TALK FOR MINIMUM TILLAGE PANEL

by

Dick Ballard
Agronomist

Farm Management Services has been working with Dr. Kunkel on the mini-till concept for two years. In the fall of 1975, we decided to try half a circle, 63 acres, using his planters and ideas.

The 125 acres came out of alfalfa. This was rotavated between September 5th and September 10th. On September 10th and 11th, the preplant fertilizer was applied using dry fertilizer and the woverine barbar spreader. The rates were: 75 pounds of nitrogen; 300 pounds of phosphate; 380 pounds of potash; 10 pounds of zinc; and 1 pound of boron. Then the field was plowed applying 18 gallons of Telone per acre finishing September 14th. The field was then watered once and left until October 1st, when it was disked and planted to cover crop wheat.

The winter and spring winds blew out the greater part of the wheat leaving a fair stand on 1/3 of the west side and 1/4 of the east side.

The rows run north and south on this field. The west side was planted with the conventional style Lockwood planter on April 7th and 8th. The east side was planted using the Kunkel planter with the deep duck foot and a press wheel on April 8, 9, 10, and 12. 2,100 sacks of seed per acre were used on the west side and 2,300 sacks per acre were used on the east side.

The west side was disked once with the rows, just ahead of the planters, killing the wheat. No disc was used on the East side. The wheat survived, and no chemical was used, and there was a very big problem in killing it. Leo Martinez, Farm Manager, and his men finally worried the wheat to death with four cultivations, and darn near killed Chuck Yarbro, the General Manager, and myself to relieve his frustrations. I cannot say I would have blamed him had he succeeded. The wheat competed for sun, water, and food. Remember, it was a problem on all but one quarter of the field. The rest had blown out before planting. This is a big lesson. If you are going this route, kill the wheat with IPC, Paraquat, Roundup, or something.

During the summer we applied 430 pounds nitrogen per acre through the sprinkler. The initial application was early and heavy, as planned, to supply the bulk of the 200 pounds we would normally apply in the spring.

Both sides were treated the same as far as pesticides were concerned. The field was harvested between September 25th and October 4th. Here are the results:

Total field run tons, less dirt = 3008.78 tons = 24.5 tons/acre

West side conventional planters, field run tons = 23.32 tons/acre

East side Kunkel planter, field run tons = 25.78 tons/acre

	Field Run T.	Grade Ton %	Undersize %	Culls %	T/Acre	$/Acre
Kunkel	1611.26	86.7	5.79	7.27	25.78	$1614.60
West	1457.5	79.83	9.3	10.87	23.32	1359.42
Difference	+153.76	+6.87	-3.51	-3.6	2.55	255.18

The $255.18/acre gross gain is substantial. The fight to kill the wheat was very tough; chemicals can be used effectively to kill it.

The best part of the Kunkel planter is the press wheel. It packs moist soil around the seed, which is placed 3 to 3-1/2" deep in a depression 2" lower than the soil between the rows. Thus, there is wind and sand protection at emergence.

Lloyd Peterson tells us his test spuds had no green end; we did not pay strict attention to this, but it stands to reason that it would be so.

We will work to develop some combination of stubble mulch, chiseling, disking, and the press wheel, finish to planting, for we know we must eliminate wind erosion.