

PASTURE PREFERENCES OF DEER

Ian Scott
Matamata



As the involvement of veterinarians within the deer industry expands beyond the realms from medicine alone, we find ourselves requiring a far greater understanding of all factors affecting animal performance. No longer is it adequate to grasp the difference between health and ill-health. Farmer clients also require that we can recognise 'optimal' performance of stock, and understand the mechanisms involved in achieving this result.

The inherent mismatch in pasture-growth and feed-demand curves of deer is a well known and understood problem but as veterinarians we tend to concentrate solely on modifying the animal while overlooking other viable and achievable options.

I would like to present some of the findings of a trial currently being conducted at Matamata by Grasslands Division DSIR in conjunction with South Waikato Deer Farmers Association, to establish pasture species preferences by different species and classes of deer. The results to date do not cover a full year's study.

1. Experimental Design

Four replicates of sixteen grasses, herbs and legumes in plots 7m x 7m in an 8 x 8 grid were established.

Pasture species used were:

High Endophyte "Grasslands Nui" Ryegrass (<i>Lolium perenne</i> L)	"Grasslands C32" Lotus (<i>Lotus corniculatus</i> L)
Low Endophyte "Grasslands Nui" Ryegrass (<i>Lolium perenne</i> L)	"Grasslands Oranga" Lucerne (<i>Medicago sativa</i> L)
"Grasslands C4708" Ryegrass (<i>Lolium x hybridum</i> Hausskn)	"Grasslands Kopu" White clover (<i>Trifolium repens</i> L)
"Grasslands Kara" Cocksfoot (<i>Dactylis glomerata</i> L)	"Grasslands Sainfoin" (<i>Onobrychis vicifolia</i> Scop)
"Grasslands Matua" Prairie Grass (<i>Bromus willdenowii</i> Kunth)	Aokau Sulla (<i>Hedysarum coronarium</i>)
"Grasslands Kahu" Timothy (<i>Phleum pratense</i> L)	"Grasslands Chicory" (<i>Chochorium intybus</i>)
"Grasslands Roa" Tall Fescue (<i>Festuca arundinacea</i> Schreb)	Sheeps burnet (<i>Sanguisorba minor</i>)
"Grasslands C27" low oestrogen red clover (<i>Trifolium pratense</i> L)	Common Dock (<i>Rumex obtusifolius</i> L)

When pastures were an average 15cm tall, deer are introduced and their preferences recorded using four pole-mounted remote controlled cameras. Each camera sighted four treatment lanes with two cameras on each of two adjacent sides of the grid.

Cameras were triggered by a concealed operator, at two minute intervals, for three 70 minute periods. Only deer which are actively feeding were recorded, to eliminate group wandering tendencies.

2. Results

2.1 Red Hinds (lactating) ~ Summer

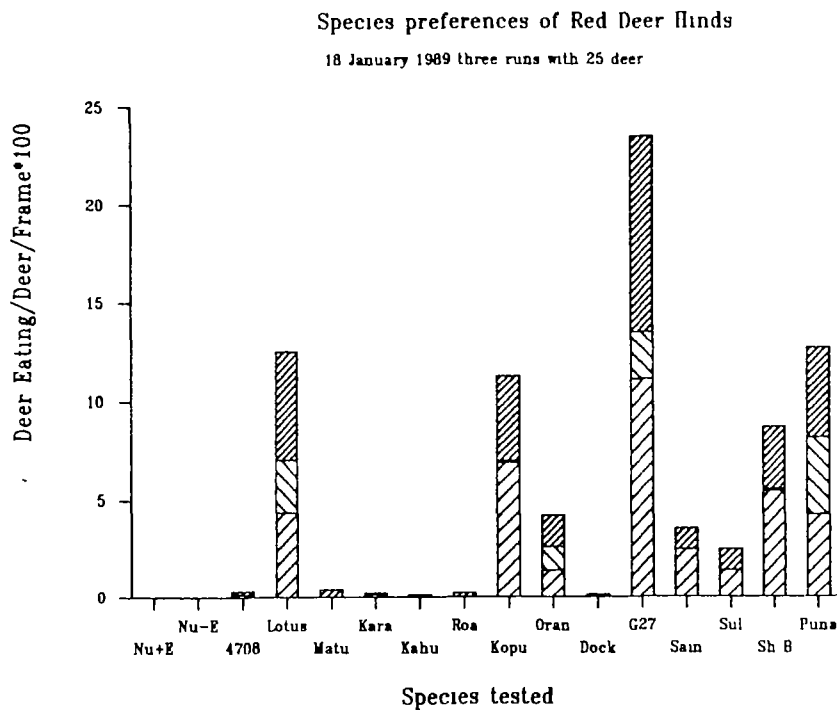


Figure 1 : Grazing preferences of lactating red deer hinds in the Waikato during summer.

The preference for low oestrogen red clover is twice that of any other species trialed. Lotus, chicory, white clover and sheeps burnet were among the preferred species. The remaining legumes were all preferred more than grasses. Thus conventional ryegrass achieved the lowest acceptability of all the pastures on offer.

2.2 Yearling Stags ~ Autumn

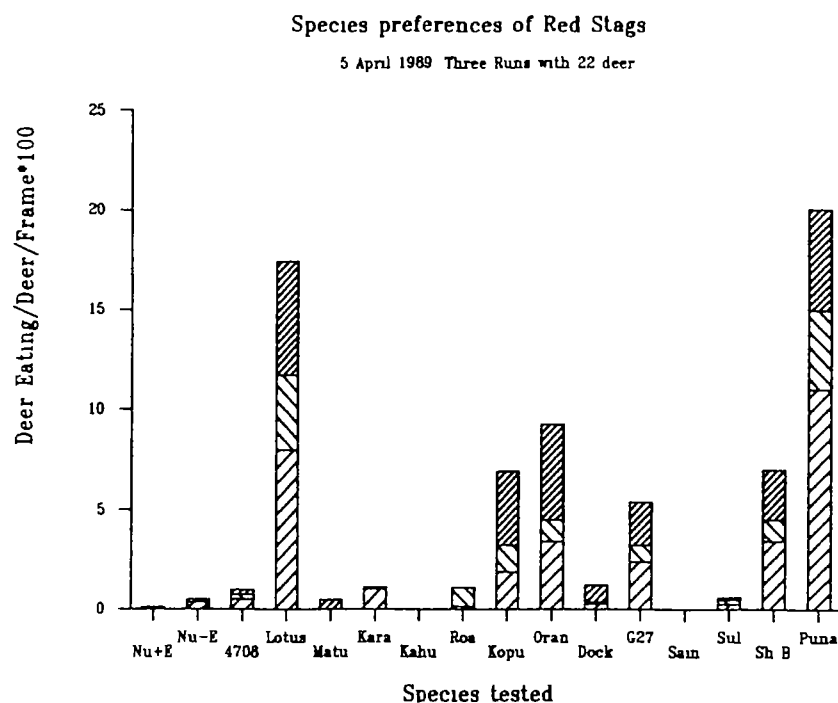


Figure 2 : Grazing preferences of red deer stags in the Waikato during autumn.

Young stags had three clear preference groups.

- a) most preferred = chicory or lotus
- b) intermediate = lucerne, white clover, sheep burnet
- c) least preferred = all grasses.

2.3 Fallow Deer ~ Autumn

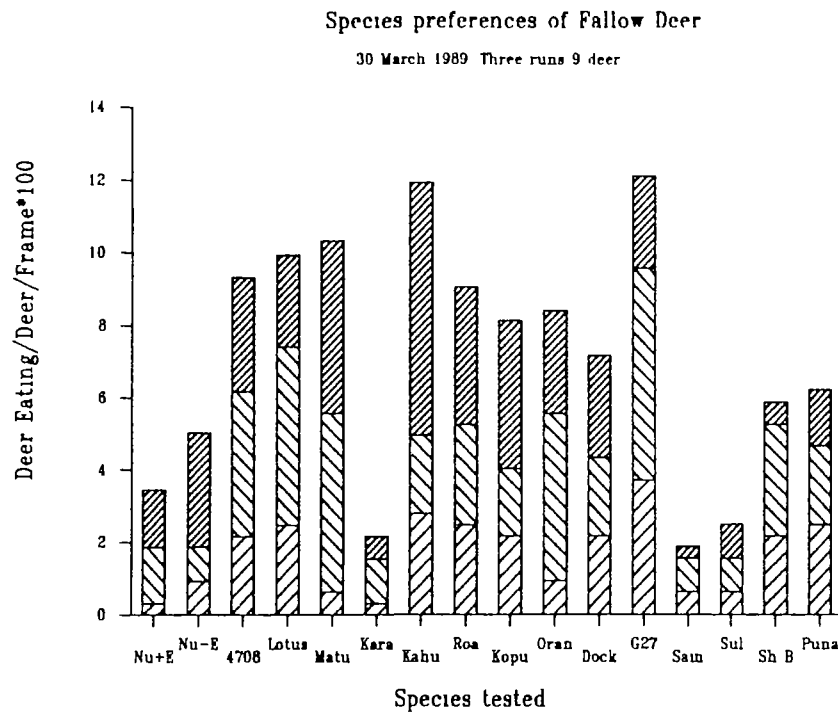


Figure 3: Grazing preferences of fallow deer in the Waikato during autumn.

Low oestrogen red clover and timothy were preferred slightly above prairie grass, lotus, tetraploid ryegrass, tall fescue lucerne and white clover. Once again high endophyte ryegrass was amongst the least preferred species.

Discussion

By studying the observed pasture preferences of deer it is possible to understand some of the changes that occur in mature deer pastures. Deer pastures assume a very dense even ryegrass dominant nature, probably because the deer have eaten everything else until these species are removed by competition with the vigorous but less palatable ryegrass.

The marked preference of red deer for legumes above grasses will make it very difficult to maintain reasonable quantities of clover in any pasture and in the long term this may be detrimental to pasture performance because of the loss of clover nitrogen-fixing qualities. It will also make the establishment and management of mixed species pastures difficult e.g prairie grass and red clover. I have tried this combination on my own farm but even under light grazing pressure the deer quickly reduced the red clover to very low levels allowing competing species such as poa to invade, especially during a dry summer.

Fallow deer, on the other hand, do not exhibit such a marked preference for legumes over grasses so it is likely that a balanced pasture could be maintained more easily when grazed solely by fallow rather than red deer.

As work progresses on the trial we will build up information as to the seasonal variation in palatability of various species. It is possible that ryegrasses may be preferred in winter and spring when their quality is higher

While it is not yet possible to state that animal performance will improve by grazing on more palatable species, extrapolation from sheep and cattle research would suggest that intake levels and ultimately growth rate are benefitted.

This theory may also be supported by the fact that very few stags today reach the bodyweight or grow antlers the same proportion as many of the stags shot in New Zealand High country when they moved into virgin territory, selecting and eating only the most preferred species.

This trial cannot hope to answer the complex questions relating to stock performance and related economic returns, but it illustrates just how little we currently understand about cervine nutrition. It suggests that certain pasture species may well enhance stock performance during initial periods of the year and perhaps, most importantly, it casts doubt on the maxim that ryegrasses will be the deer farmer's salvation

Our future observations may provide these answers.

Acknowledgements

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