Canadian Agri-Science Cluster for Horticulture 3

Update to Industry

Semi-Annual – Fall 2021

Activity title:
Canadian Potato Variety Evaluation **16B** (Manitoba Fresh Market)

Name of Lead Researcher:
Dr. Tracy Shinners-Carnelley, Peak of the Market

Names of Collaborators and Institutions:

Activity Objectives (as per approved workplan):
The objective of this research was to evaluate the yield and quality parameters of red-skinned/white flesh, yellow, white, russet, and creamer potato varieties and assess their potential as fresh market varieties for Manitoba.

Research Progress to Date (use plain language, not to exceed 500 words):
In 2021, 45 potato varieties were evaluated at the Peak of the Market Research Site located in Winker Manitoba. The trial included red-skinned/ white flesh (21), yellow (10), white (8), russet (5), and creamer (1) types, including the industry standards. The varieties evaluated in this trial were provided by Agriculture and Agri-Food Canada's potato breeding program, private breeders, breeder's Canadian agents, and variety developers. The trial was established and managed by type i.e. reds, yellows, creamers, and where possible agronomic practices were suited to the type of variety. Specifically, the in-row plant spacing, fertility, top-killing, and harvest dates were managed for each type.

The field season is Manitoba was hot and dry, and due to limitations on available water, irrigation was limited to a few applications applied during the period of June 24 to July 9. This timing likely coincided with the critical stage of tuber initiation for many of the varieties.

During the growing season data was collected on stand count and stem number per plant. Observations and field notes were made on metribuzin sensitivity, foliar disease presence, and maturity. Anecdotally, black dot stem infections caused by the fungal pathogen *Colletotrichum coccodes*, were noted in some varieties in the weeks leading up to top kill. This was the first season that black dot was observed on green stems prior to vine senescence. At harvest, data was collected on total yield and size profile, and sub- samples of tubers were retained for visual assessments of internal and external defects. This will be completed by the end of December.

Extension Activities (presentations to growers, articles, poster presentations, etc.):
Field days were held at the Peak of the Market Research Site on August 12 & 13, 2021. Freshly dug samples of each variety were on display. This trial was referenced in an article entitled "Testing Varieties for the Locals" that was published in the Fall 2021 edition of Spudsmart magazine.

COVID-19 Related Challenges:
Due to COVID-19 gathering restrictions, no indoor fall event was held to showcase washed and graded samples. Hopefully this activity will return for 2022.

Key Message(s):
Growers are very interested in evaluating and identifying new varieties that have improved yield, quality, or other agronomic or nutritional attributes compared to the current industry standard varieties. Trials like this allow for efficient evaluation and comparison of many varieties from different breeders or developers and help to increase the likelihood of identifying varieties with potential for production in Manitoba.

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