

Dry Bean Tillage Trial

Trial ID: 2021-DBT02 – R.M. of Dufferin

Objective: Quantify the agronomic and economic impacts of strip-till vs. conventional till systems for dry bean production

Summary: There was a significant yield difference between tillage systems, with strip-till yielding 289 lbs/ac more than conventional till. Strip-till was an economically favourable decision at this field, this season.

Trial Information †

Treatment	Conventional vs. Strip Tillage
Rural Municipality	Dufferin
Soil Texture	Clay
Previous Crop	Wheat
Seeding Date	May 28
Variety	Eclipse
Seeding Rate	108 000 seeds/ac
Row Spacing	30"
Plant Stand @ V2	100 000 plants/ac
Harvest Date	September 24

† A 15% reduction in fertilizer rate was applied in strip-till strips, to account for increased efficiency of band vs. broadcast and incorporated placement.

Precipitation (mm)

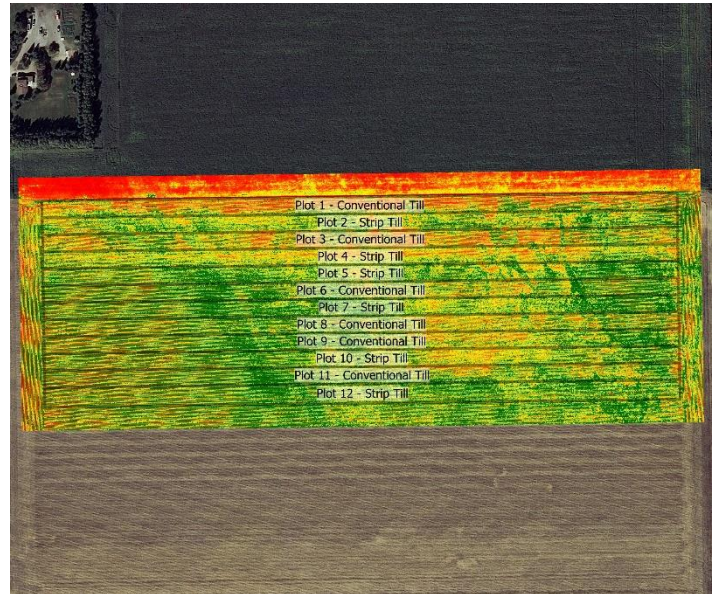
	May	Jun	Jul	Aug	Total
Rainfall	29	104	17.9	77.7	228.8
Normal	53.8	80.6	65.7	71	271.1
% Normal	54%	129%	27%	109%	84%

In-Season Observations

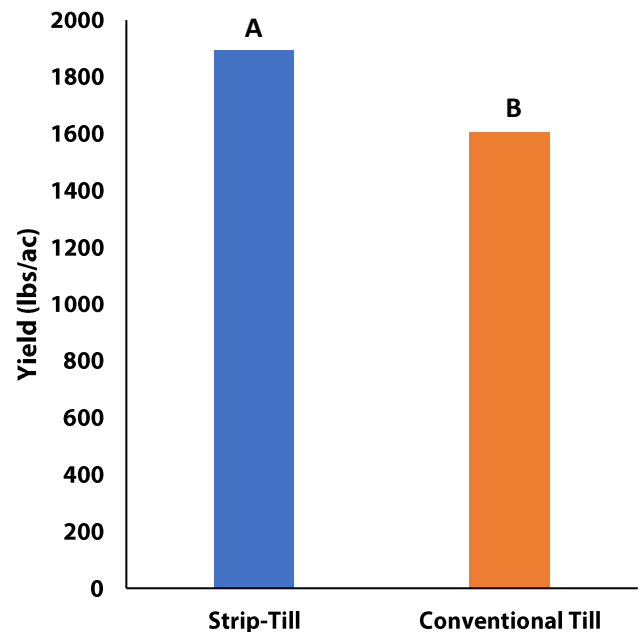


Beginning at the transition between vegetative and reproductive growth stages, strip-till beans (bottom image) looked more vigorous compared to conventional till beans (top image). Differences were subtle, but evident until maturity.

NDVI Field Image August 16



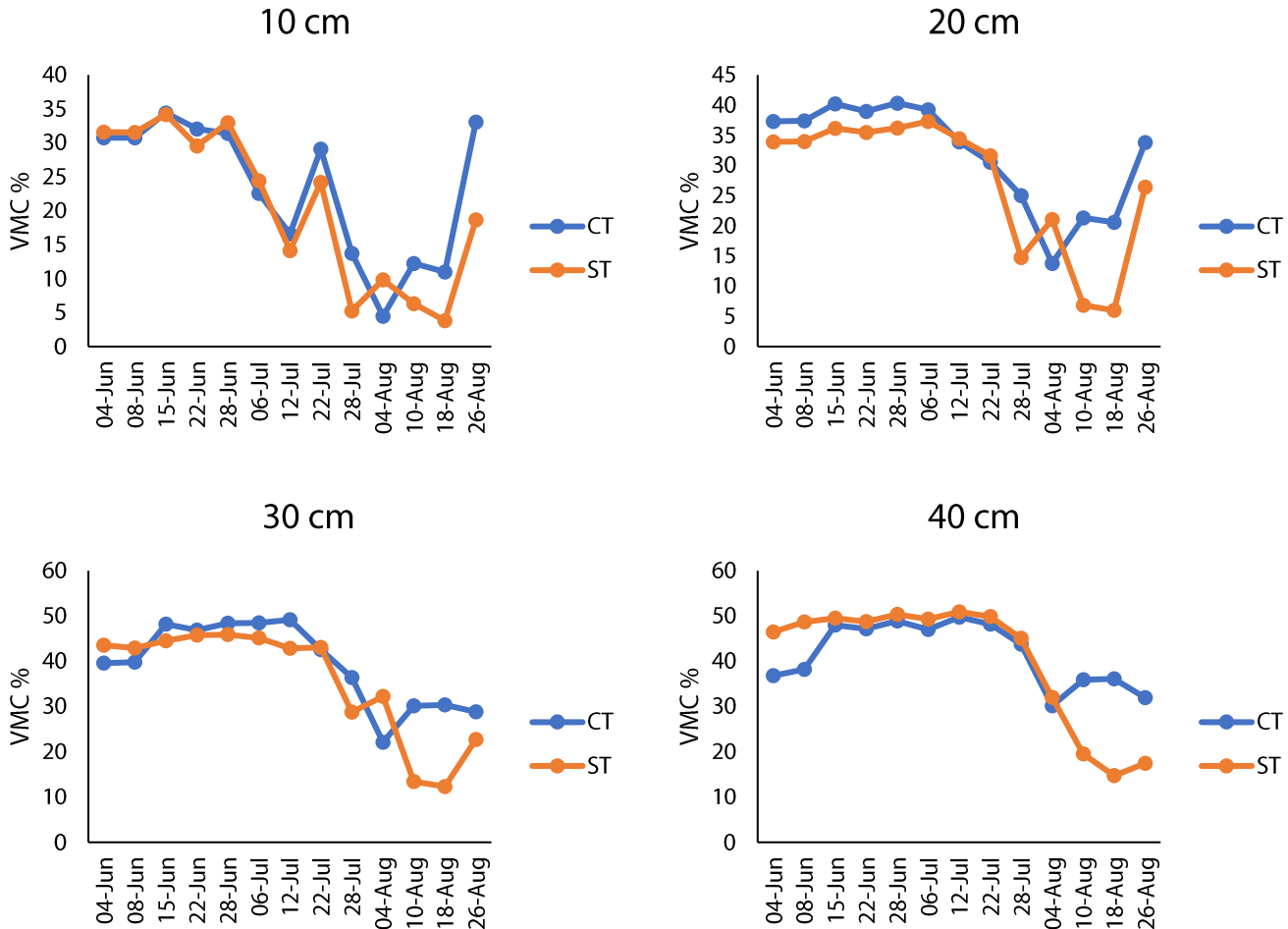
Yield by Treatment





Dry Bean Tillage Trial

Volumetric Soil Moisture Content (%) by Soil Depth



Overall Yield & Economics

	Mean (lbs/ac)	Total Cost [†]	Change in Profit/ac ^{††}	
			Long-Term Average (\$0.30-0.40/lb)	Current Conditions (\$0.40-0.60/lb)
Strip-Till	1894	\$88/ac	\$66 to \$95/ac	\$116 to \$173/ac
Conventional Till	1605	\$109/ac		
Yield Difference	289			
P-Value	0.0048			
CV	11%			
Significance	Yes	Economic	Yes	Yes

[†] Based on fertilizer, application, fuel and operating costs for the two tillage systems

^{††} Profit is the difference between the change in income/ac, from a significant yield difference, and the change in cost/ac between the tillage systems. Profit is presented as a range across long-term average dry bean prices, and those more similar to current market conditions.