

1. How important is SCN and where does it come from?

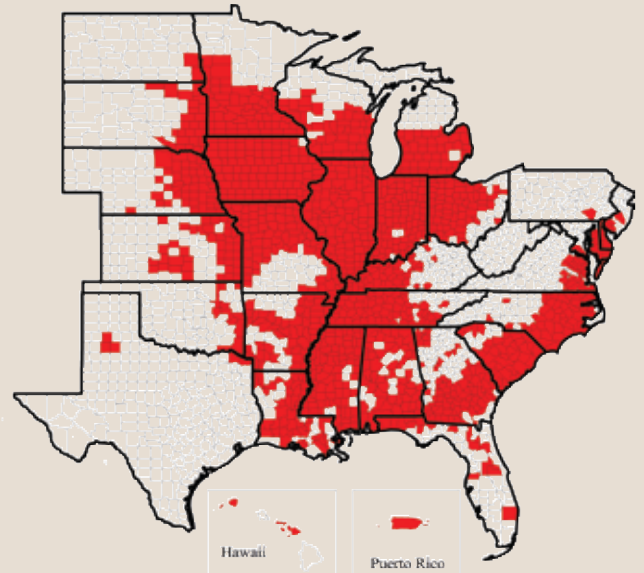
Soybean cyst nematode (SCN), or *Heterodera glycines*, is the most destructive pathogen of soybean in North America. Soybean producers in the United States lost more than 300 million bushels to the soybean cyst nematode from 2003 to 2005. More yield is lost to SCN than any other soybean pathogen.

At present, soybeans are planted on more than 70 million acres in North America. SCN is widely distributed in all major soybean production areas of the United States (see map, right).

SCN was first found in the Western Hemisphere in North Carolina in 1954. Before then, SCN was known in China, Japan and Korea. The nematode now occurs in all major soybean production areas worldwide, including both North and South America.

The nematode may have been introduced into the United States several times during the late 1800s in soil imported from Asia for the purpose of obtaining bacteria to nodulate soybean roots. SCN can be spread by anything that moves soil: wind, water, animals (especially birds) and machinery.

Documenting the economic impact of SCN is difficult because many producers suffer declining yields for several years without knowing that they have SCN. Planting the SCN-resistant variety Forrest in the southern United States on farms with known SCN infestations prevented \$401 million in crop loss during 1975-1980, while the cost of developing Forrest was less than \$1 million. SCN is much more widespread today, and SCN-resistant varieties prevent even more crop loss.



Map
Distribution of known soybean cyst nematode infestations in the United States in 2008. (Riggs and Tylka)



No Symptoms
SCN-resistant and -susceptible varieties growing side-by-side in a heavily infested soybean field. There is no way to tell which is which by looking at the plants. In this field, the resistant variety yielded over 30 percent more than the susceptible.