

PROJECT REPORT, 2007
(Funded Proposal)

Title: Evaluation of Weed Suppression Provided by a High-Residue Clover Cover in Conservation-Tillage Soybean.

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Progress to date: A field study was conducted in glyphosate tolerant, sulfonylurea tolerant, and conventional soybean at E.V. Smith and Tennessee Valley Agricultural Experiment Stations. The study is a factorial treatment arrangement consisting of three levels: winter cover (rye present or absent), early season residual (either Valor at planting or none), and postemergence herbicide system (glyphosate, Synchrony, or HADSS (Herbicide Application Decision Support System; <http://www.webhadss.ncsu.edu/LocationIntro.asp?Location=Alabama>) recommended applied EPOST, POST, sequential, or none). Rye was established in half the plots as winter cover preceding a soybean crop managed in a conservation tillage system. In the spring, the winter cover and emerged weeds in fallow plots was terminated with a glyphosate application. Soybean was established in four row (30 in. spacing) plots 20 ft in length. Each treatment was replicated 4 times. Weed biomass and soybean response (soybean height and yield) was evaluated.

Results: Unfortunately at E.V. Smith, the dry experimental area received extremely little rainfall after planting and the soybean stand was not established. After replanting, no subsequent rainfall occurred to facilitate germination and the experiment was lost. The experiment is being repeated again this year. At Tennessee Valley, the experiment was established but yields reflected the extreme drought (Tables 1 and 2).

The RoundUp™ system provided higher weed control and yield compared to the conventional or STS™ herbicide systems for both winter fallow or the rye cover crop conservation-tillage systems. Yield reflects weed control performance of each system. It is important to note that while yield was poor due to drought, yield was increased when rye was utilized as a cover crop.

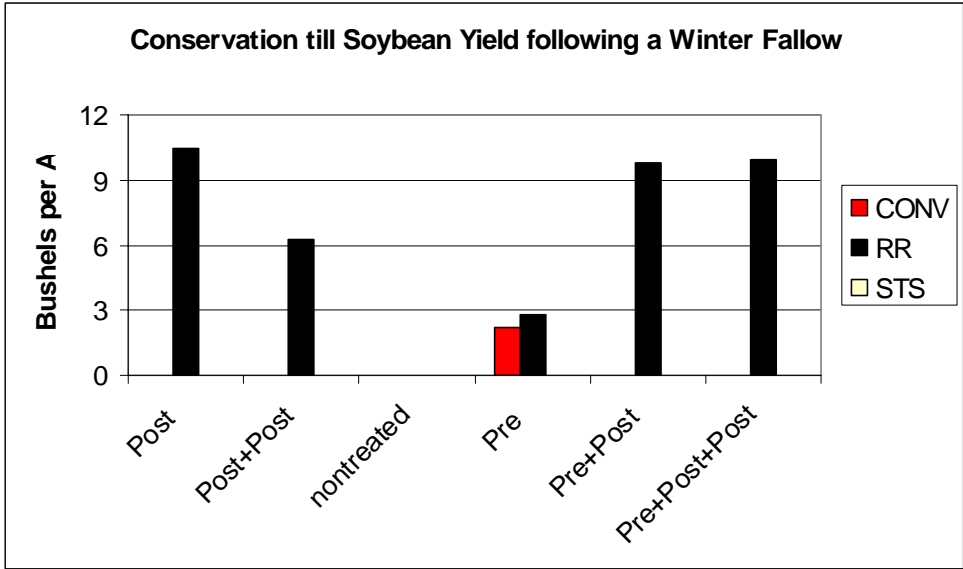


Figure 1. Soybean yield following winter fallow and different herbicide intensities.

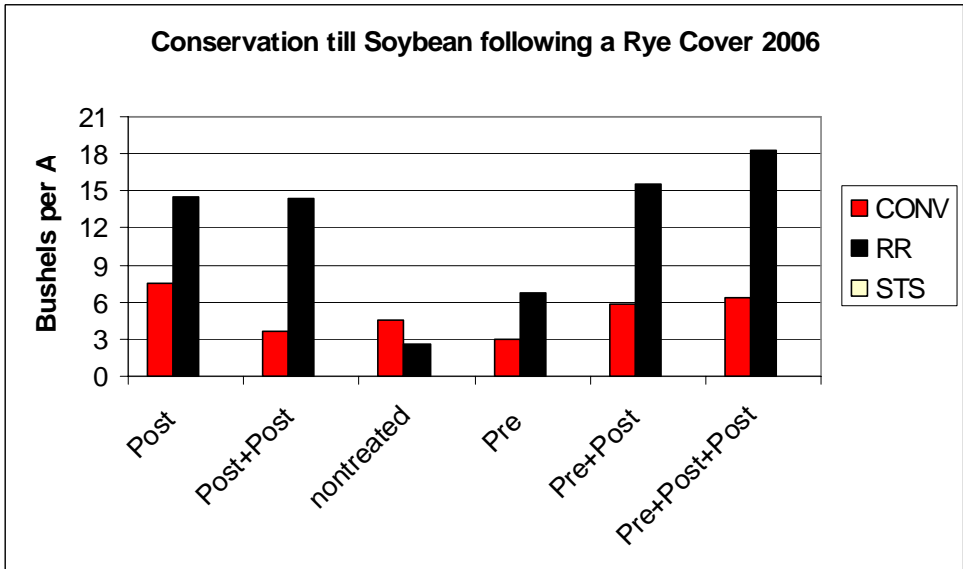


Figure 2. Soybean yield following a rye winter cover crop and different herbicide intensities.