

Soybean Aphid

Pest Facts and Impact on Crop

- Latin name is *Aphis glycines* Matsumura
- Importance
 - Origin in Asia
 - First detected in US near Lake Michigan in 2000
 - Major outbreaks in 2001, 2003, 2005
 - Untreated economic infestations frequently reduce yields by more than 10 bu/acre
- Development
 - Overwinter on buckthorn, move to soybeans in July and back to buckthorn in the fall
 - Host plants include a wide range of legumes (soybean, alfalfa, clovers)

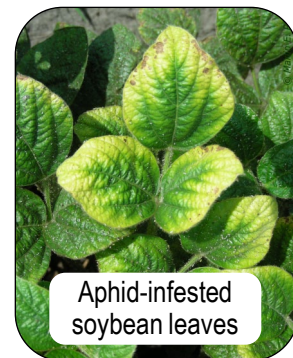


Pest Symptoms/Injury ID

- Shortened plant height
- Curled leaves, often yellow on outside (similar to potassium deficiency)
- Excessive honeydew on leaves, which promotes sooty mold growth
- Presence of ants, which also feed on the honeydew

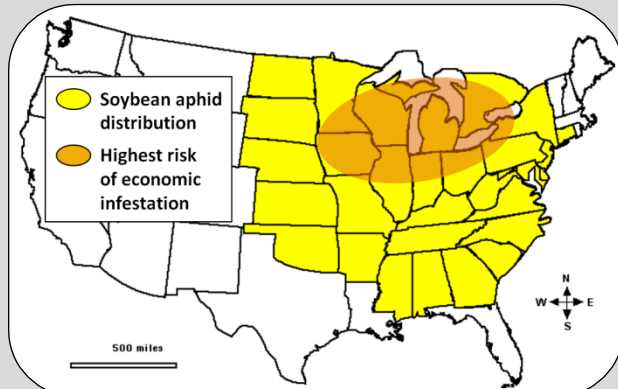


Plants infested by soybean aphid are shorter (left)



Aphid-infested soybean leaves

Distribution



Soybean aphid distribution and area of increased probability of economic infestation

Causes of Yield Reduction

- Removal of moisture, nutrients needed for grain production
- Honeydew on leaves where sooty mold grows, which reduces photosynthesis
- Transmission of viruses



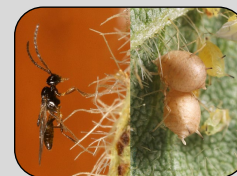
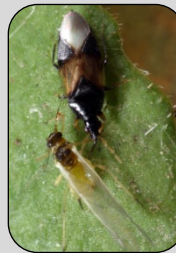
Soybean leaves blackened due to sooty mold

Natural Enemies

- Asian lady beetle – adult or larvae
- Chrysopa/Lacewing – adult or larvae
- Syrphid fly – larvae
- Predatory bugs – Minute pirate bug, Big-eyed bug, Damsel bug, etc.
- Bio-control agent = Parasitic wasp – *Binodoxys communis*
- Various fungal diseases



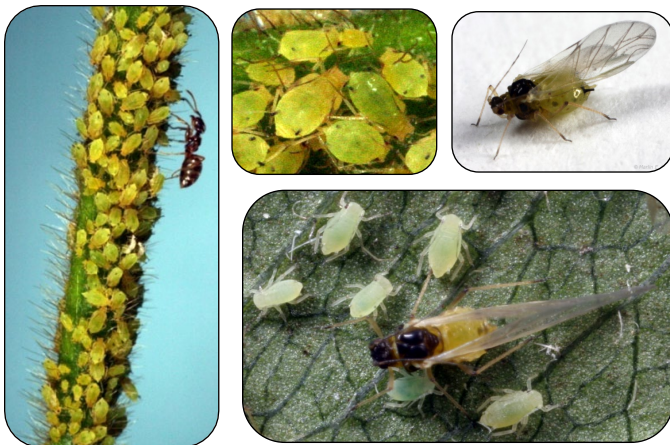
Lady beetle feeding on aphids



Aphid parasitized by wasp

Pest ID

- Soybean aphids are small
 - Less than 1 mm in length
 - Oval or pear-shaped
- Color is typically light green
- Adults may or may not have wings
 - Winged adults have black head/thorax
- Cornicles are distinguishing characteristic
 - Black "tail pipes" projecting from the rear of the abdomen
- Aphids develop by gradual metamorphosis in three stages:
 - Egg (fall and winter only)
 - Nymph (resemble small adults)
 - Adult (may or may not have wings)



Soybean aphid nymphs and adults

Management Practices

- Population factors
 - Consider using seed treated with a nicotinoid insecticide to delay soybean aphid population establishment, especially in late plantings
 - Temperatures in the low to mid 70s promote longevity and reproduction (doubling time is less than two days)
- Allow lady beetles, insidious flower bugs, and other beneficial insects to suppress populations

Management Practices

- Scout fields in July
 - Use economic threshold of 250 aphids per plant to justify insecticides
- Insecticide control
 - Spray fields before aphids reach 1,000 per plant and plant stage R5.5



- Plant resistance
 - Natural antibiosis – Monitor varieties with least antibiosis first
 - Natural antixenosis
 - Future Pioneer® brand varieties with array of *Rag* genes may reduce need to spray

Life Cycle of the Soybean Aphid (*Aphis glycines* Matsumora)

