

THE OBSERVATION FOR HOUSING SYSTEM, RELATED TO PERFORMANCE PRODUCTION OF FAT-TAILED SHEEP IN SMALL HOLDER FARMERS IN EAST JAVA, INDONESIA

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ABSTRACT

Fat-tailed sheep (FTS) as indigenous sheep in Indonesia, have variously performance. It could be caused by skill management by farmer, including skill for housing and rearing. The research was conducted to know conditions and photograph of housing systems and performance production of FTS and it's hold by smallholder farmers in East Java. The survey with direct observations and periodically interviews throughout 240 respondent. Location (East Java) include 6 regencies, 12 district and 24 villages. For each village had 10 represent by respondent. The data were the characteristic of barns (model/type, stuff, location, endurance and hygienic) and performance production (mating *post-partum*, litter size, body condition scores and lamb mortality). The data were calculated with simple statistic and explained by descriptive methods. Result showed, as generally, those housing systems of FTS were divided in two groups, such as: stage and floor types, it's made from bamboo or woods. Most of these without partition (90,2 - 100 %). From kitchen, stage was located at $4,5 \pm 3,4$ m and floor types had $1,6 \pm 2,8$ m. The roof made from pan tile (20 %), bamboo (30 %) and rumbia (50 %). In the end of observation, showed that mating *post partum* (day), litter size (head), score body condition and lamb mortality (%) from stage and floor types, were respectively: $74,0 \pm 29,8$ and $80,9 \pm 34,8$; $1,7 \pm 0,8$ and $1,4 \pm 0,6$; $2,4 \pm 0,6$ and $2,1 \pm 0,4$; 17,5 and 33,5. FTS who reared in stage types had better performance production.

Key words: Housing systems, Stage/floor barn types, Small holder farmers

INTRODUCTION

The trust in the next Indonesian five years development plan will include the development of agro-industries. Small ruminants play an important role in farmers household economy, as most of the animals are raised by rural poor farmers (Sabrani *et.al.*, 1993). They are generally raised in small flocks and improvements in their productivity could be achieved through the provision of better breeding stock.

Fat-tailed sheep, mostly found in East Java, had been identified as one of local breeds that have the potential to be developed in the dry-areas like in the Eastern Islands of Indonesia.

Fat-tailed sheep as the one of slaughtered animal commodity strategic in East Java, especially, they had significantly contributed to increase income the farmer in

rural. However, trend population development of sheep in East Java had not more fast than commercial or natural chickens (Anonymous, 1993). It's caused by the rearing systems of sheep in rural, hold by complementary and supplementary; and there was implemented on low production efficiency.

The rearing of FTS based on rural, with large variation. It was depending to agroecosystem where the farmer lives, such as low-land, medium until high-land. The skill by farmer that implemented in knowledge, attitude and capability on good criteria, were significantly to increase biological productivity of FTS (Priyanti *et.al.*, 1989; Pamungkas *et.al.*, 1996). The housing aspects as the part of management for smallholder farmers were very important to be attended, because in many regions had a wide variation on shape/model/type, size,

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Table 1. Fat-tailed sheep housing conditions on two types

| Items | Housing types | |
|---------------------------|---------------|-----------|
| | Stage | Floor |
| Farmer | 162 | 78 |
| No partition (%) | 90.2 | 100 |
| Clean (%) | 71.2 | 45.3 |
| Damp (%) | 14.5 | 17.0 |
| Size (m ²) | 8.4 ± 2.7 | 9.4 ± 4.8 |
| Distance from Kitchen (m) | 4.5 ± 3.4 | 1.6 ± 2.8 |
| Roof (%): - pan tile | 16.6 | 23.3 |
| - rumbia/leaf | 52.4 | 50.2 |
| - bamboo/wood | 31.0 | 26.5 |
| Endurance (year) | 6.2 ± 3.5 | 5.0 ± 2.8 |

stuff and hygienic.

Following the statement, this manuscript explained the observation of housing systems and performan production by Fat-tailed Sheep that they were reared by smallholder farmer in East Java as effort to make a good performance by improving managerially skills, especially in housing aspects.

MATERIALS AND METHODS

Procedure and animal

The survey with directs observations and periodically interviews throughout 240 respondent. Location (East Java) include 6 regencies, 12 district and 24 villages. For each village had 10 represent by respondent.

Collected data

The data were the characteristic of barns (model/type, stuff, location, endurance and hygienic) and performance production (mating post-partum, litter size, body condition and lamb mortality). Scoring body conditions according to MLC (1975) citation by Anonymous (1989). The data were calculated with simple statistic and explained by descriptive methods.

RESULTS AND DISCUSSION

From 240 respondent, most of them (67,5 %) using stage types and the others

(32,5 %) using floor types/up the soil. Housing conditions of stage and floor types showed on Table 1.

Data on Table 1 showed that farmer whose had floor types not use partition and only 9,8 % of farmer whose had stage types using partition in their FTS barns. There was unfortunate, because the partition was very important to separate for each sheep according to their physiological conditions, especially for ewes in pregnant or lactation statues. Martawijaya and Mathius (1995) explained those in communal barns (without partition), animal with different physiological statue would be competitive to live, with their instinct; a big and strong animal would be depressing a little animal.

Most respondent explain that their roof made from rumbia, because it was cheap and easy to get it from around inside their villages. But rumbia had not long life, about 1,2 year only. The roof that made from pan tile needs bamboo/wood construction, it was expensive for small-holder farmer, but it has long endurance, for about 3 up to 5 years. Principally housing for animal in order to eliminate environment factors (Devendra and Mc.Leroy, 1982). Farmer decides to use stuff of barn depending their finance and a viability of stuff.

On stage types, seemed more clean and dry, beside it's allied out of farmer's house, as generally. But in floor type, there's not hygienic, showed on Table 1 that distance a barn from kitchen at 1,6 ± 2,8 m. Martawijaya (1989) suggested that a barn

Table 2. Performance production by FTS on stage and floor types

| Items | Housing types | |
|---------------------------------|---------------|-------|
| | Stage | Floor |
| Mating <i>post partum</i> (day) | 74.0 | 80.9 |
| Litter size (head) | 1.7 | 1.4 |
| Body condition | 2.4 | 2.1 |
| Lamb mortality (%) | 17.5 | 33.5 |

with stage types was representative or good carried to prevent the disease/parasitic infection and easy to carried out feces and urine. In the end of observation, performance production by FTS, showed on Table 2.

Mating *post partum* was a condition where reproductive efficiency performance that in the first time being appeared, reflection. Showed that estrous reappearance after ewe had been partus and than with attention by farmer, the ewes that has estrous again, should be mated his ewes with a dam with expecting to get a lamb, as soon as. On Table 2, showed that mating *post partum* by ewes on stage types (74 day) seemed so short to floor types (80,9 day). This evidence explained that knowledge or skill by farmer was different. If the mating was late, its affected to lambing interval too long (Anonymous, 1992) and it was not efficient.

The litter size had been affected by genetic and feed factor. On stage types, litters size was tend higher those floor types. It may be caused that in the stage had been easy to care feed and the feeding management was better, therefore feed intake of ewe was better too. The ewes that live in stage types had higher scored body condition (2,4). It means the linear body of ewes was bigger and the live weight was heavier. Minimum live weight of ewes that had a good criteria, was 20 kg, implication (Anonymous, 1993). It's similar with score 2,0. A good criterion can sustain healthy reproduction.

Lamb mortality of FTS measured before the ewes weaning their lambs, for about 90 days. Lamb mortality that reared on Stage type was lower than Floor type. This condition indicated that in the floor type was dirty. In fact, only 45 % the floor type was clean. A hygienic barn can prevent the disease appearance. Besides that, a little

animal would be dead if the suckling management was poor (Affandhy *et al.*, 1994) or their ewes had low mothering ability.

CONCLUSION

Fat-tailed Sheep who reared in stage types had better performance production and it's indicated by lamb mortality was lower and score body conditions was higher.

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REFERENCES

- Affandhy.L., M.A Yusran, Mariyono and D. Pamungkas. 1994. The Suckling management and its influence on th performance of dairy cows and their calves on smallholder farmers in East Java, Indonesia. *Proc. of the 7th AAAP Animal Science Congress*. Bali, Indonesia, July 11-16, 1994. 93-94.
- Anonymous, 1989. *Sheep Production and Management in A Mediterranean Climate: The Agropostoral system of Morocco*. Small Ruminant Collaborative Research Support Program, Univ. of California, Davis, CA. 95616.
- Anonymous, 1992. *Penelitian Penembangan Teknologi Peternakan Di Daerah*

- Padat Penduduk (Jawa)*. Kerjasama P4N-Puslitbangnak. Bogor. Pp.:33-34.
- Anonimus, 1993. Penelitian Pengembangan Pemuliaan Domba Prolifik di Pedesaan. *Poyek Pembangunan Penelitian Pertanian Nasional. Laporan 1992/1993*. Puslitbangnak. Bogor.
- Devendra, C. and G.B. Mc.Leroy, 1982. *Goat and Sheep in The Tropics*. Intermediate Tropical Agriculture Series. Longman. London and New York. Pp.:97.
- Martawijaya, M. 1989. Tatalaksana Pemeliharaan Ternak Kambing/Domba di Indonesia dalam: *Kumpulan Peragaan dalam Rangka Penelitian Ternak Kambing dan Domba di Pedesaan*. Balitnak-SRCRSP. Puslitbangnak. Bogor. Pp.:91-113.
- Martawijaya, M. and I.W. Mathius. 1995. Tatalaksana pemeliharaan dan pengandangan domba tipe aduan di kabupaten Garut, Jawa Barat. *Pros. Sem. Nas. Sains dan Teknologi Peternakan*. Balitnak Ciawi.
- Pamungkas, D. L. Affandhy, D.B. Wijono dan Komarudin-Ma'sum. 1996. Karakteristik Usaha pemeliharaan domba ekor gemuk di daerah sentra bibit pedesaan di Jawa Timur. *Pros. Temu Ilmiah Hasil-Hasil Penelitian Peternakan*. Balitnak. Ciawi. Pp.:241-247.
- Priyanti, A., T.D. Sodejana, S.W. Handayani dan P.J. Ludgate. 1989. Karakteristik peternak berpenampilan tatalaksana tinggi dan rendah dalam usaha ternak domba/kambing di Kabupaten Bogor Jawa Barat. *Pros. Pertemuan Ilmiah Ruminansia. Puslitbangnak. Bogor*. Pp.:7-13.
- Sabrani, M., A. Djajanegara and I.K. Utama. 1993. *Report on Genetic Improvement of The Javanese Fat Tailed Sheep*. Balitnak-FAO. Pp.:1.