

MINIMUM TILLAGE AND SEEDING AND DOUBLE DISKING AND CONVENTIONAL SEEDING ON SECOND CROPPING

In 1976 there was no significant difference in wheat production between minimum tillage and conventional tillage on second cropping. Growing conditions were excellent in 1976.

In 1977, hot, dry spring weather conditions were not particularly favorable to germination and early crop growth because of dry surface soil. Because of the small diameter of the rotating coulters on the John Deere 1500 Power Till Seeder, it was not possible to place seed deep enough to get it into moist soil. As a consequence, germination was spotty and delayed until later rainfall came. Excessive weed growth was also a problem on this treatment. Penetration of the surface soil and satisfactory seed placement was not as difficult with the Melroe 701 Minimum Tillage Drill. Germination and growth was satisfactory and production was double that for the Power Till Seeder. Conventional disking and seeding was the best production method in the 1977 comparison.

In 1978 and 1979 only the Melroe 701 and the conventional tillage and seeding treatments were compared. Initial growth was slower on the minimum tillage treatment. This may be partly due to lower surface temperatures caused by the reflective and insulating effects of the straw and stubble on the field surface. Weed problems were also a greater problem on the minimum tillage treatment.

In 1980 the Melroe 701 Drill and conventional seeding was compared once again. Because of severe drought, production was zero for both treatments.

In 1981 the John Deere Hoe Drill was used for seeding the minimum tillage treatment. A good stand of wheat resulted from both the minimum tillage seeding and the conventional seeding, with the minimum tillage treatment producing slightly higher yields for the first time since the trial was begun.

In 1982 the John Deere Hoe Drill was once again used for seeding the minimum tillage treatment, with the conventional treatment consisting of double disking and seeding with the double disk press drill. Excellent growing conditions produced the highest yields recorded in this trial over the past seven year period.

In 1983 the Lilliston No-till Drill was used for seeding the minimum tillage treatment. The conventional treatment once again consisted of double disking the land in preparation for seeding, then seeding with the double disk press drill. Ample stored soil water from heavy fall precipitation, and otherwise excellent growing conditions produced the highest yields recorded in the trial over the past 8-year period, with no advantage shown for either cropping methods this year. Over the 8-year period, no-till cropping has produced 79 percent of the yield produced on conventional seeding.

**Table 35. Minimum Tillage and Double Disking and Seeding for
Wheat Production on Recrop**

Year	Yield in bushels per acre on:	
	Minimum Tillage and Seeding	Double Disking and Conventional Seeding
1976	28.0	27.0
1977	12.6	15.0
1978	10.3	28.5
1979	9.6	15.9
1980	0.0	0.0
1981	15.3	14.3
1982	20.9	31.8
1983	39.0	38.5
8-yr. average	17.0	21.4

Barley was seeded in a comparison of the no-till, the double disk and drill and the moldboard plow-packer-press drill on recrop. Yields were 49.6 bushels per acre for the plow-packer-press drill treatment, 28.1 for the no-till treatment and 27.9 for conventional disking and seeding.

Wheat seeded in a similar comparison trial produced 22.3 bushels per acre on plowing, 19.2 bushels per acre on conventional disking and 17.7 bushels per acre on the no-till treatment.