



## Soybean aphid overwintering

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Soybean aphid overwinters in the egg stage throughout the winter. Egg hatch occurs first in Indiana (usually in March), progressing into Michigan in late March or early April.

Observations over the last few springs show that aphid colonies are usually found closer to the ground rather than up in the buckthorn canopy. For example, at the MSU Crop and Soil Sciences farm, we find the most aphids on the branch tips of scrubby low-growing shrubs regrowing from cut buckthorn stumps. Low growth may be more attractive for egg laying in the fall, or egg survival may be greater under the snow pack closer to the ground.

In each generation on buckthorn, a portion of the aphid population is winged as adults. The winged adults leave buckthorn to find their summer host, soybean. With each generation, the proportion of winged migrants is larger so that by the third generation, most or all of the aphids have wings and leave buckthorn.

The first aphids that leave buckthorn probably do so before soybean is planted or emerges; many of these first migrants may die. But as the season progresses, the aphids find fields to colonize. In parts of Michigan where we know buckthorn is common, my students find soybean aphid on plants at the V1 stage - small plants with a single leaflet.

In areas lacking buckthorn (for example, the counties in southwest Michigan), colonization is later. The winged aphids colonizing these fields are actually produced in soybean fields colonized early in the spring, perhaps many miles away. In 2003, fields in Van Buren County were not colonized by aphids until early July. Interestingly, we first found aphids several days after a storm front moved across the region from west to east. I suspect that winged aphids from Minnesota, Iowa and Wisconsin, states with large areas of buckthorn, are carried by the weather front and deposited across southern Michigan and northern Indiana. Another area lacking buckthorn is the eastern edge of the Thumb. Extension agents in that part of the state report that aphids seem to infest fields from west (Saginaw County with large areas of buckthorn) to east (Sanilac and Huron Counties with no or little buckthorn).

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