

ECONOMIC ASSESSMENT OF IRRIGATED AND NONIRRIGATED SOYBEAN CROPPING ROTATIONS ON A CLAY SOIL

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ABSTRACT

Experiments were conducted in Keiser, Arkansas, on a Sharkey silty clay soil for 3 years to examine soybean, wheat, and grain sorghum rotations. Treatments also included selected variation of conventional versus no-till and alternative wheat residue management. Both irrigated and nonirrigated strategies were investigated. Agronomic results show that irrigated soybean yields average about 20 bu/A

(1344 kg/ha higher than comparably treated nonirrigated soybean treatments. Economic analysis using enterprise budgets reveals three top rotations, regardless of irrigation: continuous monocropped soybean, wheat fallow followed by monocropped soybean, and wheat-soybean double-cropped with burned wheat stubble. Statistical analysis demonstrates the profitability of irrigation and the dependence of the most economical crop rotation upon weather conditions.