

ABSTRACT

The evaluation of *Leucaena leucocephala* as a protein source in a sugarcane/molasses/urea based diet for lactating dairy cows

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The study evaluated dehydrated *Leucaena leucocephala* forage as a protein source in a sugarcane/molasses/urea-based diet for milk production using six first calvers and six second calvers which were fed individually. *Leucaena* provided 100 (treatment A), 50 (treatment B) and 0 (treatment C) percent of the supplemental protein of the treatment diets.

Milk Yield (MY), Dry Matter Intake (DMI) and liveweight change were recorded and Feed Conversion Efficiency (FCE) was calculated. Chemical analyses of the feed and of the milk were done. Mean daily MY for treatments A, B, and C, were 12.8, 13.2 and 12.3 kg during early lactation, during mid and late lactation the mean daily MY were 11.2, 11.2 and 10.8 and 9.90, 8.80 and 10.2 kg. Yields of 4% fat corrected milk for treatments A, B and C were 12.0, 11.4 and 11.4 kg for early lactation; 10.5, 10.3 and 9.80 for mid lactation and 8.85, 8.51 and 9.24 kg for late lactation.

Milk fat values ranged from 32.9 to 37.9 g kg⁻¹ milk. Milk protein values ranged from 29.1 to 33.7 g kg⁻¹ milk.

DMI ranged from 2.77 to 4.35% liveweight. DMIs were 12.6, 15.6 and 10.9 kg in early lactation; 16.3, 14.9 and 16.1 kg in mid lactation and 17.0, 14.7 and 13.8 kg in late lactation for treatments A, B and C, respectively. There was significant ($p < 0.05$) effect due to treatment on DMI during early lactation.

The cows required 1.04, 1.23 and 0.93 kg DMI to produce 1 kg milk in early lactation; 1.47, 1.37 and 1.53 kg DMI kg⁻¹ milk in mid lactation and 1.78, 1.72 and 1.37 kg DMI kg⁻¹ milk in late lactation for treatments A, B and C, respectively. There was a significant ($p < 0.05$) effect due to treatment on the FCE in late lactation.

Leucaena leucocephala was considered to be a good protein source. The performance of the cows on treatment B (50% leucaena) was judged to be the best of the three treatments.