

Soybean aphid – a recap of what we know

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World distribution: Soybean aphid (SBA), *Aphis glycines*, is native to China, Japan, Korea, and other parts of Asia. In 1999 it was discovered in Australia, although soybean production is limited in that country.

US distribution: SBA was first reported in the Americas in Wisconsin, in mid-July 2000, then in Michigan in early August of 2000. By the end of last year, it was found in eight midwestern states.

Introduction: We do not know how SBA was introduced into this country.

Body forms: SBA adults may be winged ("alate") or non-winged ("apterous"). Both of these forms are mature and can produce offspring. Winged individuals are produced at certain times of the year (spring, fall) or in response to crowding on a plant. Their job is to fly to find new host plants and deposit nymphs. Non-winged females are baby-making machines whose job is to grow the colony.

Summer populations: During the summer, all SBA in the field are female. These females reproduce by parthenogenesis, i.e., nymphs develop from unfertilized eggs. No males are present during the summer. Females give live birth to female offspring, which mature and give birth in a matter of days.

Fall populations: Soybean aphid feeds late into the fall until plants dry down. In September, a generation of males is produced. They mate with females, and females fly to an overwintering host to lay eggs.

Overwintering: SBAs overwinter as eggs. In China, eggs are laid on shrubs in the genus *Rhamnus* (common name is buckthorn). In the US, *Rhamnus cathartica* (common buckthorn) was a confirmed overwintering site in 2000. We also have confirmation that eggs hatched in the spring and that aphid nymphs fed on buckthorn.

Spring movement: Winged SBAs presumably move from buckthorn and deposit nymphs on early-planted soybeans. The first SBAs in the Midwest were found in several states during the week of June 11.

Damage: In 2000, heavy SBA infestation caused leaf symptoms, yellowing, stunting and poor pod fill, as well as problems with honeydew and sooty mold. SBA is a vector of several soybean viruses.

Control: There are no thresholds yet for SBA. Chinese literature states one should spray when "10,000s" of aphids are found on plants. This season, researchers across the region are working to follow the life cycle, determine

the impact of natural enemies, develop thresholds, measure yield loss and find varietal differences.