
What kind of wheat cultivar should I seed?

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Growing-season precipitation has a major impact on spring wheat yields every year. When soil is dry in the spring, and long-term weather forecasts suggest a dry summer ahead, producers may wonder if some cultivars are more drought tolerant than others.

Figure 1 showed yield comparisons between two high yielding Canada Western Red Spring (CWRS) wheat cultivars, AC Barrie and AC Superb, grown at Semiarid Prairie Agricultural Research Centre, AAFC, Swift Current, Saskatchewan. AC Barrie is a high-yielding and high-protein cultivar which is adapted to the Canadian prairies (McCaig et al. 1996). AC Superb is a semi-dwarf cultivar with relatively large kernel size and long maturity.

Grain yields in 1998 and 2000 were higher than other three years, and were associated with normal or above-average precipitations. Although the precipitation in 2002 was high, poor soil moisture condition in the early spring caused less yield compared to 1998 and 2000. In these three years, AC Superb had similar or slightly higher yield than AC Barrie.

Precipitations were low in 2001 and 2003 and resulted in very low yields. Although the precipitation in 2003 was slightly higher than in 2001, grain yield was lower, which was attributed to the severe water stress during grain filling in 2003. In these two dry years, AC Barrie tended to have higher yield than AC Superb and it was significant in 2003 ($P < 0.05$).

Previous studies suggested that, in general, short stature is a characteristic for greater yield potential (Austin et al. 1980). Its yield advantage tends, however, to be lower under semi-arid conditions (Duwayri, 1984; Richards, 1992).

It seems that AC Barrie is a good candidate for seeding in this area, regardless of the moisture situation.

References

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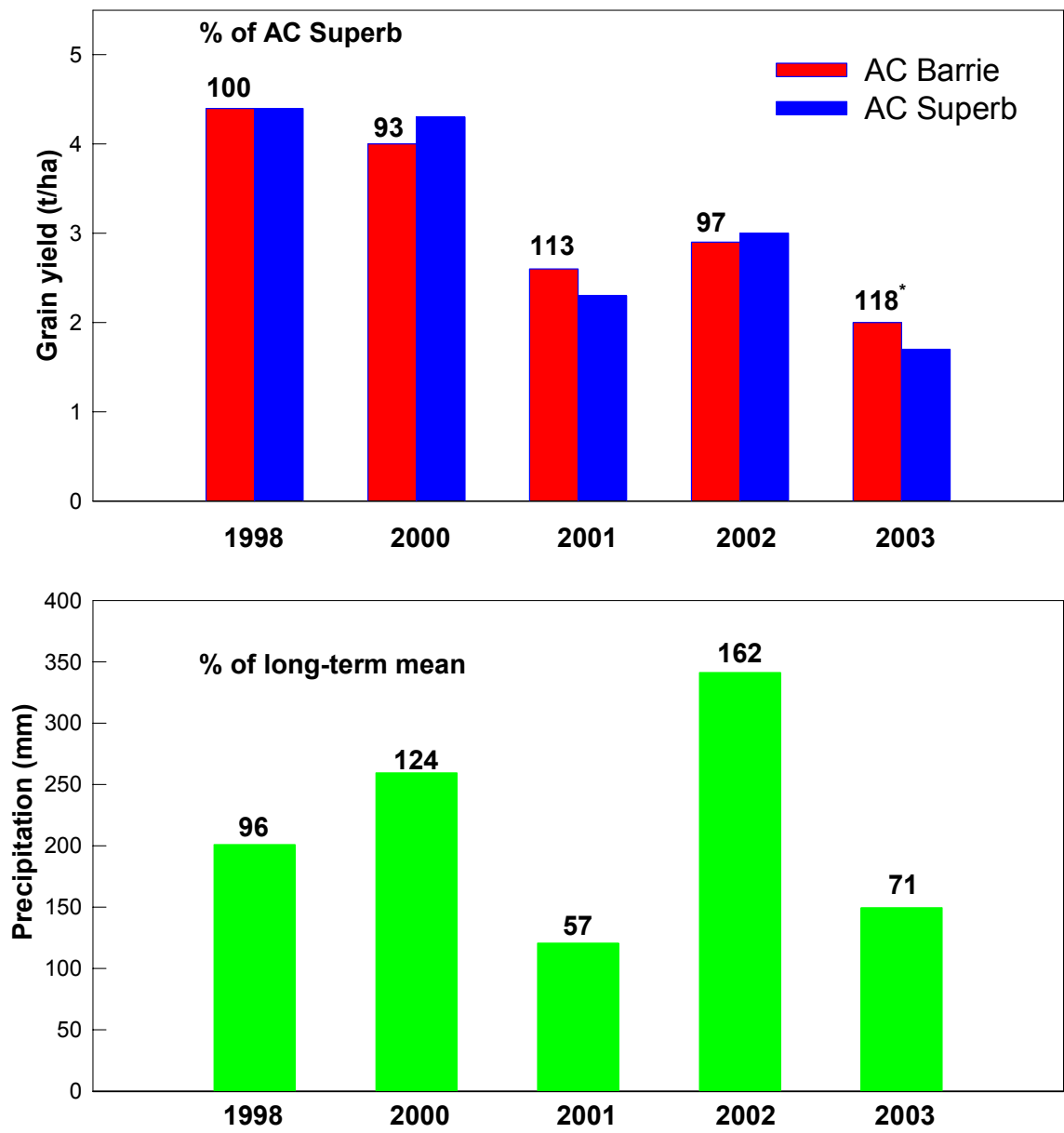


Fig. 1. Grain yield of AC Barrie and AC Superb and precipitation between May and August. Yield data in 1998: Western Bread Wheat Co-operative Test; 2000-2001: Physiology Study; 2002-2003: Saskatchewan Advisory Council Test.