

4.0 Pepsico - Quaker oats variety evaluation

Project duration: 2018-2019

Collaborators: Pepsico/Quaker/Frito-Lay

Objectives

To evaluate yield of 19 oat varieties under different environments.

Background

Production of oats (*Avena sativa* L.) is influenced by several factors that include; rainfall or precipitation, temperature, solar irradiation and soil conditions in which the crop is being grown (Sorrells and Simmons, 1992). These factors appear to affect the crop at different phenology stages during the season. Therefore, timing of seeding is crucial in a given production area so as to synchronize it with occurrence of ideal weather conditions favourable for growth and development. Oats production has been on the rise in Canada with an expectation of +15 % to 4 million tonnes in 2019 (Statistics Canada, 2019). This has been attributed to a 15.2% increase in harvested area (to 2.9 million acres) coupled with new higher yielding varieties available for producers across Canada. New varieties still need to be tested across different environments so as to allow producers to have a wide selection of the ones suitable for their areas of production.

Materials and Methods

The trial was arranged as randomized complete block design with 19 varieties replicated 4 times on Waskada loam soils in Melita. Plots were established on oats stubble under no till system on the 1st May 2019. All fertilizer requirements were met by side banding during seeding and at a rate of 108-35-20-7-2Zn (N-P-K-S) actual lb ac⁻¹. Fertility application was done based on soil test results and also to meet requirements of the crop. Post emergence weed control was achieved by the application of 0.5 L ac⁻¹ Mextrol tank mixed by error with 0.15 L ac⁻¹ Puma at stage 15 on BBCH scale. The rate of Puma herbicide applied slightly reduced development of oats but full recovery from herbicide injury was observed within 2 weeks of exposure. Data collected included; days to heading, plant height at maturity, days to maturity, grain yield, lodging and incidence of diseases that included; crown rust, stem rust and smut.

Results

Major highlights of this trial were grain yield and disease incidence. Summaries will be available when the trial is finalized.