

Growth and Survivability of Preweaning Kacang and Kacang Cross Kids

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ABSTRACT: Growth and survivability were observed in preweaning Kacang and Kacang cross kids. Two groups consists of offsprings of Kacang goats and Kacang sired by Etawah grade bucks were used in this study. The does were kept individually and the kids were nursed by the does until its weaned at 3 months old. The data collected were body weight and measurements at birth and then every other two weeks. The results of multivariate analysis of variance with sex as covariate indicated that body weight and measurements at birth were significantly different ($P < 0.05$) between Kacang and Kacang cross kids. Sex had significant influence on birth weight but not on the others. Birth weight of Kacang cross males and females were 14.5% and

9.0% higher than in Kacang. The average rate of growth of body weight per month during preweaning for males Kacang and Kacang cross were 1.51 and 1.55, and the respective values for females were 1.54 and 1.56. The results of multivariate analysis of variance showed that no differences were observed on gain of body weight and body measurements between Kacang and Kacang cross kids. Daily gain for males and females Kacang were on the average of 51.64 g and 49.08 g, while in Kacang cross the respective values were 58.18 g and 57.00 g. Survivability of males and females kids were 87.0% and 85.0% for single born kids and were 60.6% and 50.0% for twin born kids.

Key Words: Goat, Growth, Survivability, Crossing

Introduction

Kacang goats are native breed to Indonesia besides Malaysia and Phillipines. They are raised under the traditional husbandry systems by smallholders, but their contribution to the national meat supply is unquestionable. Two major components of productivity are rate of growth and survival of low mortality from birth to market age. The productivity of Kacang goats are low and effort of genetic improvement has not been practiced. Kacang goat are known as a prolific breed and they produce kids all year around (Devendra, 1983, Subandriyo et al., 1986). On the other hand birth type influences survivability of the kids. The significant influence of birth type on lamb survival was pointed out by Subandriyo (1994). Rate of growth is partly determined by the genetic of the breed. Devendra (1983) reported the improvement of body weight in Kacang goats by crossing with other breeds. Etawah grade goats are another breed of goats raised in Indonesia, they are large breed and has a potential of milk production. Crossing Kacang does with Etawah grade bucks might improved the

rate of growth. The aim of this study was to gain more informations on growth rate and survivability of Kacang and Kacang cross kids during preweaning period.

Materials and Methods

This study was conducted at experimental farm located at Plemburan, Ngaglik, Sleman. Two groups consists of offsprings of Kacang goats and Kacang sired by Etawah grade bucks were used in this study. Data from 79 single births and 9 twin births from the first and second parities were used to study the survivability, and data from single birth of the first parity was used to study the rate of growth during preweaning period. The does were kept individually and the kids were nursed by the does until its weaned at 3 months old. The data collected were body weight, body length, height and heart girth at birth and then every other two weeks. This data were subjected to statistical analysis using multivariate analysis of variance with sex as covariate (Norris, 1986). The geometric means were calculated to obtain the rate of growth of body weight, body

length, height and heart girth per month during preweaning period.

Results and Discussion

The body weight and measurements at birth for Kacang and Kacang cross kids are presented in Table 1.

The results of multivariate analysis of variance with sex as covariate indicated that body weight and measurements at birth were significantly different ($P < 0.05$) between Kacang and Kacang cross kids. Sex had significant influence only on birth weight. Birth weight of Kacang cross males and females were 14.5% and 9.0% higher than in Kacang. The coefficient of variation of body weight at birth was quite high and was 17.5% in Kacang and 20.7% in Kacang cross.

The average rate of growth was obtained as the geometric mean and the rate of growth of body

weight, body length, height, and heart girth are presented in Table 2.

The rate of growth was comparable between Kacang and Kacang cross kids. The results of multivariate analysis of variance with sex as covariate showed that no differences were observed on gain of body weight and measurements. These indicated that the significant influence of crossing on birth weight was not supported by enough milk production of the does for rapid growth.

The average daily gain for males and females Kacang were 51.64 g and 49.08 g while in Kacang cross the respective values were 58.18 g and 57.00 g. The average body weight at weaning for males and females Kacang were 6.53 kg and 5.87 kg, and for Kacang cross were 7.15 kg and 6.98 kg.

Survivability of single and twin born kids of Kacang and Kacang cross kids are presented in Table 3.

Table 1. Body weight and measurements at birth

Parameters	Kacang		Kacang cross	
	Males (36)	Females (28)	Males (20)	Females (13)
Body weight (kg)	1.77	1.59	1.92	1.82
Body length (cm)	22.82	22.79	24.35	25.08
Height (cm)	26.96	25.84	27.98	28.65
Heart girth (cm)	26.69	25.02	28.30	27.77

() number of individuals.

Table 2. Monthly rate of growth of Kacang and Kacang cross kids during preweaning

Parameters	Kacang		Kacang cross	
	Males (6)	Females (8)	Males (12)	Females (6)
Body weight (kg)	1.51	1.54	1.51	1.56
Body length (cm)	1.15	1.18	1.15	1.14
Height (cm)	1.13	1.19	1.15	1.15
Heart girth (cm)	1.14	1.15	1.14	1.15

() number of individuals.

Table 3. Survivability of single and twin born kids (%)

Breed	Single		Twin	
	Males	Females	Males	Females
Kacang	86.7	83.3	57.1	33.3
Kacang cross	87.5	88.9	66.6	60.0

The survivability of singles were much better than twins. Higher survivability were observed on Kacang cross kids suggested that crossing might improved survival through heavier body weight at birth. This results supported Subandriyo's report (1994) with lamb. On the average survivability of males and females kids were 87.0% and 85.0% for single born kids and were 60.6% and 50.0% for twin born kids. These indicated that survivability of males were better than females kids.

Conclusions

Birth type influenced the survivability of the kids due to lack of enough milk for the twin born kids. Survivability of males were better than females because of heavier birth weight of males. The effect of crossing on heavier body weight should be supported by the nursing ability of the does to provide enough milk for rapid growth.

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