean Aphid Numbers on the Rise

ICM News

August 4, 2014

By Erin Hodgson, Department of Entomology

Since 2000, soybean aphid has been the primary soybean insect pest in Iowa. Infestations are sporadic and unpredictable, but this insect has the ability to cause significant yield loss during periods of optimal reproduction. Several notable infestations have been reported, particularly in north-central Iowa, this week, and therefore scouting to determine population densities is strongly encouraged. Fields that have a fairly uniform infestation with low densities (e.g., 50% of plants infested with an average of 40 aphids per plant) should be closely monitored in August.

Biology. Soybean aphid is the only species in Iowa that will colonize soybean. After developing on their overwintering host, buckthorn, winged adults will migrate to soybean and potentially product 15+ generations. Initial infestations in soybean are patchy and located near field edges, but winged aphids can quickly disperse within and between

fields. Long and short distance immigration is more likely after bloom. Aphids prefer to feed on the undersides of leaves (Photo 1) and will colonize on the newest leaves. If a large colony develops and leaves are crowded, soybean aphid will feed on stems.



Photo 1. Turn over soybean leaves to estimate soybean aphid density.

Management. According to my efficacy evaluations, most products labeled for soybean aphid are efficacious (Fig. 1). Some foliar insecticides have a 60-day preharvest interval, so check the label and the calendar when making product selections. At this time, product choice is not as critical as getting sufficient coverage. With any foliar application, strive for the highest knockdown possible to avoid resurgent aphid populations. Ideally, increasing volume and pressure will generate small droplets that should make contact with the aphids on the undersides of leaves. For ground applications, use 20 gallons of water per acre and 40 pounds of pressure per square inch.

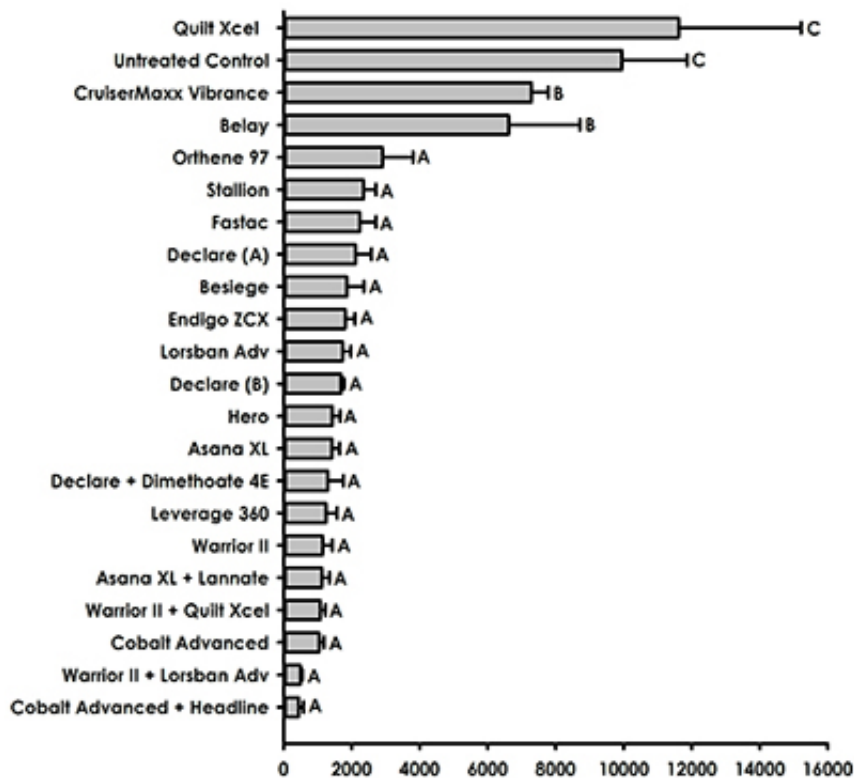


Figure 1. Mean separation of treatments for cumulative aphid days + standard error of the mean at the Northeast Research Farm in 2013. For a full list of treatments and rates, [click here](#). Means with a unique letter are significantly different at alpha = 0.10.

Scouting. With the potential of many overlapping generations in a field, scout weekly from plant emergence until seed set to assess population dynamics. The economic threshold for soybean aphid is well established for the north-central region. Consider a foliar application when the average density exceeds 250 per plant. Populations should be increasing and most of the plants have to be infested (>80 percent) in order to justify an application. This threshold is appropriate until plants reach mid-seed set (R5.5; Photo 2). Alternatively, consider using a binomial sequential sampling plan, Speed Scouting, to help make treatment decisions. [Find blank forms here](#).



Photo 2. Mid-seed set (R5.5) have seeds that are expanding in the pod. Photo by ISU Extension.

Spraying at full seed set (R6) or later has not produced a consistent yield benefit in Iowa. In 2013, soybean aphid populations did not peak until late August and a yield response was not consistent in our efficacy evaluation (Fig. 2). Regardless of application timing, leave untreated check strips to assess if the treatment decision was profitable.

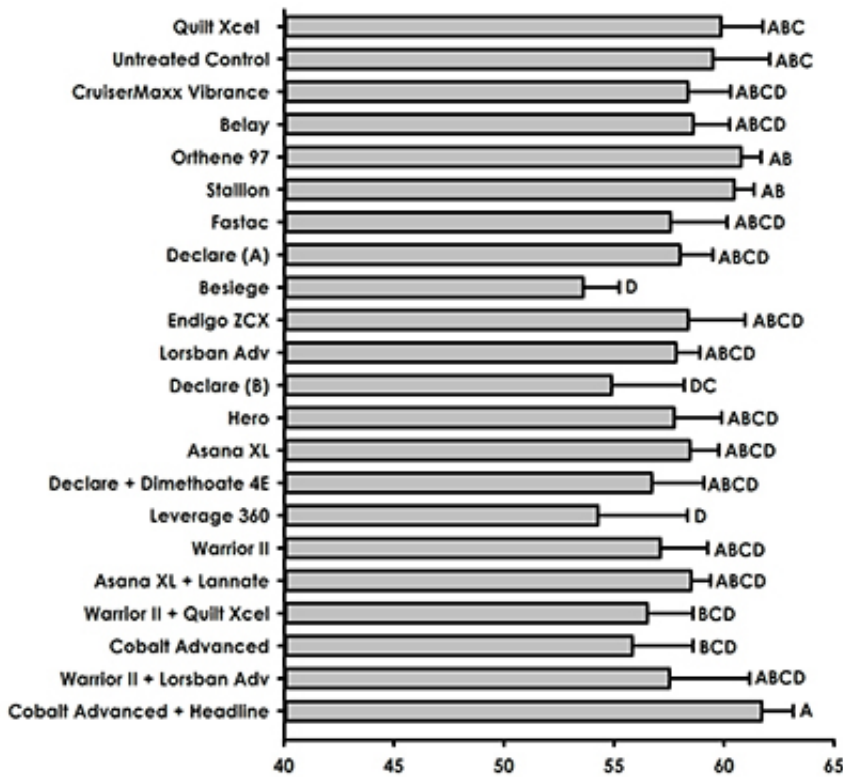


Figure 2. Mean separation of treatments for yield (bushels per acre) + standard error of

the mean at the Northeast Research Farm in 2013. For a full list of treatments and rates, [click here](#). Means with a unique letter are significantly different at $\alpha = 0.10$.

Erin Hodgson is an associate professor of entomology with extension and research responsibilities; contact at ewh@iastate.edu or by calling (515) 294-2847.

Category: Insects and Mites

Crop:
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Tags: Soybean soybean aphid soybean pests management
scouting

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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 soybean. She has a general background in integrated pest management for field crops. Erin's current extension and...

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