

SUPPLEMENTATION OF CATTLE GRAZING TAGASASTE

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Cattle production based on the leguminous shrub tagasaste (*Chamaecytisus palmensis*) has the potential to transform the currently unproductive deep sands in the medium rainfall areas of Western Australia. Tagasaste maintains a high proportion of new shoots and new leaf material when grazed continuously by cattle and this "broccoli" form appears to have a better nutritive value than long regrowth (Oldham 1993). The new leaf can contain 25% of dry matter as protein and have a dry matter digestibility of 80% (Borens and Poppi 1990). This quality of feed should support a liveweight gain of around 1.5 kg/day in cattle but these levels of performance have not been achieved. High levels of phenolics have been measured in tagasaste and it is likely that these have anti-nutritional properties as they are active against microbes and may also be toxic to the animal. Annual grass and weed growth in the inter-row provide an additional source of feed during the winter and spring period. The aim of this experiment was to determine whether an energy supplement such as oats increases growth rate of young cattle grazing tagasaste and inter-row species during winter and spring

A plantation of tagasaste (5 m row spacing) established in 1989 was used for the experiment. The 12 ha plantation on deep white sand was split into 2 similar plots. The trees were cut to a height of 0.5 m in mid-March and had 10 cm of regrowth at the start of the experiment on 24 May. Each plot was stocked with 8 steers weighing approximately 260 kg. The plots were grazed continuously until 19 October. One group was fed a weekly supplement of 21kg/hd of oats (11.3 MJ metabolisable energy/kg and 8.9% crude protein (CP)) in a self feeder. The grain was mixed with virginiamycin (20 g/t) to reduce the risk of acidosis. Liveweight was measured every 14 days and pasture on offer (POO) was estimated every 28 days. Metabolisable energy of the pasture remained relatively constant around 9.2 MJ/kg but CP ranged from 3.8- 14.2%.

The animals supplemented with oats normally finished all of the grain on offer within 5 days of feeding. Supplementation of steers with oats made no difference to the growth rate of the animals. The main effect of supplementation was a 47% increase in the availability of POO in the inter-row and the additional edible dry matter available on the tagasaste. The substitution of oats for pasture and tagasaste may provide a useful means of managing stocking rates during this time of the year. It is surprising that growth rates were not higher given the abundant high quality feed on offer and the additional digestible energy provided in the form of oat grain. The reason for the lack of response to the supplement is unclear but it is possible that the cattle selected pasture of higher quality than that measured and which was similar to the quality of the oats. This trial will be repeated over summer-autumn when there is no inter-row feed and tagasaste is the only source of paddock feed on offer.

Table 1. Growth rate (kg/hd.day), fat depth (mm) and final pasture on offer (POO; t/ha) for steers grazing tagasaste only or supplemented with whole oats (3 kg/hd.day)

Treatment	Growth rate	Fat depth (12th rib)	POO (27 Sept 1993)
Control	0.86	4.5	1.61
Supplement	0.90	5.1	2.37
s.e.d.	0.082	0.93	0.269
P-values	> 0.05	> 0.05	0.03

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