

Reproductive performances of Thin-tailed and Garut ewes raised in the same condition

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ABSTRACT: This study was conducted to observe the reproductive performances of Thin-tailed and Garut ewes which were raised in the same condition. Six heads of Thin-tailed ewes and ten heads of Garut ewes were used in this study. The pregnant ewes were raised individually in the slatted house. After lambing, the ewes were kept together with their lambs prior to weaning. After weaning, the ewes were sent to the colonial pen, raised together with the same breed ram for mating. They were raised until their next lambing. Data collected was analyzed using one way analysis of variance. Litter size, birth weight, weaning weight, preweaning morality of Thin-tailed and Garut lambs were 1.5 ± 0.6 and 1.3 ± 0.5 heads, 2.7 ± 0.7 and 1.8 ± 0.8 kg/head, 9.7 ± 3.4 and 7.7 ± 3.7 kg/head, and 8.3 ± 20.4 and $15.0\pm 33.8\%$, respectively. There was no significant difference litter size, birth weight, weaning weight, preweaning morality between Thin-tailed and Garut lambs. Lambing interval, reproduction index and production index of Thin-tailed and Garut ewes were 271.3 ± 55.9 and 228.0 ± 40.4 days, 1.8 ± 0.6 and 1.7 ± 0.9 head/year, and 19.3 ± 12.7 and 16.1 ± 12.4 kg/year, respectively. There was no significant difference lambing interval, reproduction index and production index between Thin-tailed and Garut ewes. It is concluded that reproductive performance of Thin-tailed and Garut ewes which are raised in the same condition are similar.

Keywords: Reproductive performance, Thin-tailed ewe, Garut ewe

INTRODUCTION

Sheep have been a popular animal in Indonesia. In 2014, the population of sheep in Indonesia is 15.72 million heads and the majority of them are in Java and Sumatera islands (BPS, 2015). Breed of sheep raised by farmer is vary depend on the farmers preference and government program. Some of the breeds which are common raised in Indonesia are Thin-tailed and Garut sheep. Thin-tailed sheep are developed in Java and Sumatera islands. Javan Thin-tailed sheep are characterized with thin of tail and black spotted around eyes (Astuti et al., 2007). Furthermore, Astuti et al. (2007) stated that they are small in size but adaptive to the poor condition. Garut sheep, also known as Priangan sheep, are developed in Garut regency, West Java province. They are characterized with rudimental or small earlobe and triangular tail (Kementan, 2011). Garut ram have well developed horn and commonly used for ram fighting.

Because of their attractive appearance and performance, Garut sheep are getting popularity among farmers outside Garut regency, including Yogyakarta Special Province. Several studies have been done to observe the reproductive performance of Thin-tailed and Garut sheep. However, those studies were done in the separated location and there is little information about their performances which were raised in the same condition. This study was conducted to observe the reproductive performances of Thin-tailed and Garut ewes which were raised in the same condition.

MATERIALS AND METHODS

Study was conducted at Laboratory of Meat, Draught and Companion animals, Faculty Animal Science, Universitas Gadjah Mada, Yogyakarta, Indonesia. Six heads of Thin-tailed ewes and ten heads of Garut ewes were used in this study. The pregnant ewes were raised individually in the slatted house. After lambing, the ewes were kept together with their lambs prior to weaning. After weaning, the ewes were sent to the colonial pen, raised together with the same breed ram for mating. All of animals were fed with the same diet which consisted of concentrate and King Grass. Concentrate and King Grass were given ad libitum. They were raised until their next lambing.

Variables observed included litter size, birth weight, weaning weight, preweaning mortality, lambing interval, reproduction index (RI) and production index (PI). Litter size, birth weight, weaning weight and preweaning mortality were observed on the first lambing. RI was calculated as follows:

$$RI \text{ (head/year)} = \frac{365}{\text{Lambing interval (day)}} \times \text{Litter size (head)} \times (1 - \text{mortality (\%)})$$

PI was calculated as follow:

$$PI \text{ (kg/year)} = RI \text{ (head/year)} \times \text{weaning weight (kg/head)}$$

Data collected was analyzed using one way analysis of variance.

RESULTS AND DISCUSSION

Reproductive performance of Thin-tailed and Garut ewes is presented at Table 1. There were no significant difference litter size, birth and weaning weights, preweaning mortality and lambing interval between Thin-tailed and Garut ewes. This might due to the closed genetic relationship between them. Astuti *et al.* (2007) described that Garut sheep was the result of crossbreeding of Thin-tailed sheep and Merino sheep and, later, the crossbred were crossed with South African Fat-tailed sheep. Both Thin-tailed and Garut sheep already adapted to Indonesian climate.

Table 1. Reproductive performance of Thin-tailed and Garut ewes which were raised in the same condition

| Variable | Thin-tailed | Garut | Significance |
|--------------------------------|-------------|------------|--------------|
| Litter size (head) | 1.5±0.6 | 1.3±0.5 | Ns |
| Birth weight (kg/head) | 2.7±0.7 | 1.8±0.8 | Ns |
| Weaning weight (kg/head) | 9.7±3.4 | 7.7±3.7 | Ns |
| Preweaning mortality (%) | 8.3±20.4 | 15.0±33.8 | Ns |
| Lambing interval (day) | 271.3±55.9 | 228.0±40.4 | Ns |
| Reproduction index (head/year) | 1.8±0.6 | 1.7±0.9 | Ns |
| Production index (kg/year) | 19.3±12.7 | 16.1±12.4 | Ns |

Ns: non-significant.

There was no significant difference RI between Thin-tailed and Garut ewes (Table 1). This was due to the similar lambing interval, litter size and preweaning mortality between them. There

was no significant difference PI between Thin-tailed and Garut ewes. This was due to the similar RI and weaning weight between them.

In addition to the closed genetic relationship between Thin-tailed and Garut sheep, standard deviation values of all variables observed were high. This indicated that the genetic variation in every group was high.

CONCLUSIONS

Reproductive performances of Thin-tailed and Garut ewes which are raised in the same condition are similar. Selective breeding is needed to improve the performance of Thin-tailed as well as Garut sheep.

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