Comparison of Conventional and Conservation Tillage Systems for Cotton, 2003 (Field 5 DE)

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Objective: The objective was to investigate the potential water savings and management problems of conservation versus conventional tillage of cotton.

Methodology: Stoneville 4892BR was planted in four tillage treatments following corn produced in 2002. These treatments included conventional tillage (shred, disc, list, rolling cultivator, rod weed, in-season cultivation) alone or in combination with a para-till and no-tillage alone or in combination with a para-till. ST4793RR was planted in an adjacent conventional tillage, continuous cotton area. Herbicide treatments in the no-till system included Roundup WeatherMax preplant for winter weeds, Prowl at 3.5 pt/A applied and water incorporated prior to planting, two postemergence topical and postemergence directed Roundup WeatherMax applications during the season.

Figure 1. Cotton plants growing in corn residue.

Results: Good stands were achieved in all treatments except the no-till + para-till. Effective pigweed, volunteer corn, and venice mallow control was achieved in all treatments. Highest yields were produced in the conventional tillage cotton/corn rotation and lowest yields in the continuous cotton system (Table 1).

Table 1. Cotton yield as influenced by tillage systems and variety.

System	Variety	Yield (lb/A)
Continuous cotton	ST 4793 RR	1267 c
Corn-cotton rotation		
Conventional + paratill	ST 4892 BR	2062 a
Conventional	ST 4892 BR	1993 a
No-till	ST 4892 BR	1683 b
No-till + paratill	ST 4892 BR	1648 b