

## Planning pastures for horses

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With approximately 1.5 million horses in Australia, the horse industry is a major contributor to the Australian economy and lifestyle (Pilkington & Wilson 1993; Avery 1996). Yet little research has been conducted into the nutritional requirements of horses in Australia (RIRDC 1997).

Pasture species and their management techniques for horses, have been developed from an extrapolation of research into sheep and cattle, which exhibit a different grazing behaviour, as well as overseas equine data, particularly from USA, New Zealand and the United Kingdom (Gurr *et al* 1996; Kelleher 1997).

The success of the New Zealand Thoroughbred industry has been attributed to its reliance on pastures (Hunt 1994; Avery 1996), but the Australian industry, whilst slowly moving toward a greater reliance on pastures, still remains heavily dependant on supplementary feeding (Avery 1996; Gurr *et al* 1996; Kelleher 1997). It is felt that the performance horse industry, which is largely centred around the rural/urban fringe, also has a heavy reliance on supplementary feeding. This appears to result in stocking rates, that are significantly greater than the same pasture would carry with either sheep and/or cattle, where supplementary/concentrated feeding is

not an integral part of nutrition. In these circumstances, the pasture is also being used, to varying degrees, as a "dust free exercise area" as well.

As a result of their grazing and social behaviour, horses apply considerable pressure to a pasture, through a combination of:

- a very selective grazing habit;
- continuous grazing for long periods in small paddocks;
- social behaviour *eg.* continual running along fence lines creating bare areas;
- development of ungrazed areas where horses urinate and defaecate;
- bare areas surrounding feed and water points;
- hoof action from horses galloping across a paddock, removing large "divots" of pasture, that are often replaced by weeds. Shod horses are worse than bare hooves.

Pasture management is complicated by the fact that the more palatable, nutritious species are often less resistant to continuous heavy grazing pressure



and "wear and tear", whilst the less palatable species tolerate wear and resist degradation better. As pastures become more degraded, it becomes increasingly difficult to meet the nutritional requirements of the horses, unless stocking rates are significantly reduced. If this is not possible, then the need for supplementary/concentrated feeding is increased and the economics of horse nutrition escalate. This paper reports on a survey into some aspects of pasture selection and utilisation on a range of horse properties across eastern Australia.

## Methods

A list of horse properties was compiled, using a stratified random sampling technique, across eastern Australia. Information was gathered from 50 owners or managers from areas where horse properties are concentrated, focussing on:

- South - east Queensland (9 participants)
- Hunter Valley, NSW (16)
- Outer Sydney, NSW (4)
- C. W. / S. W. Slopes & Riverina, NSW (10)
- Northern slopes and tablelands, NSW (2)
- Central and eastern Victoria (9)

The majority of participants were involved in the breeding of Thoroughbred horses. Some performance horse studs and agistment properties were included to broaden the representation. Each owner/manager was interviewed by telephone, using a standardised survey questionnaire.

## Results

### *Pasture types on properties*

- all fully improved - 34% of properties
- all semi improved - 30% of properties
- all native species - Nil
- all 3 categories above - 12% of properties
- fully improved + semi improved - 18% properties
- fully improved + native pastures - 6% of properties

### *Desired use for pastures*

- nutrition only - 22% of respondents
- development of young stock - 18% of respondents
- exercise and health - 6% of respondents
- all 3 categories above - 32% of respondents
- development of young stock + nutrition - 16% of respondents

- exercise + development - 4% of respondents
- exercise + nutrition - 2% of respondents

### *Main reasons for choosing pasture species*

- nutritional value only - 34% of respondents
- nutrition + resistance to wear and tear - 28% of respondents
- nutrition, resistance, weed control - 12% of respondents
- nutrition + weed control - 10% of respondents
- nutrition, weed control, resistance, aesthetics - 6% of respondents
- resistance to wear and tear only - 4% of respondents
- resistance + aesthetics - 4% of respondents
- weed control only - 2% of respondents
- aesthetics only - Nil

### *Owner/managers who change pasture species for different purposes*

- yes - 50%
- no - 50%

### *Pasture management techniques employed*

- slash paddocks (seasonal to 1-4 times/year) - 96% of respondents
- move feeders regularly - 78% of respondents
- harrow/spread manure - 74% of respondents
- rotational grazing employed - 66% of respondents
- irrigation used - 66% of respondents
- design of paddock shapes (*ie.* no corners) - 34% of respondents

### *Pasture degradation is identified as a problem*

- yes - 64% of respondents
- no - 36% of respondents

### *Pasture degradation problems identified*

- bare areas near feeders, water points, fence lines - 96% of respondents
- weed invasion - 80% of respondents
- overgrazing - 36% of respondents
- leaving large areas ungrazed - 24% of respondents

## Discussion

This survey confirms the earlier findings by Gurr *et al.* (1996) that horse property owner/manag-





ers across eastern Australia, use their pastures mainly for nutrition (72% of respondents). However, exercise and development of young stock are also seen to be important.

Whilst nutrition is a highly regarded aspect of pasture species selection, 54% of respondents included "wear and tear" and 30% included weed control as a consideration in their species decision making. It is felt that most sheep and cattle producers would not even consider resistance to "wear and tear". As well as this, irrigation is widely used, paddocks are slashed, rotational grazing is widely employed and feeders are regularly moved, yet 64% of owner/managers identified land degradation as a problem. Horse behaviour, denuding pasture in areas where they congregate, is seen as the biggest problem. If dusty areas can be reduced, another benefit which will flow on, is a reduction in the incidence of health problems, such as Rattles - a potentially fatal bacterial pneumonia in foals, acquired by manure dust inhalation.

On most Thoroughbred studs, horse groups (eg. mares) move around the property in a regular pattern throughout the year. Even though the different groups have different nutritional requirements at various stages of the year, 50% of properties use the same pasture mixture in all paddocks. Gurr et al (1996) reported that the vast majority of studs consider the nutrition from their pastures when determining supplementary feed rations. So it can be deduced that many, if not all, of the 50% who vary their pasture mixtures to suit a specific purpose, still do not meet the horses nutritional requirements in many instances, as they are also supplementary feeding.

This survey again highlights the need for research into pasture nutrition for horses. If

owner/managers select pasture species mainly for nutritional purposes and use their pastures accordingly, why is there such a reliance on concentrated/supplementary feeding throughout the industry? Why are pastures in New Zealand seen as adequate (Hunt 1994), but even irrigated pastures in Australia, inadequate?

For many paddocks, the selection of pasture species for the paddock should be refined, to address both nutrition and land degradation problems. Instead of sowing the entire paddock to the same pasture mixture, it is suggested that the paddock be divided into segments and sown accordingly. The main segment in most paddocks could be sown to a pasture mixture where nutrition is the main factor and segments where horses congregate, be sown to species where "wear and tear" is the sole consideration.

## References

- Avery, A. (1996) Pastures for Horses - A winning resource. RIRDC and Equine Research and Development Program. Adelaide
- Gurr, G.M., Aston, S.C., Hunt, E.R., Morrison, C.G., Wheatley, W.M. and Woodward, R.A. (1996) A Survey of Agronomic Practices on Thoroughbred Horse Stud Farms. RIRDC Research Paper 96/2, Canberra
- Hunt, W.F. (1994) Pastures for Horses, New Zealand Equine Research Foundation, Massey, N.Z.
- Kelleher, F.M. (1997) The Ecology and Management of Horse Pastures, In: Proc. Equine Nutrition and Pastures for Horses Workshop, Richmond NSW. 1995 RIRDC Research Paper 97/3, 17-30, Canberra
- Pilkington, M. and Wilson, G. (1993) Australian Horses as a Primary Industry: Numbers, Organisation and Research Needs, RIRDC, Aust. Gov. Publishing Service, Canberra
- RIRDC (1997) Proceedings of Equine Nutrition and Pastures for Horses Workshop, Richmond NSW. 1995 RIRDC Research Paper 97/3, 82-97, Canberra