

Pasture composition survey of southern NSW

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Perennial pastures have the capacity to provide many benefits to a variety of agricultural systems. Their increased rooting depth and extended period of ground cover can alleviate and reduce the risk of land degradation problems such as soil acidity, salinity or erosion and may improve feed quality and availability. They can be successfully introduced and managed in the wheat belt and permanent pasture areas of southern NSW. The extent to which this occurs is unknown as no surveys have detailed pasture composition in the region. Surveys can accurately describe the diverse botanical composition of pastures (Wilson and Simpson 1993). The aim of this survey was to determine the regional pasture composition.

Methods

Fifty-three pasture paddocks were randomly sampled for botanical composition along two parallel transects running north and south of Wagga Wagga in southern NSW during late spring 1996. Transects were separated by approximately 90 km and ran west to east along a steep average annual rainfall gradient (400 mm to 1000 mm). A 280 km transect started 5 km west of Barellan running south of Cootamundra and east to Adjunbilly. Transect 2 covered a distance of 250 km and began 2 km east of Morundah following a line to Yerong Creek and finishing 15 km east of Tumbarumba. Roadside paddocks (alternating right and left sides) were sampled approximately every 10 km. Species frequency was determined using a modified rod point method. Eight sampling points were recorded every 5 m along two intersecting 100 m transects (a total of 320 points per site).

Results and conclusion

Over 90 species were identified in the pastures

Table 1. Occurrence of nominal species groups in pastures of southern NSW. The proportion of sites sampled where the species group comprised 20 % of pasture.

Species Groups	Proportion of Sampled Sites (%)
Annual grasses	83
Subclover	52
Broad leaf weeds	17
Sown perennial grasses	12
Perennial legumes	8

sampled. These included the more traditional, introduced annual and perennial species, other useful native perennials such as wallaby grass (*Danthonia* spp.) and weeping grass (*Microlaena* spp.) and a range of weeds. Few sown or legumes (eg. phalaris, cocksfoot) were recorded, ie. less than 25% of paddocks contained sown perennial species. Subclover was present at all survey sites and contributed greater than 20 % to pasture composition in approximately 50 % of paddocks (Table 1). Grasses (particularly annual ryegrass, vulpia and brome) were the pre-dominant group amongst the annual species. There was a comparatively lower occurrence of broadleaf weeds. The apparent lack of sown perennial species coupled with the high incidence of annual grasses illustrate that pastures in this region are unlikely to fulfill their potential to achieve desirable levels of sustainability or productivity.

References

- Wilson, A.D. & Simpson, R.J. (1993). The Pasture Resource Base: status and issues. In 'Pasture Management Technology for the Twenty - first Century'. Kemp, D.K. and Michalk, D.L.(eds.), CSIRO, Australia, pp.1-25.