

# Dry Bean Tillage Trial

**Trial ID: 2021-DBT01 – R.M. of Roland**

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

**Summary:** The conventional tilled strips could not be harvested as they did not mature or dry down. As a result, yield for the conventional tilled strips is effectively zero, and strip till was an economically beneficial production decision.

## Trial Information †

<b>Treatment</b>	Conventional vs. Strip Tillage
<b>Rural Municipality</b>	Roland
<b>Soil Texture</b>	Clay
<b>Previous Crop</b>	Wheat
<b>Seeding Date</b>	May 18
<b>Variety</b>	SV6139R
<b>Seeding Rate</b>	71 000 seeds/ac
<b>Row Spacing</b>	30"
<b>Plant Stand @ V2</b>	69 000 plants/ac
<b>Harvest Date</b>	September 22

† A 80-50-0-10 fertilizer blend was banded 6" below the seed in the strip-till treatment and broadcast/incorporated in the conventional till treatment

## Precipitation (mm)

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

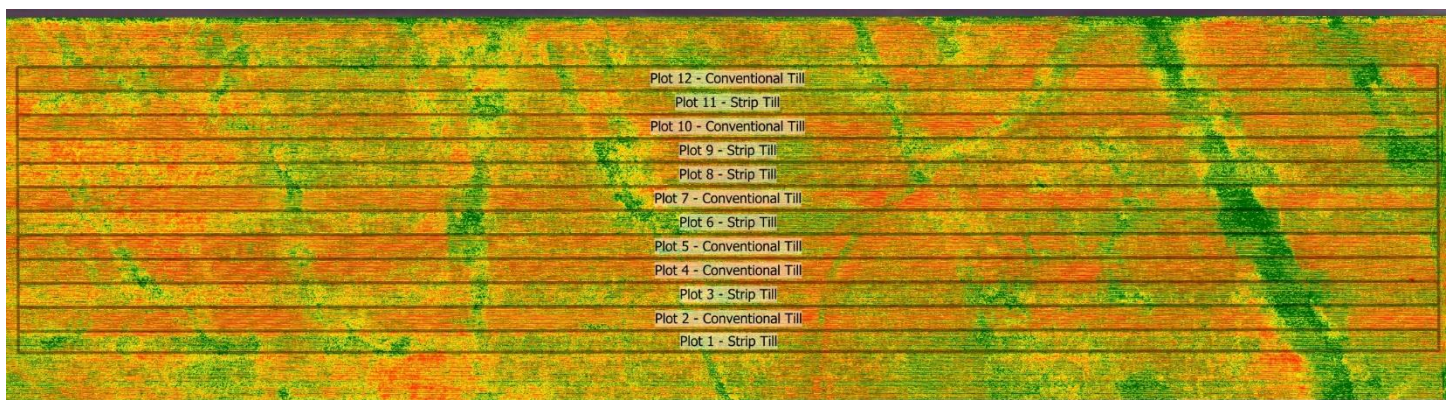
## Visual Observations



Beginning at the transition between vegetative and reproductive growth stages, and persisting until harvest, the strip-till beans were much more vigorous.

At maturity, the conventional till beans had not dried down and could not be harvested (pictured left).

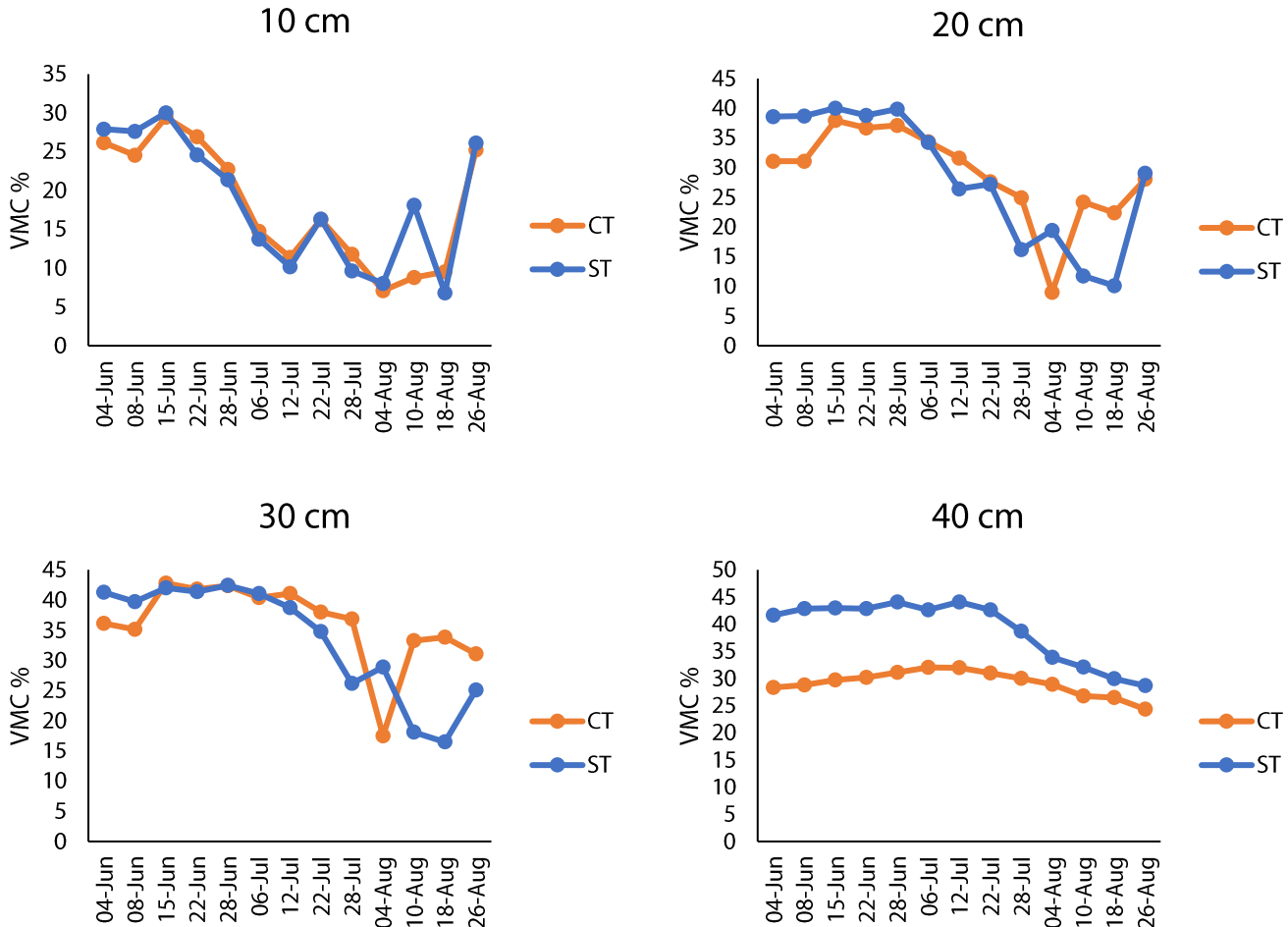
## NDVI Field Image Aug 13





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## Volumetric Soil Moisture Content (%) by Soil Depth



## Overall Yield & Economics

	Mean (lbs/ac)	Total Costs †	Change in Profit/ac <sup>††</sup>	
			Long-Term Average (\$0.30-0.40/lb)	Current Conditions (\$0.40-0.60/lb)
<b>Strip-Till</b>	1376	\$13/ac	\$393 to \$530/ac	\$550 to \$826/ac
<b>Conventional Till</b>	<i>Not harvestable</i>	\$33/ac		
<b>Yield Difference</b>	1376			
<b>P-Value</b>	n/a			
<b>CV</b>	n/a			
<b>Significance</b>	n/a	<b>Economic</b>	<b>Yes</b>	<b>Yes</b>

† Based on fuel, labour and operating cost totals for each tillage system

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