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Seedbed Tillage and Planter Effects on Sugarbeet Emergence and Yield—Huron Co. 1999

Mid-Season Observations

Sugar beet plots were established using three seedbed tillage methods and two planters with pelleted seed. There were no practical differences in emergence or plant population due to tillage or planter used.

Sugar beet plots were established at the Shaw site in Huron County to evaluate the effect of seedbed tillage and planter selection on plant emergence and stand, uniformity of size, sugar content and yield. **All plots were fall moldboard plowed.** Three seedbed tillage treatments were used: 1) **fall Mulch-Master, stale seedbed**, 2) **fall Mulch-Master, shallow spring Mulch-Master**, and 3) **shallow spring Mulch-Master**. Beets were planted with a John Deere **7300 general purpose vacuum planter** and an Accord **plate-type beet planter**. Stand establishment goals included early season emergence and growth, a high plant population and an even spacing between plants in the row. Seedbed tillage was within a few hours of planting. Shallow tillage with the Mulch-Master was at a depth of 1-2 inches to break the surface crust and level the surface yet avoid excessive drying of the seedbed. Seedbed tillage of the land that was fall plowed but not leveled with Mulch-Master was at a depth of 3-4 inches to level the seedbed.

Soil Moisture

Increasing tillage intensity tends to create a drier seed zone throughout the early growing season. This lack of soil moisture can contribute to delayed emergence in spring tilled plots when soil moisture is short. Under this years soil moisture conditions, there was no practical difference in rate of emergence or stand due to tillage or planter used. With each tillage and planting system few additional beets emerged after the 20-day stand count.

Planting date:	4/29/99	Row cultivate:	June 1, June 21,
Target spacing:	5 inches		July 7
Planting depth:	1 inch	Spray schedule:	Betamix, Upbeet
Planting speed:	4 mph	Row spacing	22 inches
Previous crop:	Soybean	Fertilizer:	100 #/acre 0-0-60
Variety: E-17	E-17 pellets		109#/acre anhydr

Table 1. Planting and crop care information.

Table 2. Sugarbeet plants per 100 ft of row for three tillage systems with two planters. All plots were fall moldboard plowed.

	20 day, May 18		30 day, May 28	
Stale Seedbed	Plants/100 ft	% Stand	Plants/100 ft	% Stand
Accord	122	51	140	58

	John Deere		148		62		142		59	
	Spring Mulch-Master									
	Accord		141		58		145		60	
	John Deere		137		57		138		58	
	Fall Mulch-Master, Shallow Spring Mulch-Master									
	Accord		122		51		119		50	
	John Deere		156		65		150		63	
