



Breeding new stress tolerant intermediate wheatgrass varieties.

Project Code: FRG.14.20
Completed: *In Progress. Results expected in March 2024.*

Project Title:

Identification of genetic factors contributing to abiotic stress tolerance in intermediate wheatgrass.

Researchers:

Dr. Sean R. Asselin - Agriculture and Agri-Food Canada Sean.Asselin@Canada.ca
Dr. Doug Cattani - University of Manitoba, Department of Plant Science Dr. Bill Biligetu - University of Saskatchewan, Department of Plant Sciences Dr. Steve Larson - USDA-ARS, Logan, Utah Dr. Ron Knox - AAFC, Swift Current Dr. Jillian Bainard - AAFC, Swift Current Shanna Quilichini, M.Sc. - AAFC, Swift Current

Background

Intermediate wheatgrass produces a palatable forage for all classes of livestock, and is well suited for pasture forage, hay and late season stockpile grazing. Intermediate wheatgrass is considered moderately saline tolerant forage, performs favorably under saline conditions and may be used to assist in the remediation of saline affected soils. It has been utilized as a high-yielding, high quality forage for decades in Western Canada but like many forage species in Canada the development of improved cultivars has been limited. There has not been a new variety of Intermediate whatgrass developed in Canada in 40 years and varieties developed in the 1960s-1970s continue to be used today.

Objectives

- Identify sources of stress tolerance in intermediate wheatgrass to serve as parents for new cultivars and identify underlying genetic loci influencing these traits.

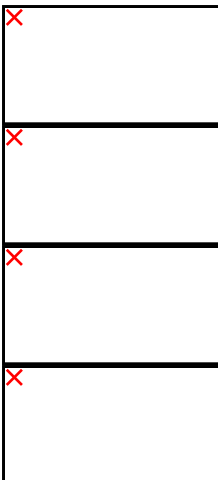
What they will do

This research team wants to breed new salt and drought stress tolerant intermediate wheatgrass varieties. 288 different genotypes from Canadian and international sources will be assessed under simulated drought and salinity scenarios in a greenhouse. Clones of these plants will be transplanted to a field and allowed to pollinate to generate seed for progeny evaluation. Ratings will be developed and published for salinity and drought tolerance of existing cultivars and germplasm under development within the USDA, UoS and UoM for the identification of sources of stress tolerance in intermediate wheatgrass. Data generated in this study will be collected for the identification of SNP markers associated with improved performance in downstream projects.

Implications

This project will get researchers closer to developing new, stress-tolerant intermediate wheatgrass varieties.

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