

Tall fescue improvement for Australian perennial pastures

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Tall fescue (*Festuca arundinacea*) is a deep-rooted warm-season perennial pasture grass which is useful for grazing in areas receiving at least 700 mm annual rainfall, preferably with substantial summer incidence. It suffers three main limitations:

- poor winter productivity;
- poor seedling vigour;
- presence of an endophyte fungus in some lines causing heat stress and "fescue foot" in grazing animals.

Plant improvement program

A plant improvement program conducted jointly by the Victorian Department of Agriculture and NSW Agriculture is addressing these limitations. The objectives are to produce cultivars of two main types: one for southern Australia with enhanced winter productivity and summer dormancy, and one for central and northern New South Wales in which winter productivity will be enhanced but summer activity retained. Cultivars for both regions will

have greater seedling vigour and be free of endophyte.

Methods

Over 400 genotypes drawn from collecting expeditions in USA, USSR, Northern and Southern Europe, North Africa and the Middle East are being field tested at four locations (Hamilton & Balmoral Victoria, Glen Innes NSW, Albany WA). Further sowings from a recent collection in the Mediterranean region are planned. Direct selections from these evaluations may be released as interim cultivars if suitable, with seed increase commencing as early as 1996/7 (Figure 1). Additionally, parent lines will be identified for a cross/polycross breeding program to provide improved cultivars by 2002. Release of endophyte-infected lines will be avoided by use of a screening procedure currently being developed at Hamilton.

Acknowledgments

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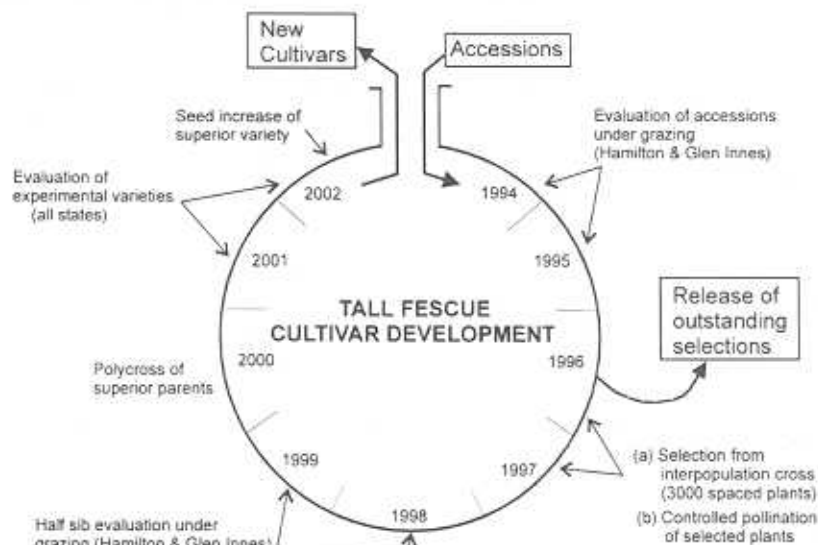


Figure 1. Schedule for the development of improved tall fescue cultivars.