

Canola is one of the primary crops grown in Saskatchewan but has one of the highest input costs associated with production (Ministry of Agriculture, Food and Rural Affairs, 2015). Canola production costs can exceed \$185 ac⁻¹ depending on input selection. These costs are approximately 13 %, 17 %, 23 % and 26 % higher than spring wheat, barley, flax, and lentils, respectively (Government of Manitoba, 2016). Canola production costs can be further increased through the addition of multiple inputs.

This trial was designed to demonstrate to producers the economic value of canola inputs that are readily available to aid in decision making. The demonstration was set up at the Scott Research Farm as a randomized complete block design with four replicates and seven treatments (Table 1).

Table 1: Treatment list including description of each treatment for canola production

Treatments	Description
Control "Basic"	"Basic": seeding rate (100 seeds/ m ²); fertilizer based on soil test recommendations; one in-crop herbicide
Foliar Fertilizer	Basic + additional foliar fertilizer application
Boron	Basic + boron application
Seed Treatment	Basic + Lumiderm
Seeding Rate	Basic (seeding rate of 150 s/m ² vs. 100 s/m ²)
Fungicide	Basic + fungicide application @ 2-4 leaf + 20% + 50% flower
Stacked	Seeding rate (150 seeds/ m ²) + basic fertilizer soil test recommendations + additional foliar fertilizer + boron + additional seed treatment + fungicide applications + one in-crop herbicide application

The results indicated that the application of both foliar fertilizers and fungicides, while not statistically significant, provided slightly greater yields compared to treatments with boron, seed treatment and higher seeding rates (Figure 1). However, compared to the untreated "basic" check, neither of these options resulted in an economic benefit.

The "stacked" treatment resulted in a 10 % yield boost compared to treatments that received a boron application, additional seed treatment, and a higher seeding rate (Figure 1). Furthermore, when comparing the "stacked" to "basic" treatments, the stacked treatment resulted in a non-significant, yet higher yield of 63 bu/ ac compared to 59 bu/ac, respectively (Figure 1). Although the stacked treatment resulted in an overall greater yield, when determining the overall net return, the "basic" treatment was more cost effective. The "stacked" treatment compared to the "basic" resulted in a net loss of \$ 38.25 per acre.

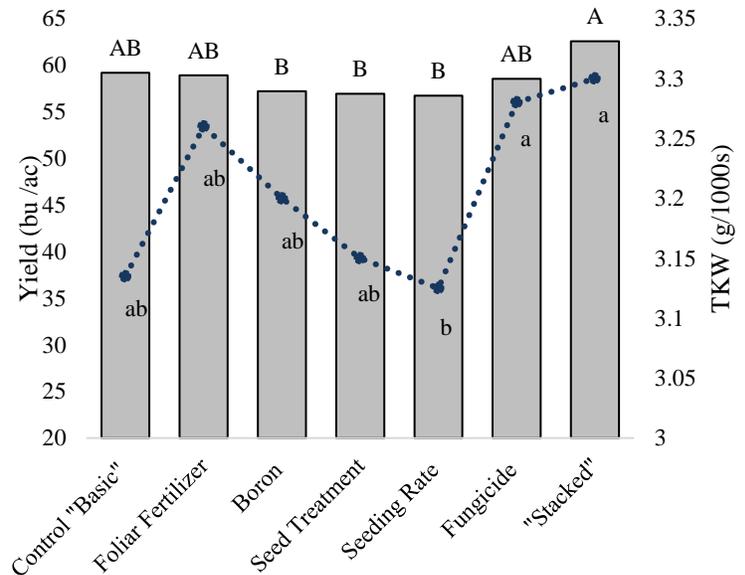


Figure 1. The effect of treatments on canola yield (bu/ac) and thousand kernel weight (TKW) (g/1000seeds) at Scott, SK 2016. Different lettering indicates significant difference between treatments, respectively).

Overall, it appears that the traditional management practice that most producers follow provided the best net economic return.

For the full report, see <https://www.westernappliedresearch.com/research/factsheets/>. Project was supported by the Agricultural Demonstration of Practices and Technologies (ADOPT) initiative under the Canada-Saskatchewan Growing Forward 2 bi-lateral agreement.