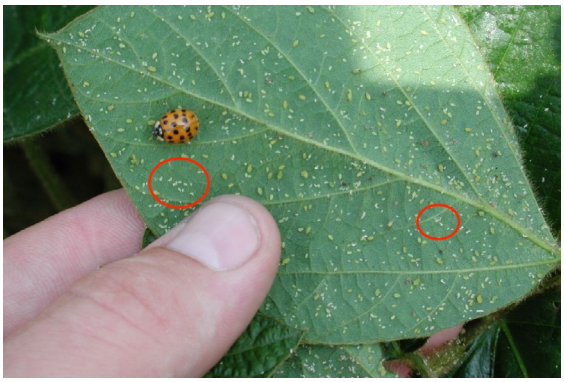
Critical Know-How in Scouting Soybean Aphids

Scouting for soybean aphids has become second nature to us over the last ten years. There are several approaches to management and controlling them. To make the correct management decision, it is important to know where soybean aphids came from and how they spread.

- Soybean aphids came into the United States from Japan in 2000, and by 2004, they were found in most areas of the Midwest
- Aphids overwinter as eggs, laid on buckthorn. When buckthorn starts to flower, the aphids undergo a generation change and move into the soybean fields. This happens around mid-June, but depends on the weather in the spring. Aphids prefer warmer temperatures, ideal is 77-82 degrees.
- After the aphids have colonized on the soybeans, they undergo up to 18 reproductive cycles. Because wingless aphids reproduce asexually, the populations double in roughly two to three days.
- Typically, aphids do not move very far because most generations don't have wings, but some are able to adapt to increasing populations and may develop wings. When they do, aphids have the capability to move up to 6 miles per day.



Scouting Tips

There are two scouting methods that are both effective in determining whether treatment is needed or not:

Traditional Method:

- Start scouting mid-June
- Select plants throughout the area that need to be scouted
- Count aphids on leaf/plant
- Determine if treatment is needed - economic threshold is 250 aphids/plant
- Scout until plant reaches reproductive stages R5-R6 or aphid count decreases

*Speed Scouting:

- Start scouting mid-June
- Look at a minimum of 11 plants (max of 30)
- If you get to 40 aphids, stop and consider that plant infested. Move on to the next plant.
- If you do NOT reach 40, consider it not infested. Move on to the next plant.
- Consider treatment if 11 plants are infested with 40 aphids or more.
- If not at treatment level, rescout in 3-4 days
- Scout until plant reaches reproductive stages R5-R6 or aphid count decreases

Take Action

Conventional Growers:

- Variety Selection: Aphid tolerant varieties are extremely limited. Albert Lea Seed does carry a conventional soybean variety, 2188AT12N, which carries two genes for aphid tolerance.
- Insecticide Use: Consult your agronomist for insecticides that are helpful in controlling aphids. At threshold levels, it pays to spray before growth stages, R5 or R6.
- Buckthorn: Buckthorn has mutated over the course of several years making it nearly impossible to kill. It continues to be widely distributed in the Upper Midwest.

Organic Growers:

- Variety Selection: Choose an appropriate variety for the field. There are several varieties on the market that are tolerant to soybean aphids, such as Albert Lea Seed's organic soybean varieties Viking O.2188AT12NUP, O.1955AT, O.0654AT, O.1544AT, and O.IA2113RA12. Check our website for maturities on these varieties.
- Insecticide Use: Several OMRI-approved insecticides are available for use in organic farming systems. Albert Lea Seed customers have reported success with Pyganic (OMRI listed). OMRI listed, organic insecticides have little or no residual activity.
- Buckthorn: Buckthorn has mutated over the course of several years making it nearly impossible to kill. It continues to be widely distributed in the Upper Midwest.

Following treatment, aphids number may increase, so (observing reentry field restrictions) scouting should continue until population numbers begin (or continue to) decline below threshold levels.

Summary

Soybean aphids are insects that can cause tremendous yield loss if they are not found in time. Yield can be reduced up to 50% by decreasing the photosynthetic rate. Infestions that occur later in the season only seem to reduce seed size. Keeping good field history notes and choosing resistant varieties for known infected fields are the best management practices at this time.

Resources:

1. Scouting for soybean aphid - https://extension.umn.edu/soybean-pest-management/scouting-soybean-aphid
2. Guidance for insecticide rotations for pyrethroid-resistant soybean aphid - https://blog-crop-news.extension.umn.edu/2019/08/guidance-for-insecticide-rotations-for.html
3. Efficacy and Nontarget Effects of Reduced-Risk Insecticides on Aphis glycines (Hemiptera: Aphididae) and Its Biological Control Agent Harmonia axyridis (Coleoptera: Coccinellidae) - https://academic.oup.com/jee/article-abstract/101/2/391/902773?redirectedFrom=fulltext
4. *Speed Scouting for Soybean Aphid form- https://crops.extension.iastate.edu/blog/erin-w-hodgson/try-speed-scouting-soybean-aphid-year