



Common buckthorn in the United States *This USDA map shows buckthorn distribution by state.*

The I-80 Rule

“North of Interstate 80, the distribution of common buckthorn is incredible throughout Minnesota, Wisconsin and northeast Iowa,” says Rob Venette, assistant entomology professor at the University of Minnesota. “In Minnesota, we’re looking at buckthorn stands in excess of 10,000 plants per acre.”

What’s the I-80 rule? “If you’re north of I-80, there’s a reasonable connection between common buckthorn and the aphids in your soybean fields,” says Rob O’Neil, associate entomology professor at Purdue University. “South of I-80, your aphids are coming from other soybean fields.”

So the farther north you live, the closer you live to buckthorn, and the earlier you’ll likely have aphid infestations. If you live further south, you’ll likely see aphids later, and they’ll be coming from your northern neighbors’ fields.



Courtesy of Chris DiFonzo, MSU

Winged females in the spring

If the eggs survive, in the spring they hatch and grow into wingless female aphids. The second generation in spring has a higher percentage of winged females. By the fourth generation on the buckthorn, every aphid born will develop wings.

Then this mass of winged females flies off in search of soybean fields to colonize. That’s usually in early to mid-June. And that’s when growers need to start scouting soybean fields regularly.

Courtesy of Chris DiFonzo, MSU



Shedding their skin *Soybean aphids shed their skin (molt) three times and have four growth stages (instars). Shed skins can be confused with eggs, aphids – and even spider mite skeletons.*

Courtesy of Chris DiFonzo, MSU



How they move *“An aphid infestation front can move three to six miles a day,” explains Dave Voegtlin, entomologist at the Illinois Natural History Survey. “The numbers coming from a single field are staggering. There are millions, and they fly up, catch the air current and the wind carries them as they fly. I call them ‘aerial plankton.’”*

Take her temperature

Research results from the University of Minnesota show that at:

- -29°F – aphids eggs freeze
- 40°F or cooler – reproduction stops
- 70-80°F – ideal temperature range for aphid reproduction & development
- 95°F – aphids die

How fast can a soybean aphid reproduce?

Data generated in the lab by Ragsdale et al., University of Minnesota

Temp	Life span (days)	First babies (# days)	Total # babies	Doubling time (days)
68°F	22	7	75	2
77°F	15	5	73	1.5
86°F	12	5	23	2
95°F	3 (die)	–	0	dead

And you thought rabbits were fast *If this chart doesn’t keep you awake at night, nothing will. While this data was generated in the University of Minnesota laboratory look how many aphid babies were produced when temperatures ranged from 68°F to 77°F.*