

PLANT BREEDING TO INCREASE PRODUCTIVITY OF ORGANIC WHEAT: RESULTS FROM THE GLENLEA LONG-TERM STUDY

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The Glenlea long-term rotation was started in 1992 and is the oldest study of organic cropping systems in Canada. This study compares two cropping systems—a grain-only and a forage-grain—under organic and conventional management. It also includes a restored prairie, which serves as an important ecological benchmark to compare the cropping systems to. Since 2021, an organically bred line from the participatory plant breeding program (PPB) has been seeded in the organic plots and a conventional variety has been seeded in the conventional plots. The aim is to see if wheat that has been selected under organic management is better suited to the organic system at Glenlea and may perform better than a conventional variety. The organic minus conventional data shows that the PPB line has lower yield loss in the forage-grain organic system, and in some treatments the crop biomass was higher than that of the conventional variety. In the years that we have been seeding the PPB variety, the growing conditions have been difficult but the results show promise for improving yield at the Glenlea long-term study with varieties of wheat that were selected under conditions similar to that in which it is grown.