

## PRODUCTIVITY OF LOCAL KACANG GOATS IN WEST TIMOR

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### SUMMARY

Five sequential assessments of the productivity of local goats in West Timor were conducted between January and October 1990. Thirty farmers in 3 localities, which represent 3 agricultural farming systems were involved.

Production of the local goats in West Timor in terms of reproductive performance, population change and liveweight differs with the farming systems practised and goat management employed. In general, the local goats were highly fertile and had approximate mature liveweights ranging from 20 to 28 kg. Kid mortality was generally low but variable (2-13%).

**Keywords:** Kacang goats, reproduction, extensive, liveweight.

### INTRODUCTION

An increase in Indonesia's goat population at the rate of 1.6% per year over the past decade (Anon. 1990) has coincided with an increased demand for goat meat from the growing human population. The highest population of goats is concentrated in Java (Djajanegara and Setiadi 1991), while West Timor contributes about 1.2% to the total population of 10 million (Anon. 1988, 1990).

The majority of goats found in West Timor are a local 'Kacang' breed and Ettawah-local crossbreds. They are kept primarily for meat and small flocks of 8 to 10 animals per family are common (Fuah and Pattie 1991). Cattle are important in this region, but the increased demand for meat makes goats an important component of agricultural systems. Categorised as a dry island with a harsh environment, West Timor seems to be most promising for goat husbandry (Devendra 1981; Nygaard and Amir 1988), especially for landless or poor farmers in villages. However, since most farmers raise their goats as a secondary component of the agricultural system, management inputs are low and high levels of kid mortality have been reported (25% by Gatenby 1988; 21% by Fuah and Pattie 1991). The contribution of goats to farm income is relatively low: Rp 29,286 per family per year equal to \$US15.75 (Fuah and Pattie 1991).

The data reported by Fuah and Pattie (1991) were derived from a 3-month survey conducted from October to December 1989 in West Timor. The survey was designed to provide baseline data for a more intensive year-long study to identify and evaluate the systems of goat husbandry in the region. This paper reports the results of the follow-up monitoring.

### MATERIALS AND METHODS

Following the initial survey, detailed observations were continued at 2-month intervals between January and October 1990. The first monitoring commenced during the wet season in February and the last monitoring was conducted during the peak of the dry period in October. Three localities representing different agricultural systems were chosen for the study: Naibonat, characterised by rice fields and mixed garden areas (RGG); Camplong 1 by mixed garden and grazing areas (GG); and Camplong 2 by dry fields, grazing and forest areas (DGF) (Anon. 1988). Thirty cooperating farmers were chosen, 11 from RGG, 9 from GG, 10 from DGF. The approximate age of animals was determined by examining the teeth of older animals, and by recording kidding dates for animals born during the period. Animal weights were measured, and reproductive performance and population change were observed. Due to the difficulty in determining the precise stage of pregnancy, animals which were pregnant or lactating were not included in the liveweight analysis.

### RESULTS AND DISCUSSION

#### *Goat ownership and distribution*

At the first and last monitorings the average numbers of goats kept by the farmers in each region were: RGG, 10 and 10; GG, 13 and 22; DGF, 7 and 9 respectively. These represented increases of 83% and 28% in the GG and DGF systems through the year and stable numbers in RGG. The farming system in the RGG area is normally rainfed agriculture, but lack of rain in 1990 resulted in low crop production. As a consequence, more animals were sold to meet household needs. Other minor problems

contributing to the steady numbers of goats kept by each farmer in the RGG region were theft and road accidents.

### *Reproductive performance*

Table 1 shows the reproductive performance of local goats during the observation period in the 3 farming systems. The ratio between adult males and females in RGG, GG and DGF were 1:4.3; 1:8 and 1:8.2 respectively. These indicate adequate chances for every doe to be mated as bucks and does generally run together all year round. There were important differences between GG and the other areas in the number of kids born per year associated with higher rates of multiple births.

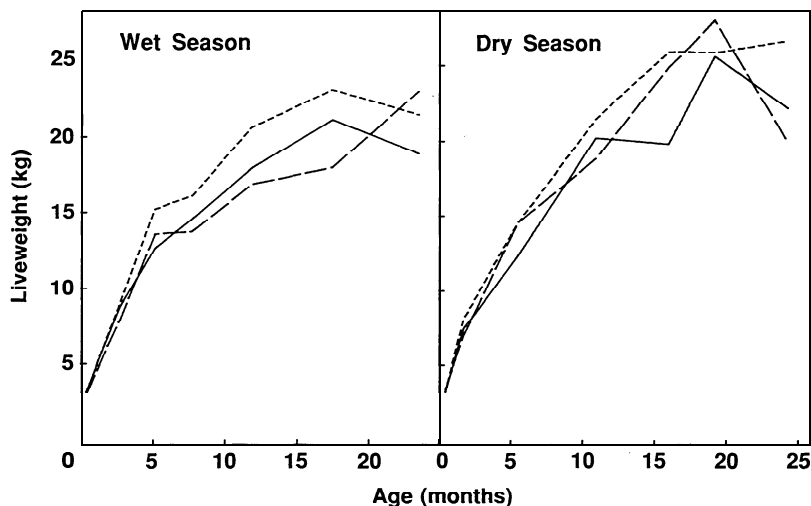
**Table 1. Reproductive performance of local goats in rice fields and mixed garden areas (RGG), mixed garden and grazing areas (GG) and dry fields, grazing and forest areas (DGF) in West Timor from January to October 1990**

Farming system	RGG	GG	DGF
No. of bucks	8	7	5
No. of does	35	56	41
Kidding/doe.year	1.17	1.36	1.46
No. of kids/doe.year	1.41	1.80	1.30
Kid mortality (%)	2.5	4.3	12.2

Kid mortality during the monitoring period was significantly lower than the average 21% reported in the initial survey (Fuah and Pattie 1991) and also lower than Gatenby's survey (1988) in other parts of West Timor (25%). Kid mortality was greatest in the extensive grazing area of DGF. In general, these kid deaths were associated with navel infection, especially in kids born during the wet season. The unusually long dry season followed by only 1 month of the wet season during the monitoring may have contributed to these lower mortalities. Mortality of weaner and adult animals in RGG and GG areas were caused mostly by car accidents.

### *Diseases and health control*

Common diseases experienced in the 3 areas were scabies, helminthiasis and diarrhoea but few animals died of these diseases. Goats were not vaccinated, and home-made medicines were usually used to treat sick animals, particularly by farmers who employed penned and tethering systems. Farmers practicing free grazing left their sick animals without any treatment.



**Fig. 1.** Average weight of local goats in rice fields and mixed garden areas (—), mixed garden and grazing areas (----) and dry fields, grazing and forest areas (— · —) during wet and dry seasons in West Timor.

### Goat liveweight

The liveweights of local goats in the 3 farming systems are presented in Fig. 1. Weights of male and female kids at 2 weeks of age were about 3.9 and 3.2 kg respectively. Mature liveweights ranged from 20 to 23 and 20 to 28 kg in the wet and dry seasons respectively. Mature liveweights in the wet season, which were lighter than those in the dry season, were associated with less available feed in the early wet season caused by a prolonged dry season during the monitoring. During the dry season, animal liveweights in the RGG area tended to be lighter and more variable than those in the other areas, particularly after 12 months of age. Restricted communal grazing areas during harvesting and the lower availability of feed during the dry period may have contributed to these lighter weights. Generally, growth ceased between 12 and 18 months of age.

### CONCLUSION

Local 'Kacang' goats appear to be well-adapted to the harsh environment of West Timor. They are an indigenous meat type with an average mature liveweight ranging from 20 to 28 kg. Goats of the same age tended to be heavier in the dry season than in the wet season.

Reproductive performance and liveweights were also different amongst agricultural systems associated with management systems.

Differences between results obtained in the initial survey and the following monitoring indicate that care is needed when interpreting surveys, due to seasonal changes.

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