

ITALIAN RYEGRASS CONTROL PRIOR TO NO-TILL. Ron A. Hines, Senior Research Specialist, Department of Crop Sciences, University of Illinois, Dixon Springs Agricultural Center, Simpson, IL 62985.

The use of some winter annual cover crops for soil erosion control prior to no-till crops can lead to significant weed control problems the year following the cover crop if seed development is not prevented. One such cover crop is Italian ryegrass. Volunteer plant development from the seed produced by escape plants can occur the following fall or early spring. Control of these plants in the spring prior to no-till crop production is just as important for the elimination of future weed pressure.

The objective of this study was to evaluate spring herbicide applications for control of volunteer Italian ryegrass prior to no-till crop production. The herbicide treatments included single and combination treatments of glyphosate, AMS, paraquat, atrazine and metolachlor.

Italian ryegrass seed was broadcast over the entire trial area at 66 kg/ha on October 23, 2001. The trial area was chopped for forage on May 28, 2002. After allowing regrowth the entire trial area was sprayed with 1.68 kg ae/ha on June 19, 2002. Any surviving plants were allowed to mature and produce seed. Emerging plants from those that produced seed were treated with various herbicide treatments on March 25, 2003. The Italian ryegrass plants were 10 to 25 cm in height and in the late tillering stage of growth.

Control results 14 days after application indicated that control continued to significantly increase as the glyphosate rate increased to the high use rate of 3.37 kg ae/ha. At that rate control was 80%. The addition of 1% AMS significantly increased control to 89%. The use of paraquate+atrazine provided 76% control. The combination of paraquate+atrazine+metolachlor provided 83% control. The combination of glyphosate+atrazine+metolachlor provided only 45% control.

Control results 28 days after application significantly increased for the treatments containing combinations with atrazine, while the glyphosate treatments remained constant or declined. The treatments of paraquate+atrazine and paraquate+atrazine+metolachlor increased to 90% control. This was significantly better control than the high rate of glyphosate+AMS at 83%, and the combination of glyphosate+atrazine+metolachlor at 73%. The glyphosate rate of 0.84 kg ae/ha produced less than 50% control.

These control results with these herbicide treatments indicate that significant seed production from surviving plants could produce continued volunteer weed pressure at least two years after the establishment of the Italian ryegrass cover crop.