

EVALUATION OF LOW COST SUPPLEMENTARY FEED USED FOR GOATS  
IN DRY INTERMEDIATE ZONE OF THE COCONUT TRIANGLE

By

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## ABSTRACT

Four studies were carried out on goats in Sri Lanka to investigate the existing goat production systems in the dry intermediate zone and to develop a low cost and effective feeding system substituting the expensive concentrates with locally available tree fodder. The first was a survey of 150 farmers to evaluate the existing goat production system in 5 villages of dry intermediate zone of the coconut triangle. The findings revealed that majority of the goat farmers (64.8%) keep large herds (>10 goats) due to the availability of large areas of natural grazing lands and greater involvement of idle family labour. Meat production was their main objective of keeping goats and marketing was mainly through middleman. This study further revealed the existence of a positive relationship of increasing herd size with involvement of housewives, experience in goat farming, use of own bucks for breeding, construction of separate pen for goats with elevated floor and income from goats. Generally, natural grazing is practised often with locally available tree fodder. The major causes of kid mortality are infectious diseases and malnutrition. Natural breeding was a common practice using own bucks. Single kidding and average of 1.5 kiddings per year were common. Getting response of goats to supplementary diets consisting of a mixture of coconut oil meal (COM) and leucaene hay

(LH) at the ratio of 100/00, 75/25, 50/50, 25/75 and 00/100 were studied under field condition. The results suggest that the supplementation of feeds for goats grazing under coconut is advisable since pasture production is seasonal in this area. All the supplementary diets improved feed intake and growth performance. The mixtures consisting of COM and LH at the ratio of 75/25, 50/50 and 25/75 gave higher dry matter intake and weight gain than others. The feeding value of supplementary diets was evaluated by a metabolism and nitrogen balance trial. Dry matter intake (g/head/day) was higher with 75/25 and 50/50 mixtures (593.4) than with coconut oil meal alone. Dry matter, organic matter and crude protein digestibility were higher for COM and LH combination of 75/25 and 50/50. Response of rumen and blood parameters and nitrogen retention similar results were also in the same order.

Dry matter and protein degradation of the supplementary diets in the rumen were studied using nylon bag technique for a period upto 48 hr using ruminally cannulated sheep fed on Guinea grass (*Panicum maximum*-Eco type A). Mean initial dry matter solubility of diets was 34.5%. The supplementary diets 100/00, 75/25 and 50/50 had >80% total degradable dry matter in the rumen resulting above 75% disappearance within 24 hours. The mean protein disappearance of the diets also showed similar but slower

trend to that of dry matter disappearance.

The Benefit/cost analysis of the supplementary diets revealed that all diet combinations to be economically viable (B/C ratio  $> 1$ ), while leucaena hay alone (00/100) resulted the highest B/C value.

The results of feeding experiment suggest that supplementary feeding improves feed intake and growth performance. Based on growth response, feeding value and degradation characteristics of the tested diets T2 and T3 gave superior performance. However, availability and economic factors 100% leucaena hay represents the lowest cost supplementary feed that can be used for goats.

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