

Corn response to tillage systems, Carrington, 2007.

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A field study was conducted at the NDSU Carrington Research Extension Center to examine the performance of corn under several tillage systems. Experimental design was a randomized complete block with four replications. The previous crop was wheat. The dryland trial was established on a Heimdal loam soil with 3.2% organic matter and 6.9 pH. Conventional-till plots were tilled on October 16, 2006 using a roto-tiller at a 2-inch tillage depth. The fall strip-till treatment was applied on October 16 using a Yetter strip-till opener with 30-inch row spacing using a 4- to 5-inch tillage depth that established a berm about 10-inches wide. The spring strip-till treatment was applied on April 23, 2007 at a 5-inch tillage depth that established a berm about 12-inches wide. Conventional-till plots were tilled twice at a 3-inch depth using a field cultivator plus spring harrow on May 8. 'DKC35-51' was planted with a John Deere Max-Emerge II row crop planter in 30-inch rows on May 10. Conventional-till plots were cultivated between crop rows on June 22. The seed was harvested with a plot combine on November 2.

Plant emergence from planting was delayed 1 to 3 days and days to silk were delayed 2 to 3 days with no-till compared to other tillage systems (Table). Plant stand was similar among treatments. Seed yield was similar among tillage systems, but tended to be lower with no-till and higher with strip till. Test weight and seed moisture were similar among treatments, but moisture tended to be highest with no-till.

Table. Corn response to tillage system, Carrington.

Tillage treatment	Plant Emergence Jday	Plant Stand plt/A	Days to Silk Jday	Corn Seed Yield bu/A	Test Weight lb/bu	Seed Moisture %
conventional	143	35857	207	155.8	58.0	18.2
no-till	144	32537	210	140.1	58.3	19.7
strip till - fall	141	33644	208	160.8	58.3	18.0
strip till - spring	143	33201	207	166.9	58.9	18.5
mean	143	33810	208	156	58.4	19
CV (%)	0.3	4.4	0.3	10.3	2.9	5.5
LSD (0.05)	1	NS	1	NS	NS	NS