

Italian Ryegrass As A Potential Tool To Manage Winter Annual Weeds And Soybean Cyst Nematode. Mark M. Menke\*, S. Kent Harrison, and Ramarao Venkatesh, Graduate Research Associate, Professor and Research Associate, Department of Horticulture and Crop Science, The Ohio State University, Columbus, OH 43210.

Soybean cyst nematode (SCN) causes more economic damage to U.S. soybean producers than any other soybean pathogen. Purple deadnettle, a common winter annual weed in the eastern U.S. Corn Belt, is an alternate host of SCN. We are investigating the potential of Italian ryegrass (*Lolium multiflorum*) as a cover crop for suppression of purple deadnettle. In a field experiment, there was an approximate 3-fold decline in purple deadnettle population density across all treatments from November 2003 to April 2004. Purple deadnettle population densities were suppressed 55% by Italian ryegrass from November through April. In a greenhouse experiment, replacement series analysis of Italian ryegrass-purple deadnettle mixtures indicated a strong compensatory reaction in which Italian ryegrass increases in shoot dry weight were significantly greater than those expected in monoculture, and these increases were offset by corresponding reductions in purple deadnettle shoot dry weight. At a constant density of 16 plants per pot, Italian ryegrass proportions of 25 and 75% comprised 72 and 97%, respectively, of the total shoot biomass in Italian ryegrass-purple deadnettle mixtures. These data indicate that Italian ryegrass strongly suppressed purple deadnettle establishment and growth; however, reduced populations of purple deadnettle in Italian ryegrass were capable of persisting over the winter and reaching maturity in the spring. First-year results suggest that weed control measures in addition to an Italian ryegrass cover crop may be necessary to prevent SCN reproduction on purple deadnettle.

