# Grazing management - not just a rest for your pastures

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Grazing management is an important component of farm management, but what should be the basis of grazing management strategies? The hypothesis that rotational grazing is beneficial to both pasture and animal production has been widely tested and the main conclusion drawn was that, except for lucerne, rotational grazing systems (particularly those dictated by time, calendar or seasonal periods) have no direct advantage in animal product (Wilson *et al.* 1984). The present interest in grazing management is directed toward the maintenance of sustainable pastures, an aspect which was not closely studied in previous research. While resting from grazing can improve pasture production or composition, how can this best be achieved and utilised?

## Grazing Studies at Shannon Vale

An experiment at Shannon Vale Field Station from 1975 to 1983 compared the effect of four seasonal rests (spring, summer, autumn and winter) and continuous grazing on the botanical composition of improved pastures at two stocking rates (13 and 20 wethers/ha). Composition was measured by point quadrat analysis (420 points/treatment) during the winter of each year except 1979.

## Results

No consistent changes in the relative proportion of

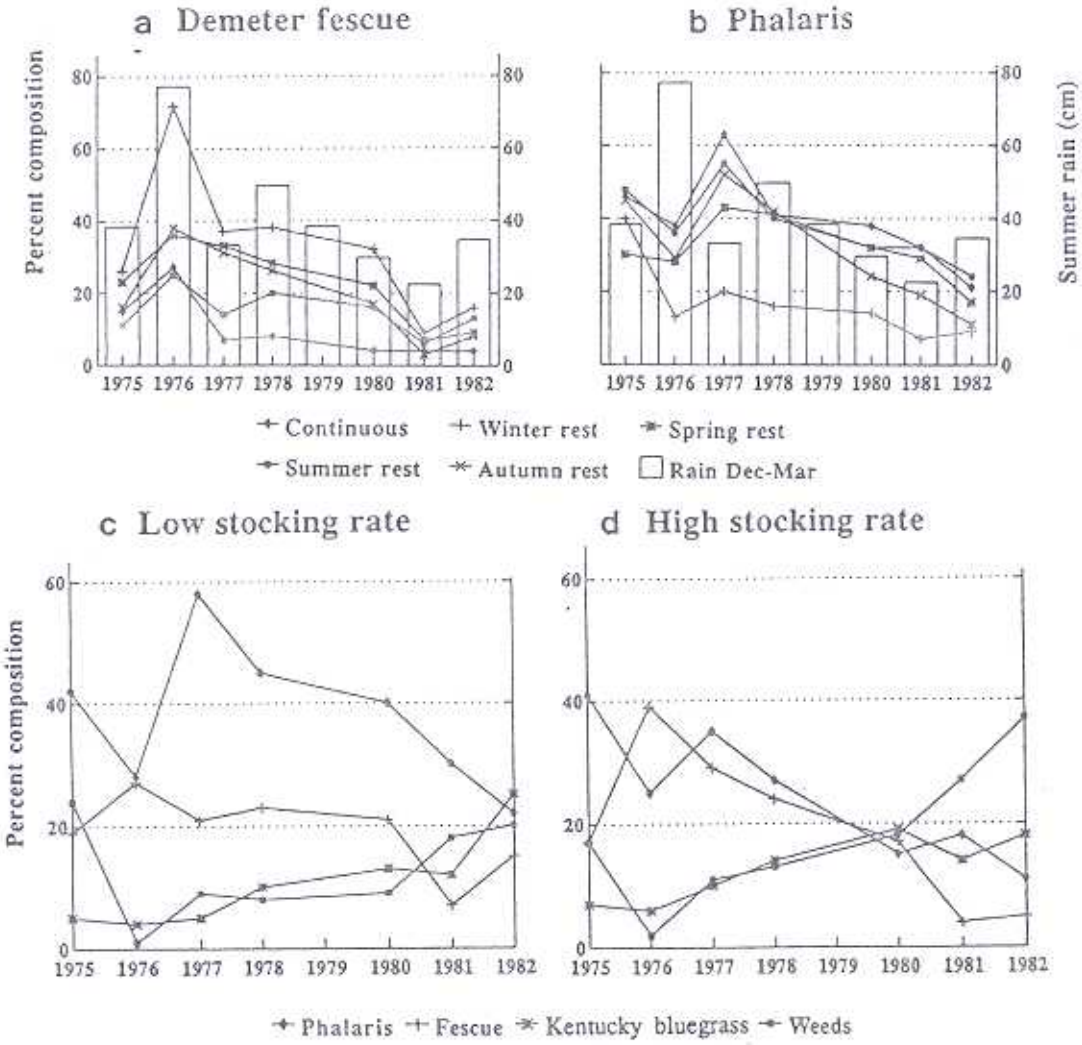


*Figure 1:* The effect of grazing treatments and rainfall (December to March) on the proportion of a) fescue, and b) phalaris in the sward. Parts c) and d) show the changes in the proportions of the four main pasture components at each stocking rate.

species were recorded between resting treatments although fescue tended to be reduced by continuous grazing (Figure 1a) and phalaris appeared to be depressed by winter resting (Figure 1b). Most changes in botanical composition appeared to be related more to climatic events than to planned treatments. For example, the proportion of fescue declined in years of low rainfall (Figure 1a) while the contribution of phalaris was largely unaffected, suggesting that it persisted better in drought.

Pastures were predictably less stable at the higher stocking rate as illustrated by comparing the data for the four main components of the pasture (phalaris, fescue, Kentucky bluegrass and broad-leaved weeds) at each stocking rate over the experimental period (Figure 1c and 1d). The proportion of both phalaris and fescue declined at both stocking rates but the decline was greater (significantly for phalaris 1977 - 1980) at the higher stocking rate; on the other hand Kentucky bluegrass (a residue component of a previous pasture) and the proportion of broad leaved weeds increased during the final three years of measurement. The broad-leaved weed component was significantly greater at the higher stocking rate during the final year of the experiment. Although the stocking rates used in the experiment were much higher than usual commercial practise, they indicate the need for conservative stocking rates where sustainable pastures are an objective. They also illustrate the need to maintain the desirable component of the sward if weed invasion is to be prevented.

## Discussion

The lack of effect due to grazing method contrasts with the findings of Lodge *et al.* (1984) who used a knowledge of reproductive biology to bring about a change from a sward dominated by an undesirable species (*Aristida ramosa*) to dominance by the desirable species (*Danthonia linkii*). These contrasting results highlight the importance of relating individual plant growth characteristics to grazing management procedures to manipulate or maintain their proportion in overall pasture composition. This result has many similarities with previous research into rotational grazing and animal production where rest periods without specific objectives did not prove beneficial to animal production.

## Conclusion

To be successful grazing management strategies should adress aspects of plant biology to:

- maintain or increase the density of existing desirable pasture components; or
- change botanical composition by increasing desirable species and decreasing undesirable components.

Wilson *et al.* (1984) indicated that such changes were only relevant to perennial pasture species since annuals are disadvantaged by resting. They also observed that improvements in composition were usually only modest and may take several years to develop. They suggested that where additional fencing expenditure was needed it may not be economically justifiable.

## References


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Wilson, A.D., Harrington, G.N. and Beale, I.F. (1984). Grazing Management. *In*: Management of Australia's Rangelands" Edited by G.N.Harrington, A.D.Wilson and M.D.Young, *CSIRO* Melbourne, p 129-139.