Study of Goat Herdering System in Sawohan Village, Buduran District, Sidoarjo

M. Nasich[1*], Suyadi, G. Ciptadi[1] dan A. Budiarto[1]

[1]Faculty of Animal Husbandry, Brawijaya University, Malang, East Java, Indonesia

*Corresponding E-mail: nasich@ub.ac.id; m.nasich@yahoo.com

Abstract

The aim of this research was to evaluate and analyze goat herdering system in group of goat "Oro-oro" in Sawohan Village, Buduran District, Sidoarjo. This research was conducted by case study method, using 5 members of goat farmers "Oro-oro" with 298 goats. The results of this study indicate that the average number of goat ownership was more than 50 head/farmer. The goat breed that raising by the farmers was Kacang goats. Average daily gains was 53.32 + 36.01 gram, litter size 1.34 + 0.51 head, mean of kidding interval 7,41 + 0,99 month and mortality of kid prenatal period was 20,4%. From this research can be concluded that productivity of goat in Sawohan village was good with herdering system, so it can be used as one of alternative in developing goat farming system in other area.

1. Introduction

Goat is a popular livestock for small farmers, because it is easy to maintain, small capital required and can be used as a savings [1]. The population of goat in East Java is the second largets after Central Java (3.178.197 head in 2015). There was increasing population in 2014 by 1.5% [2]. Of the total population, it is based on smallholder farming system.

Kacang goats are one of the native Indonesian goat breeds. According to [3], it has several advantages, for example produced of meat and skin, it is prolific or high litter size and has the ability to adapt on poor feed conditions.

The "Oro-oro" goat breeding group is one of a farmers group which speciality in goats farming system, including improving feeding management. The goat are grazed on the edge of the pond more than 1700 tails. Patterns of maintenance like this does not require a lot of cost for the purchase of feed, or it can be said to be zero. Every day the breeders only need to open the door of the cage and close it in the afternoon.

Looking at this kind of fact, it is very interesting to observe on how to maintenancemanagement and productivity.This study aims to examine and evaluate goat farming business from "Oro-oro" farming group in Sawohan Village, Buduran District, Sidoarjo Regency. The results of this study are expected to be used as information in the development of goats in other areas

2. Materials and Methods

The research was conducted in Sawohan Village, Buduran District, Sidoarjo Regency from early December 2016 until the end of January 2017. The material used in this study was 146 does and 196 kids, possession to 5 farmers

Case Study method was used in this research. The variables observed were litter size, mortalityat pre-weaning period, kidding interval and body weight gain at pre-weaning period. The data obtained were analyzed descriptively based on the formula [4]:

$\chi = \frac{\Sigma Xi}{n}$ $S = \sqrt{\frac{\Sigma(Xi-X)2}{n-1}}$

Description: S = Standard Deviation
ΣXi = Total data

Daily Weight Gain (PBBH) is calculated using the formula[5] as follows:

$$PBBH = \frac{W2 \quad W1}{T2 \quad T1}$$

Description: PBBH = Daily Weight Gain
W2 = End body weight
W1 = Initial body weight
T2 = end time weighing
T1 = Start time weighing

Chi-square analysis (X2) as directed [6], was used to evaluate the incidence of male and female births.

3. Results and Discussion

From the results of this study, the "Oro-oro" located in Sawohan Village, Buduran District, Sidoarjo Regency, East Java. Sawohan Village data. The location had altitude 4 m above sea level (dpl), with average annual rainfall of 2000 mm and average temperature and humidity were 30^0C and 79%. This village located in the southern city of Sidoarjo, 15 km away from the city center. In particular the "Oro-oro" goat breeding group is located in aquaculture area, where the goats are kept released and feeding on the edge of the pond.The Kacang goat profile kept by goat group "Oro-oro" can be seen in Figure 1.

Figure1.Kacang goat performance belongs to one member of the goat group "Oro-oro"

From Figure 1, It's can be seen that the Kacang goat in Sawohan village are some semilar from the Kacang goat which is conveyed by Devendra and Burn. In Sawohan the ear rather drop (not erect).The average body weight of adults (PI1 and PI2) are 22.14 ± 4.51 kg for female and 26.00 ± 3.24 kg for males, the average litter size was lower at 1.34 ± 0 , 51 heads[8]

The average number and structure of population and number of goats per group member can be seen in Table 1.

Table 1. Population structure and number of livestock ownership of 5 breeders of "Oro-oro" breeders group

Farmer	Pre-weaning Kids		Post-weaning		Adult		Total (heads)
	Male	Female	Male	Female	Male	Female	
Amang	1	4	27	7	3	5	47
An'am	11	17	7	8	5	21	69
Majid	13	22	14	17	3	27	96
Mat Jaini	7	8	5	2	2	10	34
Kurniawan	5	10	8	11	4	14	52
Total	37	61	61	45	17	77	298
Average							59.6

From Table 1shows that the average number of livestock ownership of each group member is above 50 head/goats. The average amount of ownership is considered very high when compared with the results of research by [9]. It stated that the amount of goat ownership between 3-16 heads/goat with an average of 9.2 head/goat. The ownership of goats in Sawohan, because the farmers do not need to find the feed This way of maintenance is certainly very easy for farmers and does not require a long time to find the feed resources.

The average daily weight gain of Goat Breeders of the pre-weaning period from the results of this study is presented in Table 2.

Table 2. Average daily body weight gain of the male and female kids at pre-weaning period

Sex	N (heads)	PBBH (g/head/day)
Male	54	64.87 ± 40.93
Female	31	41.77 ±29.10
Average	85	53.32 ± 36.01

From Table 2 above, it is seen that the average of daily body weight gain was 53.32 + 36.01 g/head/goat.This average PBBH was lower when it is compared with the results of the research from [10].Itwas equal to 63,1 g /head. It was caused by the additional of feed concentrate, in addition to forage. This is in accordance with the opinion of [11].It states that the factors influencing the increase of livestock body weight are the parent age, breeding season, the type of birth and the availability or adequacy of feed. The average of PBBH results of this study was still higher, when compared with the results of research by [12] which is only 26.28 g / head.

While daily body weights gain of males wee higher than females. This seems to be due to differences in birth weight and the resulting of hormonal. This situation is similar to the previous research results of [12] and [13], which showed that post-weaned goats' PBBH showed that males were higher than females.

4. Conclusion

From the results of this study, it can be concluded:

1. Shepherding system can increase the ability of breeder to keep goat to more than 50 goats/farmers.
2. Kacang goats was the goat breed that was raised in the breeding group of "Oro-oro".
3. The average daily gain is also quite good that is 53.32 $\pm$ 36.01 g/head/day

Acknowledgments

Goat breeding systems such as Sawohan Village can be used as a goat breeding model.

References

[1] Setiawan T dan A Tanisius 2003 Beternak Kambing Perah Peranakan Etawah Edisi 1 Penebar Swadaya, Jakarta

[2] Anonimous 2016 Capra hircus Domestic Goat. http://animaldiversity.org. Diakses 15 Nopember 2016

[3] Batubara A, RR Noor, A Farajallah, B Tiesnamurti dan M Doloksaribu 2011 Morphometric and Phylogenic Analysis of Six Population Indonesia Local Goats. Media Peternakan **34** (3) : 165.

[4] Gulo,W. 2000. Metodologi Penelitian. Grasindo. Jakarta.

[5] Edey TN 1983 Tropical Sheep and Goat Production. Australia University International, Development Program. Camberra.

[6] Hadi, S. 1995. Metodologi Research: untuk penulisan paper, Skripsi, Thesis dan Disertasi. Universitas Gajah Mada. Yogyakarta.

[7] Devendra C. and M. Burn. 1994. Produksi Kambing Di Daerah Tropis.Terjemahan IDK Haryaputra. Penerbit ITB Bandung.

[8] Dzikri, M.H. 2017. Performan Reproduksi Induk Kambing Kacang di Desa Sawohan, Kecamatan Buduran, Sidoarjo. Skripsi Fakultas Peternakan, Universitas Brawijaya, Malang.

[9] Makatita, J. 2013. Hubungan antara Karakteristik Peternak dengan Skala Usaha Peternakan Kambing di Kecamatan Leihitu, Kabupaten Maluku Tengah.Agrinimal, **3** (2): 78-83.

[10] Martawidjaja, M., B. Setiadi dan S.S. Sitorus. 1999. Pengaruh Tingkat Protein Energi Ransum terhadap Kinerja Produksi Kambing Kacang Muda. Jurnal Ilmu Ternak dan Veteriner. **4** (3): 167-173.

[11] Setiadi, B. 1996. Pertumbuhan, Perkembangan dan Komposisi Karkas Kambing. Balai Penelitian Ternak. Wartazoa, **5** (1): 12.

[12] Mahmilia, F., F.A. Pamungkas dan M. Doloksaribu. 2007. Laju Pertumbuhan Pra-sapih dan Sapih kambing Boer, Kacang dan Boerka-1.Seminar Nasional Teknologi Peternakan dan Veteriner. Loka Penelitian Kambing Potong.

[13] Adriani, 2014. Bobot Lahir dan Pertumbuhan Anak Kambing Peranakan Etawah sampai lepas sapih, berdasarkan litter size dan jenis kelamin. Jurnal Penelitian Universitas Jambi Seri Sains, **16** (2): 51.