

On-farm Corn Tillage Trials

RFR-A1304

Methods

Four trials examining tillage practices in corn were conducted in three Iowa counties in 2013 (Table 1). One trial in Story County (Trial 1) compared no-till with strip-till to a disk/chisel system. Trials 2, 3, and 4 compared corn planted with and without the use of TrackTill at the time of planting with corn planted in a tilled system. All trials were conducted on fields planted to corn in 2012.

Results

There were no differences in corn grain yield between the TrackTill and no TrackTill systems in Trials 2, 3, and 4 (Table 2). However, the no-till corn yielded less than the corn planted with the disk/chisel system in Trial 1. Height measurements taken at V6 showed the corn in the no-till system was significantly shorter than the corn in the strip-till system, and the corn height in the strip-till system was less than in the disk/chisel system. The extended leaf height was 24 in. with no-till, 26 in. with strip-till, and 29 in. with the disk/chisel system. It is possible the corn residue present in the no-till system impeded the early growth of the corn and may have been partially responsible for the lower grain yield. The drought conditions in central Iowa in summer 2013 also likely contributed to the low corn yields seen with all tillage systems in this trial. These trials represent only one year of data, and long-term tillage practices may show different results.

Table 1. Hybrid, row spacing, planting date, planting population, and previous crop tillage trials in corn.

Exp. No.	Trial	County	Hybrid	Row spacing (in.)	Planting date	Planting population (seeds/A)	Previous crop
130511	1	Story	6408 VT3 RIB	30	5/1/13	35,000	Corn
130512	2	Boone	Wyffels 6878	30	5/15/13	32-36,000 VR	Corn
130513	3	Dallas	Dekalb 61-88	30	6/20/13	36,000	Corn
130514	4	Dallas	Channel 213-59 SmartStax	30	4/20/13	34,000	Corn

Table 2. Spring stand and yield from corn tillage trials.

Exp. No.	Trial	Treatment	Spring stand (plants/A)*	Yield (bu/A)*	P-value
130511	1	No-till	30,500 a	76.8 b	0.01
		Disk/chisel	25,750 a	104.4 a	
		Strip-till	26,750 a	92.3 ab	
130512	2	TrackTill	32,375 a	145.6 a	0.65
		No TrackTill	32,125 a	141.9 a	
130513	3	TrackTill	34,225 a	175.3 a	0.90
		No TrackTill	34,050 a	177.8 a	
130514	4	TrackTill	30,000 a	194.5 a	0.43
		No TrackTill	30,250 a	184.9 a	

*Values denoted with the same letter within a trial are not statistically different at the significance level 0.05.