

Effect of Planter Unit Repair and Calibration on Yields on Corn

Steve D. Ruhl, Agriculture and Natural Resources Extension Agent

Objective

To evaluate the effect of calibration and repair of planter units on yields of corn.

Background

Cooperator:	Tom Weiler	Cooperator:	Steve Ruhl
County:	Morrow	County:	Morrow
Nearest town:	Chesterville	Nearest town:	Williamsport
Soil Type:	Sloan silty clay loam	Soil Type:	Sleeth silty clay loam
Drainage:	Systematic tile	Drainage:	Systematic tile
Tillage:	Conventional	Tillage:	Conventional
Previous crop:	Soybeans	Previous crop:	Soybeans
Soil test:	pH 7.0, P 23 ppm, K 154 ppm	Soil test:	pH 6.5, P 56 ppm, K 162 ppm
Fertilizer:	206-70-99 lb/A actual N-P-K	Fertilizer:	167-69-30 lb/A actual N-P-K
Herbicides:	PRE: Dual II Magnum (1 qt/A) Atrazine (1.5 lb/A) Balance (1.0 oz/A) POST: Clarity (1 pt/A)	Herbicides:	PRE: Bicep II Magnum (1 qt/A) Balance (1.5 oz/A) POST: Clarity (0.5 pt/A)
Variety:	Golden Harvest 2495	Variety:	Golden Harvest 2515
Planting date:	May 1, 2000	Planting date:	April 29, 2000
Planting rate:	30,100 seeds/A	Planting rate:	30,100 seeds/A
Row width:	30 inch	Row width:	30 inch
Harvest date:	October 23, 2000	Harvest date:	October 31, 2000

Methods

Three seeding units were removed from a John Deere 7000 six-row planter. These units were calibrated and any needed repairs and adjustments were made. The calibrated units were compared to the non-calibrated units in a split-planter study. The study was replicated at two sites. The treatments were replicated four times at each site, and the entire six rows were harvested and measured using a weigh wagon. The lengths of the plots ranged from 715 to 766 feet. The speed of planting was 5 mph. The harvest population was not counted at the Chesterville site.

Results

Table 1. Calibration of Planter Units.

Treatments	Site I	Site II	Site II
	Corn Yield (bu/A)	CornYield (bu/A)	Population (plants/A)
Calibrated, repaired adjusted units	158.1 a	181.8 a	28,000
Other units	146.0 b	174.8 b	26,250
LSD (0.05)	5.2	6	NS
F	54.8	13.9	4.2
CV (%)	1.5	1.5	4.5

Summary and Notes

The results of this study did show that the calibration and repair and adjustment of the planting units of the J.D. 7000 planter did affect yields. The calibrated, repaired units out yielded the other units by 12 and 7 bushels per acre at the two sites. Population counts at the Williamsport site were not statistically different. There were probably not enough replicates to differentiate a 5 to 6 percent difference in the stand counts.

It appears that calibration and repair of planter units can make a significant difference in corn yields. Producers should periodically calibrate, repair, and adjust seed-planting units.

Acknowledgment

The author and collaborating farmer would like to thank Pioneer Hybrids for calibrating and repairing the three units so the study could be completed. Also, thanks are extended to Royster Clark for weighing the plot at the Williamsport location.

For additional information, contact:

Steve Ruhl
The Ohio State University Extension
ruhl.1@osu.edu