

Seasonal Changes in Pasture Botanical Composition

Col Langford and Peter Simpson

*NSW Agriculture
Goulburn, NSW, 2580*

Botanical composition is often the parameter used to rate the degradation of improved pastures. In this paper, changes in botanical composition of a pasture over three years at the same stocking rate with the only variable being rainfall, are discussed.

Methods

A paddock at Tarago, near Lake George, on the southern tablelands of NSW, was part of the statewide Pasture Assessment Project (PAAP). The paddock was 21 hectares in area, gently undulating, and has a predominantly north westerly aspect with a creek running across one end. The soil is a grey sandy loam with a depth greater than one metre. The paddock had been

sown in 1982 to an "improved pasture" of phalaris, perennial ryegrass and subclover, but had other species present, notably dryland couch, *Vulpia*, *Bromus* and the native grasses *Stipa* and *Poa*. 120 wether hoggets grazed the pasture at a stocking rate of 5.67 wethers/ha. Visual assessments of the pasture (mass and botanical composition) were made using the Botanal technique every six weeks from June 1990 to August 1992.

Results and Discussion

Rainfall and changes in pasture mass and botanical composition are shown in Figure 1. Botanical composition changed dramatically from year to year and be-

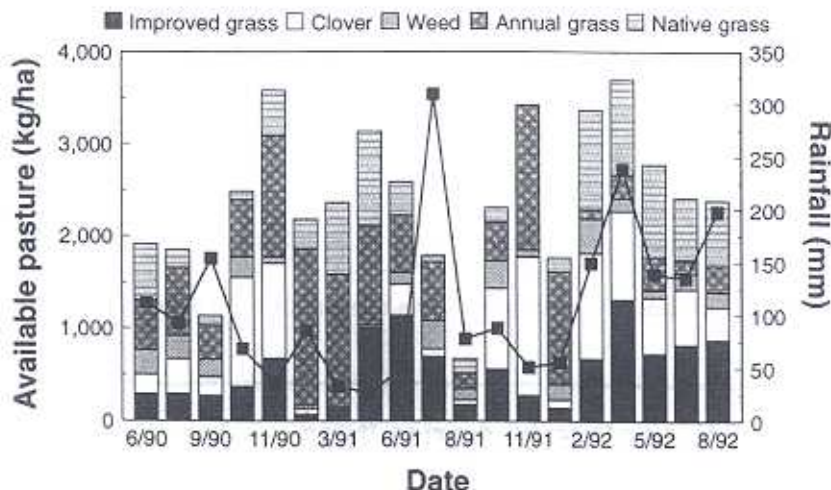


Figure 1. Effects of rainfall on pasture mass and botanical composition at Tarago PAAP site.

tween months within years. The best example of this was the annual grass component, which varied from 78% in late January 1991 to 3% in mid-February 1992. Similar changes can be seen in other components of the pasture. This illustrates that botanical composition is a dynamic system which may change from year to year without altering the botanical composition in the

long-term. When examining pasture composition it is therefore important that this is done over a long period of time, otherwise changes may only be a reflection primarily of the rainfall and grazing management.

Rainfall obviously has a large influence on the germination of annual species and competition between the components of the pasture. The rainfall pattern on the southern tablelands is characterised by winter dominance (effective rainfall) and reasonably reliable springs with a patchy storm pattern over summer and autumn. Rainfall patterns throughout the tablelands fluctuate dramatically both in annual amounts and in timing. An important goal for sustainable pastures is to maintain as close to 100% ground cover as possible. It is unlikely that any one species will be ideal for this purpose.