Excerpt from the Helms Farm Research Report, 2001

Narrow Row Cotton Evaluation (Field 5f)

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Objective: The objective of this experiment was to evaluate cotton yield and water use efficiency as affected by row spacing and cotton variety using ultra narrow row (UNR) cotton management.

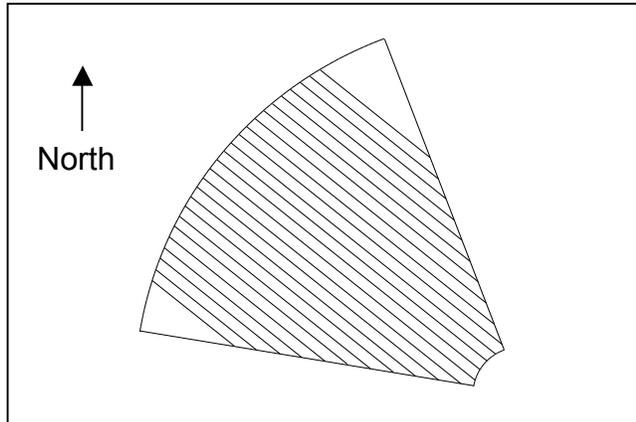Figure 1. Planting cotton into terminated wheat at TAES, Helms Farm, 2001.

Figure 2. Plot layout of UNR cotton irrigation experiment in a 20-acre area under the Helms pivot. All plots were irrigated with LEPA applicators spaced 5 ft apart and traveling perpendicular to the planted row direction.

Methodology: Cotton was flat planted using a narrow row planter on a 20-acre area into terminated wheat. Cotton drill spacings were 7.5, 15, and 30 inches and varieties planted were Paymaster 2326RR and Paymaster 2156RR. Treatments were replicated four times with plot size of 40 ft by a minimum of 300 ft. Figure 1 shows the general field layout of the experiment. All treatments were irrigated identically with irrigation quantities higher than normal due to the high narrow row plant populations. Seasonal irrigation totaled 15 inches. Plots were both hand and machine harvested.

Results: Table 1 contains hand harvested lint yield based on row configuration and cotton variety. The first year's data show small differences in the yield due to row spacings within the PM2156RR variety. There was a reduction in yield of the 30-inch spacing treatment compared to more closely spaced plants within the PM2326RR variety. Large varietal differences occurred in 2001.

Expectations: UNR cotton production may give producers an additional efficient water management alternative to LEPA in fields with excess slope or

Table 1. Row spacing effect on cotton lint yield (lb./acre) of two varieties at TAES, Helms Farm, 2001.

Variety	Row Spacing		
	7.5 inches	15 inches	30 inches
PM 2156RR	1578	1496	1528
PM 2326RR	1194	1200	1015

poor infiltration.