



## 2021-097: Genomic characterization of the Prairie forage crop hybrid wheatgrass (*Elymus hoffmanni*) and its parental ancestors

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As you drive through certain parts of the province, you might notice white soil on which few crops are able to grow. Salinity maps of Saskatchewan from the 1980's show that much of the province had a moderate level of salinity. In order to retain value on these soils, hybrid wheatgrasses have been developed to grow on these areas. They have played a key role in the reclamation of salinized soils. However, there is still a great deal of variation in salinity and drought tolerance.

This research project, lead by Andrew Sharpe at the Global Institute of Food Security and Bill Biligetu at the University of Saskatchewan College of Agriculture, will create a foundational genomic resource for wheatgrass and quack grass, with the intent of creating a cross that is more saline and drought tolerant.

While it might seem unusual to cross wheatgrass with quack grass, these crosses have already been successful throughout the world because it tolerates a variety of soils, stresses, and fungal pathogens. It has been crossed with wheat in the past to create resistant lines. Crossing wheatgrass with quack grass might also help a hybrid dominate over downy brome or foxtail barley.

This research will also generate a foundational genomic platform for hybrid wheatgrass - something that is not currently available. It will also decrease the amount of time to generate new cultivars compare to traditional breeding programs.