COMPARISON OF GRAIN AND MOLASSES AND EFFECT OF COTTONSEED MEAL ON HOLSTEIN - FRIESIAN WEANERS FED LUCERNE HAY

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Growth of weaner calves in the tropics and sub-tropics is limited by the low digestibility of tropical pastures, and concentrate supplements are required to sustain desired growth. Pasture growth and quality are low during winter and lucerne hay is often used during this period. When fed as a supplement to older dairy weaners molasses has produced growth rates similar to those from grain (Moss *et al.* 1982a), but young calves do not appear to utilise molasses as well as grain (Ugarte, 1978)

Twenty four heifer calves weaned at about 70 kg liveweight were reared through winter and spring 1990. Calves were drenched at weaning and randomly allocated to four treatments: 1.5 kg molasses; 1.3 kg Mol + 0.2 kg cottonseed meal (CSM); 1.2 kg grain; 1.0 kg grain + 0.2 kg CSM per calf per day. A basal diet of lucerne hay was fed at c. 2% of liveweight and calves had access to a mineral supplement. Supplements and hay were fed to each treatment group daily. Calves remained in treatments for 12 weeks and were weighed weekly at 8:30 am before feeding. Daily liveweight gains were calculated by linear regression of live weight against time and regression coefficients analysed using analysis of variance.

TABLE 1. Effect of molasses and grain on growth of weaner calves.

Treatment	Wean Age (days)	Wean Wt. (kg)	Final Wt. (kg)	Liveweight Gain (kg/d) 0-4	8-12	0-12
Molasses	84	72.5	128.8	0.68	0.72	0.64
Mol./CSM	79	71.9	130.9	0.76	0.71	0.69
Grain	81	70.9	131.6	0.66	0.79	0.71
Grain/CSM	78	70.3	127.6	0.79	0.71	0.67
S.D.				0.166	0.158	0.099

During the 12 week period from weaning, calves achieved similar liveweight gains in all treatments (Table 1). Liveweight gains of calves supplemented with concentrates and molasses were similar (0.69 vs 0.66 kg/day). In contrast, Ugarte (1978) reported a greater liveweight gain for calves supplemented with concentrates than calves on molasses. Liveweight gains of calves offered supplements containing CSM were not significantly different to those offered an energy supplement only. Liveweight gains in the four week period from weaning tended to be higher for calves receiving the added protein. Moss et *al.* (1982b) showed that liveweight gains of weaner calves grazing tropical pastures were increased by additional protein supplementation. Our observed response to protein could have been lower because of the higher digestibility and protein content of lucerne.

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