A burn/graze strategy for improving natural pastures in Northern New South Wales

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A major problem associated with livestock production from the natural pastures of the northern Slopes of New South Wales is the widespread occurrence of wiregrass *(Aristides ramose),* a coarse tussocky grass of low forage value (1). Its three-awned seeds also contaminate wool, hides and carcases (2), resulting in substantial losses to producers. More valuable winter growing native perennial grasses such as *Danthonia* spp are present in these pastures although they occur less frequently. Grazing management can be used to manipulate the abundance of these species, provided that the periods of grazing and rest are matched to their phenology (3). Heavy summer grazing by sheep reduces wire-grass, but its low forage value leads to liveweight and fleeceweight losses (4). These losses can be minimised by spring burning to reduce the amount of dead herbage and promote green regrowth. The study reported here describes a management strategy for improving pastures dominated by wiregrass.

Methods

Two unreplicated 40 ha demonstration plots were established south-east of Barraba, NSW. To reduce wiregrass, one treatment area was burnt in August 1985 and then intermittently stocked from November to May 1986 at a rate of 12.5 sheep per ha. The area was then rested from grazing until November 1986

to encourage the growth and seed production of *Danthonia* spp. A similar control area was not burnt but was grazed continuously at 2.5 sheep per ha.

Results and Discussion

Burning in spring followed by heavy summer grazing almost completely eliminated wiregrass, reducing its basal cover from 6.4 to 0.1 (Table 1). Compared to the control areas the wiregrass yields and densities were also greatly reduced by burning and heavy grazing; resting from grazing in winter increased *Danthonia* basal cover from 0.4 to 6.0Z.

Table 1. The effect of burning and heavy grazing on yield, density and basal cover compared to a lightly grazed (control) plot.

	2.8.85		27.11.86	
	Treatment	Control	Treatment	Control
Aristida ramosa yield (t/ha)	6.7	6.1	0	11.4
Aristida ramosa density (plants/m^2)	21.9	19.9	0	15.7
Basal cover (Z):				
Aristida ramosa	6.4	6.4	0.4	11.0
Bothriochloa macra	3.5	3.8	3.0	3.0
Danthonia linkii	0.4	0.2	6.0	0
Dichelachne micrantha	0	0	0	0

These results reflect the experimental results reported by (3) and those being collected for experimental replicated plots (Lodge, unpublished data). Compared with results from similar studies using only heavy summer grazing (5) a burn/graze strategy may be the most effective means of reducing wiregrass.

1. Lodge, G M and Whalley, R D B 1983. Aust Rangel J 5(1) 20-7.

2. Lodge, G M and Hamilton, B A 1981. Aust J Expt Agric Anim Husb 21 382-6.

3. Lodge, G M and Whalley, R D B 1985. Aust Rangel J 7(1) 6-16.

4. Archer, K A and Lodge, G M 1986. Proc Aust Soc Anim Prod.

5. Lodge, G M 1985. Proc Sheep and Wool Sem, Armidale NSW.