



## GRAZING MANAGEMENT AND PASTURE COMPOSITION: PRELIMINARY RESULTS FOR PERENNIAL PASTURES AT ORANGE

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The productivity of a pasture depends upon maintaining both legumes and grass in that pasture. Often, though, these desirable species are replaced by less desirable annual grasses and broadleaf weeds. Pastures on the tablelands frequently show a decline in composition and need to be resown without having returned a profit on establishment costs. The maintenance of desirable species in a pasture depends upon how that pasture is managed. The importance of good nutrition with fertiliser and of weed control are well understood. There is, though, very little information on how grazing management practices affect pasture composition. This paper reports on the first year from an experiment designed to examine the effects of grazing practices on pasture productivity and composition. This experiment is one of six in a project to seek better pasture management techniques on pastures across the central tablelands and slopes of NSW.

### METHODS

The experiment is sited in an improved pasture sown to phalaris (cvs. Sirosa and Australian), white clover (cv. Haifa), lucerne (cv. Aurora) and sub clover (cvs. Woogenellup and Karridale). The pasture is continuously grazed by merino wethers at 10-15 per ha and treatments are arranged in four, separate replicate rows within the pasture. A nearest neighbour design is used. Each plot is 10 x 15m, individually fenced and open to grazing when treatments require. The treatments used are 1. control (treated as remainder of paddock); 2. autumn closure (ie no grazing in autumn to allow regeneration); 3. winter closure; 4. spring closure; 5. summer closure; 6. rotationally graze for six weeks on then six weeks off throughout the year; 7. herbicides for annual grass control; and 8. heavy grazing in spring to maintain short pasture growth. When plots are closed, stock are excluded for that three month period, but the rest of the year grazed as the rest of the paddock. Every six weeks pasture yield and composition on all plots are measured. The pasture was sown in 1988 and the experiment commenced in June, 1989. During the first year, conditions for pasture growth were good except in summer when little useful rain was recorded. In April 1990, heavy rains fell resulting in the best early autumn break for years.

### RESULTS AND DISCUSSION

The results obtained in this first year show that strategic grazing practices like deferred grazing can have a significant effect on pasture composition. These effects can modify the normal patterns of pasture composition due to climatic factors and species competition. The major effects were that resting pastures in winter decreased the proportion of volunteer grasses and decreased white clover and phalaris. Summer rest increased lucerne in the pasture and an autumn rest has decreased the proportion of volunteer grass in the pasture. Keeping pasture short in spring nearly doubled the proportion of white clover, but depressed phalaris. Some of these effects continued after plots were returned to the normal continuous grazing system especially the winter and spring treatments, though with time plots tend to return to a similar composition as the controls. This experiment will continue for another three years to assess any long term trends and to examine the effects of different seasons. Ultimately the best grazing management practice may involve a combination of the treatments being tested in this study.