

Deep Ripping for Corn Production

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Objective

To evaluate the effects of deep ripping on corn yields.

Background

Cooperator:	Jim Kuhlman	Fertilizer:	Broadcast and
County:	Hancock		incorporated May 12
Nearest Town:	Findlay		300 lb/A 46-0-0
Drainage:	Naturally poorly-drained		300 lb/A 9-23-30
Soil type:	Millgrove/Colwood silt loam	Planting Date:	May 14, 2002
Tillage:	Conventional till	Planting Rate:	29,000 seeds/A
Previous Crop:	Soybeans	Row Width:	30-inch
Hybrid:	NK 45A6	Herbicides:	24 oz/A Liberty
Soil test:	None	Harvest Date:	October 31, 2002

Methods

Experimental design was a randomized complete block with three treatments replicated four times. Treatments were fall deep ripping at 8 and 14 inches by an Unverferth Inline Ripper and a zero check followed by conventional practices in the spring. Plots were 40 feet wide and 1,530 feet long. Plot yields were measured with a weigh wagon. Yield was adjusted to 15% moisture. Harvest population was estimated by counting plants from 17.4-foot sections of two center rows per plot.

Results

Table 1. Treatment Means for Yield, Moisture, and Population.^a

Deep Ripping Depth (inches)	Yield (bu/A)	Harvest Moisture (%)	Harvest Population (plants/A)
14	63.1 a	17.3 a	18,750 a
8	61.9 ab	17.4 a	19,750 a
0	55.9 b	17.6 a	21,125 a
LSD (0.05)	6.7	NS	NS
F-test	18.8	<1	<1

^aMeans followed by the same letter within a column are not significantly different.

Discussion and Summary

Deep ripping had larger yields than the zero check at the 14-inch depth. The 8-inch depth was similar to the zero check. However, yields overall were greatly reduced by abnormally hot and dry conditions during the growing season. Normally yields would be between 175 and 200 bu/ A. No differences were detected for harvest moisture and population. Populations were lower than most years, which also may have contributed to lower yields. Conditions were cold and wet during planting which may have caused the stand reduction.

Deep ripping at 14 inches in the fall may be a benefit in stress years. This benefit may have been the result of improved soil conditions for root development. However, yields were so low that conclusive statements should not be made until further research has been completed from a more normal growing season.

For more information, contact:

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