

Evaluating short season, cold and disease tolerant corn inbreds in Interlake region

Project duration: 2018-2022

Objectives: Development and release of early maturing cold tolerant corn inbreds with emphasis on the 1800-2000 CHU market.

Collaborators: Lana Reid, AAFC Ottawa
James Frey (PCDF), Craig Linde (CMCDC), Nirmal Hari (PESAI),
Scott Chalmers (WADO), Diversification Specialists, MB Ag

Project Findings

This was the first year of testing. More varietal evaluations are planned in 2019 and AAFC will share data once the project is completed.

Background / Additional resources

Canada annually produces more than 13 million metric tons of grain corn with a farm gate value greater than \$2 billion from 1.3 million ha. Historically, grain corn was concentrated in areas of the country with the highest available heat units and adequate moisture supply (i.e. southern Ontario); however many production areas in eastern and western Canada have less than 2800 CHU. Production in these heat-limited environments is expanding rapidly as demand for grain corn increases. There is a lack of suitable early hybrids with acceptable early season cold tolerance for these expanding regions of corn production. As well, climate change has resulted in a significant increase in common diseases and the arrival of new diseases to Canada. This is an evolving crisis that will affect trade and severely damage growers and their grain customers.

This project has aimed to develop and release of early maturing cold tolerant corn inbreds with emphasis on the 1800-2000 CHU market. This objective will be achieved using conventional corn breeding methodology enhanced by double haploid inbred production and specialized screening techniques for cold tolerance. Multiple yield trials in Alberta, Manitoba, Quebec, Ontario and PEI are planned.

Materials & Methods

Experimental Design – Randomised block design with three replications

Treatments – Thirty corn lines provided by AAFC Ottawa.

Plot size – 7.6 m²

Data collected – plant stand, disease incidence, grain yield, test weight

Agronomic info

Stubble, soil type – Fallow, heavy clay

Fertilizer applied – N – 80 lbs/acre and P – 30lbs/acre were applied at seeding.

Pesticides applied – Brotex @ 570 ml/acre on June 23

Seeding/harvesting date – May 28 / Nov 5