Canola Salt Tolerance of Varying Seed Size

Barley is commonly grown by producers in saline areas. Recent research has suggested that hybrid canola varieties may have a similar salt tolerance to barley. In addition, canola's variable seed size may impact germination, survival and yield. In order to demonstrate how canola of different seed sizes performs at various salinity levels compared to barley, a trial was conducted near Prince Albert SK in 2020.

1 treatment of barley and 5 canola treatments were seeded at the Conservation Learning Centre in 2020: DKTF 92SC (check), Dekalb 75-65, and three seed sizes of DKTF 92SC (TKW 3.64g - small seed size, TKW 4.68g - medium seed size, TKW 5.44g - large seed size). Electrical conductivity was measured using an EM38 in the spring, mid-season, and fall to identify areas of low, medium, high and severe salinity within each plot.

As expected, barley yield decreased with increasing salinity (Figure 1). Barley in the severely saline areas experienced yield losses of around 15 bu/ac.

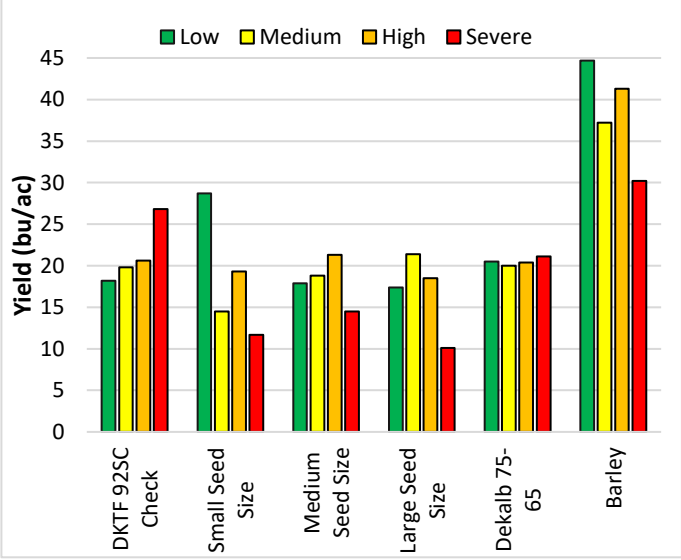

Figure 1. Canola yield of various seed sizes by salinity level.

All canola treatments performed poorly but did not differ significantly in yield across salinity levels (Figure 1). The canola of the smallest seed size displayed the largest yield losses with increasing salinity, indicating there may be a benefit to larger seeds in saline areas. The checks, DCKTF 92SC and Dekalb 75-65, had the highest yields in the severe salinity areas.

The CLC faced several challenges with this trial. Large amounts of volunteer canola were present, which made distinguishing the crop from the volunteers difficult and may have affected yield results. Due to time constraints, the canola's biomass was taken when the canola was past the swathing stage, which caused it to shatter and reduce the accuracy of the results. In addition, the non-saline areas had sandy soils and were uphill, which may have reduced the likelihood of significant yield results.

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