Performance of commercial wheat varieties under organic production

Michelle K. Carkner* and Martin H. Entz
Department of Plant Science, University of Manitoba
*corresponding author, carknemk@myumanitoba.ca

Abstract

Varieties on the Canadian prairies are tested under conventional conditions, where synthetic fertilizers and pesticides are used to ensure optimal production. However, organic farms are managed in such a way that varieties are subjected to different nutrient sources and more weed competition than conventional farms. Therefore, current variety information available to organic farmers does often not reflect the environment in which the varieties will be grown. Our goal is to test the performance of popular wheat varieties under organic production.

The test sites include seven locations across the Prairies between 2014 and 2021. Data presented is separated into low yield potential sites and high yield potential sites. An additional 3 site year experiment in 2019 is presented to showcase additional varieties. Varieties included in the studies are AAC Brandon, Vesper, AAC Tenacious, Glenn, and AAC Tradition.

Results show that the most commonly grown variety amongst organic farmers in Manitoba, namely AAC Brandon, experienced lower yields than most other varieties under both low and high yield potential conditions. Therefore, our data suggests that AAC Brandon, while an excellent variety for conventional production, may not be the best option for organic systems.

Ongoing research in our lab is testing a wider range of commercial varieties under organic production.