Evaluation of Perennial Grass Cultivars for the Northern Tablelands

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Agronomic characters which influence the productivity of introduced pasture grasses on the Northern Tablelands include herbage growth (especially during winter), long-term persistence, seedling vigour, and nutritive value (especially when rank). A desirable grass should provide improvements in some or all of these characters, their relative importance depending on the enterprise for which the herbage is intended, the existing feed production pattern, and the potential of the natural resources, *ie.* climate and soils. Since persistence over at least 5 years is critical for an

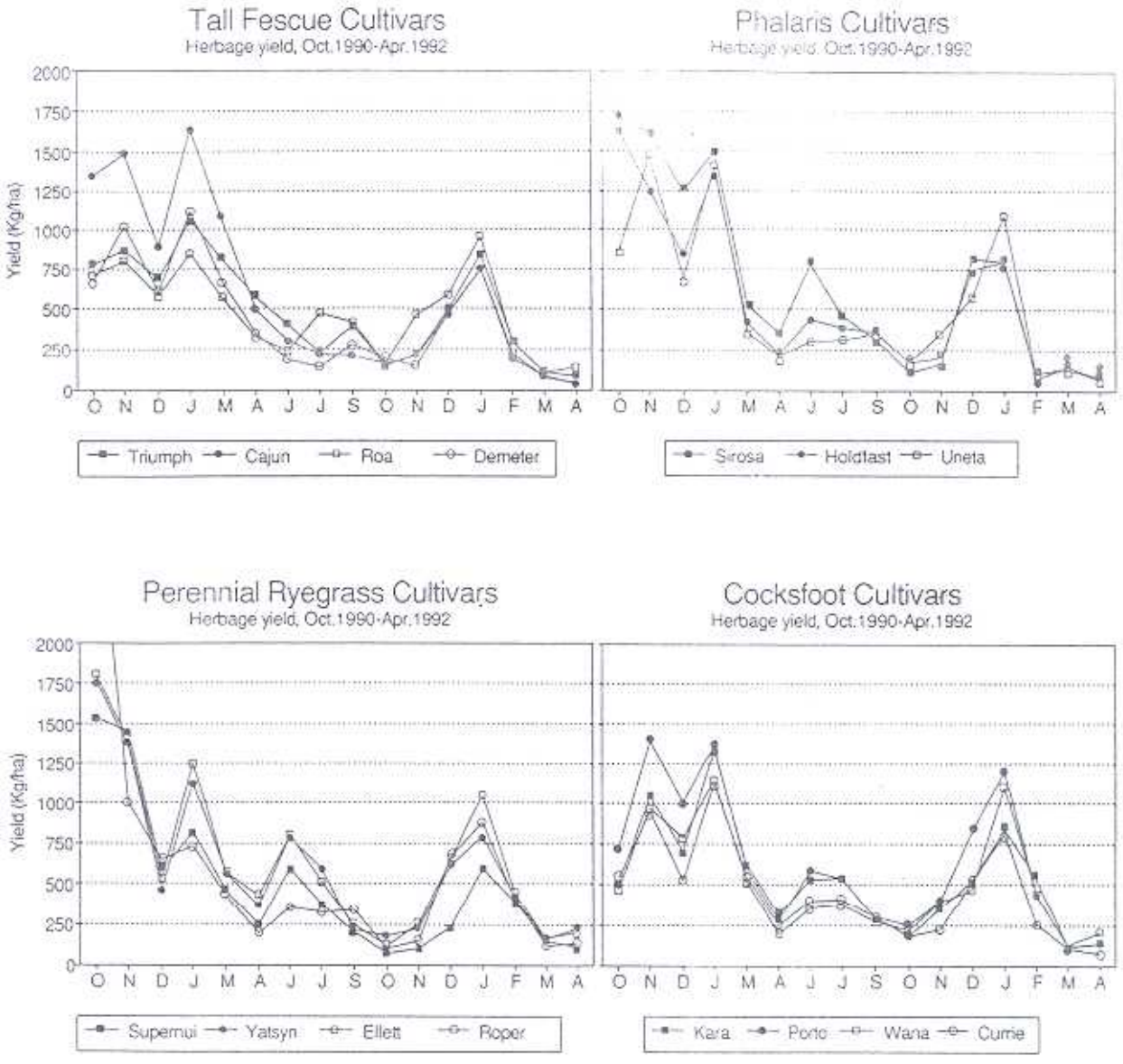

Figure 1: Yield of perennial grass cultivars on the Northern Tablelands of NSW.

economic return on investment in pasture sowing (Davies, 1991), features of primary importance are tolerance of the effects of summer drought and heavy grazing. In addition, increased winter growth is an important attribute.

The major introduced grass species used are *Festuca arundinacea* (tall fescue), *Phalaris aquatica* (phalaris), *Dactylis glomerata* (cocksfoot) and *Lolium perenne* (perennial ryegrass). A large number of both established and newly released cultivars of these species are being promoted without local testing (Duncan, 1989). Informed decisions by farmers about which species/cultivar to use in their particular circumstance require objective field comparisons of these cultivars in terms of the above performance characteristics.

METHODS

Perennial grasses comprising 21 cultivars of 6 species were sown into a prepared seed bed on heavy black clay soil. Plots are topdressed with 100 kg N/ha and 250 kg/ha superphosphate annually.

Herbage yield is estimated monthly, after which plots are crash-grazed to 2 cm with sheep. Additional estimates include seedling vigour and incidence of stem and leaf rust. The work will continue for at least 5 years in order to observe persistence.

RESULTS AND CONCLUSIONS

Results to date can only be considered as preliminary, and do not provide any indication of long-term persistence. They show that differences between cultivars at this early stage have been small and of short duration. Sirosa phalaris and Yatsyn and Ellett ryegrasses produced the highest herbage yields in winter, closely followed by Supernui ryegrass and Porto and Kara cocksfoots. Best recovery in summer after the dry spring of 1991 was by cocksfoots, Uneta phalaris and Ellett ryegrass.

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REFERENCES

Duncan, M.R. (1989). Tableland pastures - Where are we headed? In "Pastures revisited: getting the management right. *Proceedings of the Fourth Annual Conference of the Grassland Society of NSW*, Tamworth. pp. 26-32.

Davies, L. (1991). Aerial pastures - Do they pay? In "Aerial pasture establishment workshop - Orange". *Plant Industries Report No. 9*, pp. 23-27.