

UTILISATION OF NATIVE PASTURE AND SCOTCH BROOM BY SHEEP AND GOATS

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Scotch broom, an introduced perennial shrub growing to 2 m, currently occupies up to 30,000 ha across south eastern Australia. Cattle avoid broom placing greater grazing pressure on the predominately native pasture that coexists with the broom. Less is known of sheep and goats dietary preferences and so these species were investigated to determine their potential to control broom by browsing.

Female cashmere type goats and Border Leicester x Merino ewes were stocked in a 1: 1 ratio based on total metabolic liveweight (on a per head basis of 1 goat = 0.6 sheep) in 3 replicate paddocks for each animal species. Broom plants were subjectively assessed as covering 4, 7 and 10% of each of the paddocks grazed by sheep and goats. Pasture consisted predominately of *Microlaena stipoides*. Pasture mass was visually assessed each season. Broom measurements and animal weight were recorded over a 2 year period. The data were analysed using the statistical package, REG (Gilmour 1988).

Sheep and goats browsed the flowering broom (stopping seed production in the browsed zone). New shoots and stem were browsed over late spring and early summer to a height of 90 cm and 115 cm for sheep and goats respectively. In late summer and autumn as pasture became more abundant, sheep browsing was substituted with grazing of pasture. Because of preferential browsing by goats, available pasture in paddocks grazed by goats was greater than in sheep paddocks and the broom vegetative shoots were shorter (Table 1). Subjective defoliation scores on broom plants were similar at the start of the trial but after 2 years were significantly greater in paddocks grazed by goats ($P < 0.05$).

Table 1. Change of liveweight (% of initial), pasture availability (kg DM/ha) and length of vegetative broom shoots (cms) in paddocks grazed by sheep and goats (average of 2 summer/autumn browse periods)

	Liveweight change Nov-Mar	Pasture availability Nov-Feb	Shoot length of broom Jan-Feb
Sheep	9.6	1181 ^a	15.6 ^c
Goats	12.2	1396 ^b	4.8 ^d
Different superscripts within a column are significantly different, a v b $P = 0.05$, c v d $P < 0.001$.			

Both sheep and goats increased in liveweight when the pasture mass was estimated around 1000 kg DM/ha, indicating the beneficial role of broom as a browse plant (65.4% digestible dry matter (DDM)) supplementing the low quality pasture (55% DDM). Goats showed greater liveweight gain over the late summer "browse period".

As animals did not suffer any detrimental effects of browsing broom foliage, animal production and control of scotch broom may be achieved by integrating goats with **sheep** or cattle. The extent of control of seeding was inversely related to broom density.

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