

varieties is underway and they need to be tested under Prairie conditions to enable farmers to select the ones that are appropriate for their needs.

### **Materials and Methods**

The trial at Melita was arranged as randomized complete block design with 12 treatments (varieties) replicated 4 times. Among the treatments were Liberty Link and Roundup Ready canola varieties. Land preparation only involved harrowing and no tillage practices were done. Seeding was done onto oat stubble at 0.5” on the 8<sup>th</sup> of May. Chemical control for weeds and insecticides was similar to the Swath Canola Variety trial.

### **Results and Discussion**

2019 results available at [www.canolaperformancetrials.ca](http://www.canolaperformancetrials.ca) or Seed Manitoba 2020 Variety Selection and Growers Source Guide pp 47-48.

### **References**

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Irvine, B. and Lafond, G. P. 2010. Pushing canola instead of windrowing can be a viable alternative. *Canadian Journal of Plant Science* **90: 145-152**

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## **22.0 Yellow Mustard (*Sinapis alba*) Variety Trial**

**Project duration:** 2018-2023

**Collaborators:** Mustard21 Canada, Saskatchewan

### **Objectives**

- Evaluate agronomic performance and adaptation of yellow mustard (*Sinapis alba*) varieties on the Canadian Prairies

### **Background**

Yellow mustard (*Sinapis alba*), which originated in the Middle east and the Mediterranean regions, is an important export crop and used as a condiment, vegetable oil or high protein meal in Canada (Hanelt, 2001). The crop is usually grown in the Brown and Dark Brown soil zones of the Canadian Prairies. More breeding work has been done to ensure that yellow mustard has good adaptation to heat and drought,

and resistance or tolerance to a significant number of important diseases and insect pests (Brown et al., 1997; Katepa-Mupondwa et al., 2006). Compared to rapeseed or canola (*Brassica napus* or *B. rapa*), yellow mustard has superior heat and drought tolerance and can be grown in drier regions. Research has shown that yellow mustard has potential as an alternative crop in rotations with small grain cereals and has fewer limitations compared to other traditional alternative crops (Brown et al., 2005). On the Canadian Prairies, seed yield of yellow mustard is highly variable and impacted by the prevailing weather conditions in addition to seeding date, rate and depth. When selecting yellow mustard varieties, most farmers are interested in yield potential and other parameters such as resistance to pod shattering in order to maximize profitability. As more new varieties of yellow mustard are being made available for the short growing season areas such as the Prairies, there is need for evaluating their performance and help producers select varieties that prevail in their areas of production.

### **Materials and Methods**

In 2019, the trials were conducted at Melita and Reston locations in Southwestern Canada. The experimental design was randomized complete block design with 11 treatments replicated 4 times. These locations differed in soil type, with the former characterized by Waskada loam while the later was characterized by Ryerson5loam-Coatstoneloam2-Tilstoneloam1 soils. Melita site was established on oat stubble while Reston plots were on flax stubble. Land preparation involved harrowing to evenly spread plant residues at both sites. Due to high weed density at Reston, application of 1.5 l ac<sup>-1</sup> Roundup and 0.65 L ac<sup>-1</sup> Rival was done before seeding while the Melita site did not require a burnoff. Seeding was done on the 8<sup>th</sup> of May at Melita at 0.5" while Reston was seeded on the 17<sup>th</sup> of May at 0.75". Soil moisture content was lower at Reston hence the difference in seeding depth with Melita. Fertilizer was side banded during seeding at a rate of 108-35-20-7-2Zn (N-P-K-S) lb ac<sup>-1</sup> in Melita while 7-35-20-7-2Zn lb ac<sup>-1</sup> was applied at seeding in Reston followed by top dressing with 120 lb ac<sup>-1</sup> N in the form of Urea. Post emergence chemical weed control involved the use of 0.12 L ac<sup>-1</sup> Select mixed with 0.5% v/v Amigo surfactant. In addition to this tank solution, 0.5 L ac<sup>-1</sup> 28-0-0 (Urea) was applied at Reston to improve efficacy on weeds. Flea beetles were sprayed twice with 0.074 L ac<sup>-1</sup> Pounce at both. Before harvesting Reston site, an application of 0.65 L ac<sup>-1</sup> Reglone, 0.5 L ac<sup>-1</sup> Roundup and 0.5% v/v LI700 was done as a desiccant to dry mustard stems and kill late weeds. Melita site was swathed and left to dry before harvesting. Data collected included maturity date, plant height at maturity, days to flowers and grain yield.