

WINTER ANNUAL WEED INFLUENCE ON SOIL TEMPERATURE AND SOYBEAN CYST NEMATODE POPULATION DENSITY. Valerie A. Mock, J. Earl Creech, 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.

Winter annual weeds are problematic in row crop production due to the reduced reliance of residual herbicides, and the increased adoption of conservation tillage. Six winter annual weeds have been found to be alternate hosts to soybean cyst nematode (*Heterodera glycines* Ichinohe; SCN). The strongest known winter weed hosts are purple deadnettle (*Lamium purpureum*), and henbit (*Lamium amplexicaule*). We have shown that SCN can reproduce on purple deadnettle during the fall after soybeans have been harvested. If winter annual weeds are uncontrolled they may keep soil temperatures cooler in the spring and delay planting. The objectives of this study were to determine if fall or spring winter annual weed removal timing influenced SCN population densities and if winter weeds influence soil temperature. This experiment was established in 2006 at the Agronomy Center for Research and Education (ACRE) in West Lafayette, IN. This experiment had two plant species, SCN-susceptible soybean and *Lamium spp.* The soybeans were present at densities of zero or 108 m<sup>-2</sup> and the *Lamium spp.* were present at densities of zero or 161 m<sup>-2</sup>. Four winter weed removal timings were established which included no weed removal, or October, December, or May weed removal. At these removal timings soil samples were collected for SCN egg extraction and enumeration. Soil temperatures were monitored throughout the year. Effects of SCN-susceptible soybean and *Lamium spp.* on SCN population density will be presented. Temperature data from this experiment showed no differences in plots with soybean, *Lamium spp.*, both species, and fallow ground in spring.