

**Pinto bean response to tillage systems, Carrington, 2007.**

(Greg Endres and Paul Hendrickson)

A field study was conducted at the NDSU Carrington Research Extension Center to examine the performance of dry bean 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. ‘Maverick’ pinto bean was planted with a John Deere Max-Emerge II row crop planter in 30-inch rows on June 18. Conventional-till plots were cultivated between crop rows on July 6. Plots were prepared for harvest by hand pulling plants on October 3 to allow dry down. The seed was harvested with a plot combine on October 23.

Crop stand was low throughout trial when measured on June 27, but fall strip till tended to have a greater stand compared to other tillage systems (Table). Plant emergence (data not shown) and days to flower from planting were similar among tillage systems. However, conventional till reached physiological maturity two to three days earlier compared to other tillage. Seed yield was greater with fall strip till compared to other tillage. Test weight and seed size was similar among treatments.

Table.						
Pinto bean						
Tillage system	Plant stand	Days to flower	PM	Seed yield	Test weight	Seeds/lb
	plt/A	Jday	Jday	bu/A	lb/bu	
conventional	28000	210	271	1820	60.2	1416
no-till	30545	211	273	1886	60.2	1373
strip till - fall	37850	211	274	2129	60.6	1438
strip till - spring	32870	211	274	1745	60.3	1428
mean	32315	211	273	1895	60.3	1414
CV (%)	14.2	0.5	0.3	6.6	0.6	4.1
LSD (0.05)	NS	NS	1	209	NS	NS