

EFFECT OF WINTER ANNUAL WEED MANAGEMENT ON SOYBEAN CYST NEMATODE POPULATION AND WEED 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.

Six winter annual weeds have been reported to be alternate hosts to soybean cyst nematode (*Heterodera glycines* Ichinohe; SCN). These winter annual weeds include purple deadnettle (*Lamium purpureum*), henbit (*Lamium amplexicaule*), field pennycress (*Thlaspi arvense*), shepherd's-purse (*Capsella bursa-pastoris*), small-flowered bittercress (*Cardamine parviflora*), and common chickweed (*Stellaria media*). One cool season perennial mouseear chickweed (*Cerastium vulgatum*) has also been reported as being an alternative host for SCN. In addition, we have shown that SCN can reproduce on purple deadnettle during the fall after soybeans have been harvested. The objective of this study was to determine if SCN population density and weed densities are influenced by winter annual weed management. Field trials were established in 2003 at the Southwest Purdue Agricultural Center (SWPAC) in Vincennes, IN and the Agronomy Center for Research and Education (ACRE) in West Lafayette, IN. This experiment had two crop rotations: soybean-corn and continuous soybean. Treatments for weed management included two cover crops which were winter wheat (*Triticum aestivum*) and fall-seeded annual ryegrass (*Lolium multiflorum*). Winter weed control treatments with glyphosate included an untreated control, fall and spring control, spring control, and fall control. After establishment, the treatments remained on the same plots throughout the entire experiment to determine long term treatment effects over time. Weed counts and soil samples for SCN egg enumeration were collected in the spring at planting and in the fall after harvest. Treatment effects on SCN population density were only significant at the ACRE location and had a three way interaction with weed management, rotation, and season. Treatment effects on SCN egg counts will be discussed. Herbicides were more effective than cover crops at reducing the amount of weeds in the spring weed counts.