

RESPONSE OF SOYBEAN CYST NEMATODE AND PLANT GROWTH TO COMBINATIONS OF PURPLE DEADNETTLE, ANNUAL RYEGRASS, AND SOYBEANS. Valerie A. Mock, J. Earl Creech, and William G. Johnson. Graduate Research Assistant, Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN 47907, Assistant Professor, University of Nevada Cooperative Extension, University of Nevada, Fallon, NV, and Associate Professor, Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN 47907.

In soybean producing regions of the United States, soybean cyst nematode (*Heterodera glycines*; SCN) has become one of the most economically important pathogens. At least six winter annual weeds can serve as alternate hosts to SCN. The winter annual weed purple deadnettle (*Lamium purpureum*) and SCN-susceptible soybean (*Glycine max*) are known hosts of SCN. Annual ryegrass (*Lolium multiflorum*) and SCN-resistant soybeans are non-host species to SCN and have also been reported to reduce the SCN population density. The objective of this greenhouse experiment was to evaluate the influence of combinations of these plant species on SCN population density and plant growth. This experiment had three plant species, annual ryegrass, purple deadnettle, SCN-resistant soybean, and SCN-susceptible soybean, grown at one or zero plants per pot. Seeds were planted into one liter pots and allowed two weeks of growth to establish roots. Each pot was then inoculated with 10,000 SCN eggs, fertilized weekly, and watered when needed. Eight weeks after the experiment was initiated, plant biomass was harvested. Roots were harvested and SCN cysts and eggs were counted, and dry weights were collected. Results from this experiment suggested that purple deadnettle dry weight is reduced when in competition with the SCN-susceptible soybean and/or annual ryegrass. The SCN-resistant soybean dry weight was reduced when grown in competition with purple deadnettle and/or annual ryegrass. The number of cysts per gram of root suggests that the SCN-susceptible soybean is a less compatible host than purple deadnettle. The number of cyst per pot showed similar results as the number of eggs per pot. When the two SCN-susceptible plants were grown together the number of cysts and eggs were highest. It also showed that if there were one or two susceptible plants in a pot with one resistant plant SCN numbers were reduced compared to pots with susceptible host(s).