Sunflower 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 sunflower 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. Mycogen '8N386CL' oil sunflower was planted with a John Deere Max-Emerge II row crop planter in 30-inch rows on May 21. Conventional-till plots were cultivated between crop rows on June 22. The seed was harvested with a plot combine on November 19.

Plant development was similar among tillage systems (Table). Plant stand was similar among treatments. Seed yield and quality were similar among tillage systems.

Table. Sunflower response to tillage systems, Carrington, 2007.

	Sunflower							
Tillage treatment	Plant Emergence	Plant Stand	Days to Bloom	Days to PM	Seed Yield	Test Weight	Seed Moisture	Seed Oil
	Jday	plt/A	Jday	Jday	bu/A	lb/bu	%	%
conventional	156	16601	215	267	1040	30.3	8.9	39.8
no-till	155	20747	214	267	956	30.4	8.8	40.8
strip till - fall	156	17651	214	267	1086	30.0	8.7	40.0
strip till - spring	156	18261	214	267	942	29.9	8.9	39.8
mean	156	18315	214	267	1006	30.2	8.8	40.1
CV (%)	0.3	22.8	0.3	0.0	12.1	1.2	1.1	2.4
LSD (0.05)	NS	NS	NS	NS	NS	NS	0.2	NS