MILK PRODUCTION FROM TROPICAL GRASSES AS INFLUENCED BY PASTURE MANAGEMENT

T.M. DAVISON*, R.T. COWAN* and G.D. CHOPPING**

It has been suggested that animal production and intake can be improved if tropical swards are made more homogeneous and have a higher leaf-to-stem ratio (Stobbs 1973). An experiment at Kairi Research Station which tested the removal of rank growth of two grasses during summer showed no advantage in milk yield from either slashing pasture, or from variable stocking over continuous grazing (Davison and Cowan 1978). A second experiment was designed to test the effects of slashing pasture in a rotational grazing system.

Twenty-four Friesian cows, lactating from 3 to 12 weeks, were allocated to groups based on calving date and milk production and grouped in a 2 x 3 factorial experiment on January 26 1978. Treatments were two grass species, Gatton panic (Panicum maximum cv Gatton) and Brachiaria (Brachiaria decumbens), and three pasture management strategies: continuous grazing (C), rotational grazing (R) and rotational grazing with slashing after each grazing period (RS). Rotational grazing consisted of two weeks' grazing followed by two weeks' spelling. Nitrogen fertilizer was applied at 71 kg/ha at the end of each grazing period. Pastures were stocked at 6.1 cows/ha. Measurements of pasture yield and botanical and chemical composition of both pasture and diet were used to explain changes in milk yield over the 10 week experiment.

Mean milk yields were 10.6, 9.8 and 9.6 kg/cow/day for C, R and RS (P > 0.05) and 10.1 and 9.9 kg/cow/day for Brachiaria and Gatton panic pastures (P > 0.05). Lactation was less persistent in cows on treatments R and RS than in cows on treatment C (P < 0.01), the mean falls in milk yield per week being 1.3, 1.5 and 0.6 kg for treatments R, RS and C. Pasture yields were lower (P < 0.05) at the start of grazing for RS treatments than for either R or C treatments, while leaf-to-stem ratios were 0.30, 0.38 and 0.59 (P < 0.01) for C, R and RS respectively. The decrease in crude protein per cent of the diet over the two week rotation was much greater for animals on treatments R and RS than for animals on treatment c (P < 0.01). The diet of cows in treatment C maintained a stable leaf per cent (average 45) while the diet of cows on R and RS pastures dropped from 60 and 75% leaf on day 1, to 29 and 40% on day 14.

Strategies R and RS were ineffective in producing higher milk yields per cow than those from pastures where no management other than continuous grazing was employed. As in previous work, improvements in pasture quality through a higher leaf per cent or leaf-to-stem ratio could only be obtained by reducing total pasture yield (Davison and Cowan 1978). For practical purposes, farmers have to base decisions about grazing management on total pasture on offer rather than on any component of total yield.

REFERENCES


* Queensland Department of Primary Industries, Kairi, Qld 4872.
** Queensland Department of Primary Industries, Ayr, Qld 4807.