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The preference of adult sheep and goats grazing ryegrass and white clover

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Sheep and goats have been shown to select different diets when grazing grass/white clover mixtures, with more clover in the diet of sheep (eg Hughes *et al*, 1984, Proc NZ Soc Anim Prod, 44, 109-112). To measure dietary preference, six groups of three Scottish Halfbred ewes and their twin lambs and six groups of three British Saanen does and their twin kids were tested on twelve 50 x 50 m plots containing adjacent blocks of clover monoculture (*Trifolium repens L.* cv Kent Wild White) and perennial ryegrass monoculture (*Lolium perenne L.* cv Parcour). There was either 20 % clover : 80 % grass by area (50 x 10 m of clover alongside 50 x 40 m grass) or 80 % clover : 20 % grass (50 x 40 m of clover alongside 50 x 10 m grass). Prior to the test the sheep and goats grazed, as separate species, for 12 days on plots containing 50 % clover : 50 % grass by area. Each sward was maintained at 6 cm sward surface height. For the test, groups were released at 10:30 h onto the dividing line between grass and clover. The experiment had a 2 (sheep and goats) x 2 (20 or 80 % clover by area) factorial design with treatments replicated three times and the preference test ran for 72 h. The position of one focal animal per group was observed using time-lapse video recording (on grass or clover) on each plot and the grazing behaviour (grazing, ruminating or idling) was measured using radio-telemetry and an automatic recording system (Penning *et al*, 1984, Grass Forage Sci, 39, 345-351).

Sheep tended to spend a higher % of their grazing time on clover over the three days than did goats (69.5 v 51.8), but this was not significant. For those animals offered 20 % clover by area, sheep in particular had a greater preference for clover than was present. Within each of the three days there was a marked diurnal pattern in preference, which was high for clover in the morning and low in the period prior to sunset. The level of preference for sheep measured here is similar to previous results (Parsons *et al*, 1994, J Anim Ecol, 63, 465-478; Newman *et al*, 1994, Anim Behav, 47, 185-193). Even goats, which in some circumstances have been shown actively to avoid clover (eg Clark *et al*, 1982, Proc NZ Soc Anim Prod, 42, 155-157), spent as much time grazing clover as grass.

% of grazing time on white clover		Day 1	Day 2	Day 3	Days 1-3
Goats	20 % clover	47.3	34.3	47.3	43.4
	80 % clover	55.9	60.7	66.2	60.2
	Mean	51.6	47.5	56.7	
Sheep	20 % clover	65.9	63.8	57.6	62.6
	80 % clover	77.4	72.8	78.4	76.4
	Mean	71.6	68.3	68.0	