

WINTER ANNUAL WEED MANAGEMENT AND THE IMPACT ON SOYBEAN CYST NEMATODE. Kelly A. Nelson, William G. Johnson, and Jim Wait, Assistant Professor, Department of Agronomy, University of Missouri, Novelty, MO 63460; Assistant Professor, Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN 47907; and Research Specialist, Department of Agronomy, University of Missouri., Columbia, MO 65211.

Winter annual weeds may serve as alternative hosts of soybean cyst nematode (SCN) while an increase in winter annual weeds in no-till production has been related to a reduction in residual weed management systems. Research evaluated the impact of winter annual weed management and residual weed management in corn and soybean on winter annual weed control and the impact on soybean cyst nematode egg populations from fall, 2001 to spring, 2003 at Columbia and Novelty. The primary winter annuals at Columbia were henbit and common chickweed while the predominant winter annual at Novelty was henbit. Control of winter annual weeds with preemergence herbicides applied in the spring 2001 and 2002 were compared to a fall 2001 and fall 2002 application timing, respectively. Treatments were maintained on the same plots during the 2001 and 2002 cropping seasons.

In soybean, spring 2002 applied chlorimuron at 0.04 kg ai/ha plus sulfentrazone at 0.22 kg ai/ha, fall 2002 applied chlorimuron at 0.04 kg/ha plus sulfentrazone at 0.22 kg/ha, fall 2002 overseeded ryegrass at 28 kg/ha, and fall 2002 overseeded winter rye at 112 kg/ha reduced winter annual total dry weights 46, 100, 65, and 25%, respectively, in the spring 2003. All treatments reduced SCN eggs/200 cm³ similar to the untreated control except winter rye. Overseeded winter rye increased SCN population 65% when compared to the untreated control in soybean. In corn, spring 2002 applied atrazine at 2.2 kg ai/ha, fall applied simazine at 1.1 kg ai/ha plus tribenuron at 0.018 kg ai/ha, fall 2002 overseeded ryegrass at 28 kg/ha, and fall overseeded winter rye at 112 kg/ha reduced winter annual total dry weights 41, 99, 88, and 84%, respectively, in the spring 2003. None of the treatments reduced SCN egg/200 cm³ populations when compared to the untreated control.

Residual herbicides applied in the spring reduced total winter annual dry weights the following spring. The change in SCN populations for spring or fall applied weed management systems was similar to the untreated control.