

DRY CLAY SOIL MANAGEMENT FOR FULL SEASON AND DOUBLE CROP SOYBEAN

T.C. Keisling¹, E.D. Vories², L.R. Oliver¹, P.L. Tacker³, M.P. Popp⁴, and E.C. Gordon³

AUTHORS: ¹Dept. of Crop, Soil, & Environ. Sci., Univ. of AR, NEREC, Keiser, AR 72351; ²Dept. of Biological Eng., Univ. of AR, NEREC, Keiser, AR 72351; ³Cooperative Extension Service, Univ. of AR, NEREC, Keiser, AR 72351; and ⁴Dept. of Agri. Econ., Univ. of AR, NEREC, Keiser, AR 72351. Corresponding author: T.C. Keisling (tkeislin@comp.uark.edu).

ABSTRACT

Experiments were conducted at the Northeast Research and Extension Center in 1998 and 1999 to evaluate planting methods in a dry clay soil. In 1998, only a full season trial was established. In 1999, both a full season and a double crop trial were established. The planting methods in the full season were conventional 38-inch rows, drill planting, and 'hipper planting'. 'Hipper planting' is the broadcasting of soybean seed to simulate a custom application and using bedding hipers after planting. The beds are then flattened with a field roller. Immediately after rolling the beds, the 'hipper planted' plots were furrow irrigated. The other plots were maintained in accordance with the normal practices of the area. The double crop trial had only drill planted and 'hipper planted' methods in standing straw and burned straw.

In 1998 when planting was done under dry soil conditions followed by a dry period, 'hipper planted' resulted in more than a 16 bu/A yield increase in the full season trial. The 1999 results for full season showed no difference in yield for any of the planting methods. Yield averaged 62 bu/A. This showed that under conditions where there is adequate moisture at planting time, 'hipper planting' does not reduce yields. In 1999, on double cropped soybean planted in July, the 'hipper planting' yielded over 15 bu/A less than no-till drill planted or shallow seedbed preparation drill planted. It was observed that at this late planting date insufficient soybean growth occurred, and canopy coverage was much less than drill planting. Burning the wheat straw in seedbed preparation resulted in a consistent 6 bu/A yield increase regardless of planting method.