

THE EFFECT OF MANAGEMENT STRATEGIES ON THE PRODUCTIVITY OF WEANER SHEEP
IN NORTH WEST QUEENSLAND

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Pasture management strategies that increase weaner productivity (Stephenson et al. 1985) are of major benefit to the sheep industry, particularly in north west Queensland. High weaner mortality can be attributed to low protein content in the pastures (Rose 1972). These experiments were designed to improve pasture quality by stimulating new growth.

Mixed sex weaners (5-6 months old) were used in three experiments, completed in three seasons. Weaners were randomly allocated to paddocks where pasture was harvested for hay (5% of area) then allowed to regrow (4 months) or spelled (4 months) (Expt 1); pre-grazed with cattle (5 weeks at 1 steer/1.5 ha) then spelled (4 months) or spelled (5 months) (Expts 2 and 3). Sheep were weighed for five weeks (Expt 1) and 12 weeks (Expts 2 and 3) after commencement of the treatments. Rumen ammonia (NH₃) measurements were conducted on six weaners in each treatment in experiments 1 and 3 up to four weeks after commencement. Wool production was measured on midside clip patches (10 per group) (Expt 1) or from annual fleece weight (Expt 2).

Table 1 Number, mean liveweight gain (ADG), rumen ammonia, wool production and survival of weaners

Experiment	n	ADG (g/d)	Rumen NH ₃ (mg/100 ml)	Wool production (mg/cm ² /d) (kg)	Survival (%)
1. Harvested	171	134 ^a (2.7)	6.7 ^a (0.40)	1.14 ^a (.06) nd	100 ^a
Spelled	136	118 ^c (4.6)	6.2 ^a (0.47)	1.13 ^a (.07) nd	98 ^a
2. Pregrazed	230	112 ^a (3.2)	nd	nd 2.8 (.06)	100
Spelled	230	99 ^b (2.9)	nd	nd 2.7 (.08)	100
3. Pregrazed	40	32 ^a (2.5)	7.9 ^a (0.18)	nd nd	92 ^a
Spelled	40	23 ^b (2.4)	5.5 ^b (0.18)	nd nd	86 ^a

Values within columns within experiments with differing superscripts differ significantly (a-b, $P \leq 0.05$; a-c, $P \leq 0.01$); nd = not determined; values in parenthesis are \pm s.e.

Liveweight gain of weaners was significantly greater in harvested and pregrazed paddocks, compared to spelled paddocks. The higher liveweight gain in experiment 3 was accompanied by a higher rumen ammonia concentration which suggests the availability of higher quality pastures. Providing soil moisture is adequate, removing the tall dry pasture appears to stimulate regrowth of new pasture of higher quality, which improves weaner growth rate but not wool production.

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