MANAGEMENT OF RHODES *GRASS (CHLORIS GAYANA* CV. CALLIDE) DURING AUTUMN

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In sub-tropical dairy systems the quality of pasture on offer to cows is often very low during autumn. At this time pastures have made very rapid growth and have a high stem and low leaf content. The neutral detergent fibre content of leaf is 10% units lower than for stem, but increases from 60 to 65% as the season progresses (Cowan *et al.* 1994). Pastures are managed to allow animals to select leaf, and consequently utilisation is low, in the order of 30% (Cowan *et al.* 1994). This experiment evaluated a system of intensive management, based on the leaf yield of Rhodes grass pasture, in terms of pasture quality, carrying capacity and milk yield.

Callide Rhodes grass (*Chloris gayana* cv. Callide) pasture, established 10 years previously, was divided into 2 replicate areas, each of which was subdivided into 4, 0.9 ha paddocks. These paddocks were allocated at random to the 4 treatments; (i) open grazing of the entire paddock at a lenient stocking rate (0), (ii) grazing on a 2 week rotation using daily strip grazing with a backing fence, and allocating 15 kg green dry leaf/cow.day (2), (iii) as for (2) but with a 4 week rotation (4), and (iv) as for (4) but with a 6 week rotation (6). For treatments 2, 4 and 6 pastures were topped to 10 cm height following each grazing. Stocking rates for treatments 2, 4 and 6 were calculated from the sum of the areas allocated to grazing each day. All pastures received 300 kg/ha of nitrogen fertiliser over the season and were irrigated to avoid moisture stress. Three Holstein-Friesian cows grazed each treatment, alternating weekly between pasture replicates. Cows each received 5 kg concentrate daily. Mulching was used to precondition pastures during November and December and the grazing experiment conducted for 18 weeks from 5 January 1993.

The intense management of grass supported a relatively high stocking rate, with little difference between the rotation lengths (Table 1). The quality of grass leaf was not affected by length of rotation, but crude protein content was reduced in treatment 0. Differences in milk yield/cow reflected the differences in stocking rate, and total milk yield/hectare was very similar for treatments 2, 4 and 6 (Table 1).

Table 1. Mean stocking rate, leaf crude protein (CP) and neutral detergent fibre (NDF) content and milk yield for the pasture treatments

Treatment	Stocking rate (cows/ha)	Pasture leaf		Milk yield	
		CP (% DM)	NDF (% DM)	(kg/cow.day)	(kg/ha.day)
0	1.7^{a}	12.5^{a}	65.3	15.3^{b}	26.0
2	4.3^{b}	15.6^{b}	64.1	13.6^{a}	58.5
4	3.9^{b}	15.2^{b}	63.7	14.6^{ab}	56.9
6	3.8^{b}	15.5^{b}	63.1	15.2^{b}	57.8
l.s.d (5%)	0.5	0.7	2.5	1.3	-

Means in the same column not followed by the same letter are different ($P < 0.05$).

The results suggest that pasture quality and leaf growth rate are not affected by rotation length. With intensive management the stocking rate on these pastures was above levels presently used, and present research is assessing minimum management requirements at these stocking rates.

COWAN, R.T., MOSS, R.J. and KERR, D.V. (1994). *Trop. Grassl., 27:* 150-61.