

Qualitative characteristics of Saburai goats at weaning in Tanggamus District Lampung Province Indonesia

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Abstract. This research aim to know qualitative characteristics of Saburai goats during weaning in Tanggamus Regency. This research was conducted in February--March 2019 at the location of Saburai Goat development in Tanggamus Regency, Lampung Province. This research used a survey method. Observation of the qualitative characteristics of male and female Saburai goats when weaning 3--4 months old by observing the head color, body color, color of the feet, color of the tail, ear color, shape of the body, shape of the ear, eye shape, face shape, face profile, birth and weaning weights. The saburai goat used was 31 male and 32 female. The results of this study showed that the qualitative characteristics Saburai goats in Gisting Subdistrict and Sumberejo Subdistrict are more closer to the characteristics of Boer goats. The weaning weight of Saburai goats in Gisting subdistrict is higher than Sumberejo subdistrict.

1. Introduction

Indonesia is a developing country that has abundant natural resources. The agricultural sector has an important role in Indonesia's national development, agriculture in the broad sense consists of five sub-sectors, namely food crops, plantations, livestock, fisheries, and forestry.

The livestock sector is one of the pillars in agribusiness development in Indonesia which still has the potential to continue to be developed. One of the commodities in the livestock sector that has great potential to be developed is the goat commodity. Goats are livestock that are quite attractive because they have high economic value.

The population of goats in Indonesia in 2016 was 19,608,181 head, 57.12% were in Java and the other spread outside Java, including in Lampung Province. Lampung Province is also the province with the highest goat population compared to other regions outside Java. The population reaches 1,297,872 [1].

One of the goat families currently being developed in Lampung Province is the Saburai goat. Saburai goat is a goat from *grading up* between male Boer goats and female Etawa (PE) goats which are designated as local genetic resources of Lampung Province based on the Decree of the Minister of Agriculture of the Republic of Indonesia Number 359 / Kpts / PK.040 / 6/2015 [2].

Saburai Goat has been established as one of Indonesia's germplasm that must be maintained, improved and developed so that its population can provide many benefits for farmers and also in an effort to meet the needs of meat, both at the local and national levels. Saburai goats have advantages such as easy maintenance, high adaptability to various environmental conditions and high growth rates.

The Saburai goat developed in the source area of the seed is the goat from the selection process. Selection is an action to choose a goat with superior genetic quality on economic performance. One that can be observed is the qualitative nature of the Saburai goat itself. The qualitative properties of saburaigoats that can be observed are head color, body color, color of the foot, tail color, ear color, face shape, head shape, body shape, ear shape, shape eyes and face profile. Qualitative performance needs to be continuously observed to obtain certainty in the quality standards of Saburai goat.

2. Materials And Methods

2.1 Materials

The research material consisted of 32 female goat kids 3 - 4 months, and 31 male goat kids 3 - 4 months. While the tools needed in the study are a camera unit to document the observed templates, questionnaires, stationery and scales.

2.2 Method

The method used in this research is survey method. Observation of the qualitative characteristics of male and female Saburai goats at weaning (3 - 4 months).

3. Results And Discussion

3.1 Male and Female Goat Saburai Color Patterns

Based on grouping of head color patterns on male and female Saburai goats when weaning were found at the study site with a color pattern of six color distribution patterns namely brown combination white, white, brown, black, black combination white, white and black chocolate combination.

The results showed that the color patterns of Saburai goat's head when male and female weaning varied from single to three color patterns. Most of the male Saburai goats observed had a combination of white brown color pattern (41.94%), 25.81% brown, 16.13% white, 9.68% black, 3.23% black white combination and 3.23% white and brown and black combination. Most female Saburai goats have a combination of white brown head color (50%), white color (18.75%), brown color (12.5%), 9.38% white combination black and 9.38% white brown combination and black (Table 1).

The most dominant color in Saburai goats is white, the dominant color pattern is the base color which has the largest area in individual goats while the combination color is the color that has a smaller area than the dominant color. The dominant color usually consists of only one color and the color of the combination can consist of one or more colors. The color combination in goats between dominant colors and combination colors is quite diverse, can only be in the form of their own dominant colors or collaborate with combination colors.

The results showed that the color patterns of male and female Saburai goats when weaning varied from single to two color patterns. Most of the male Saburai goats observed had a white body color pattern (70.97%), 9.68% brown, 6.45% black, 6.45% white combination chocolate, 3.23% brown combination white, 3.23% black and white combination and 3.23% white and brown and black combination. The majority of female Saburai goats have white body color (71.88%), white brown combination (18.75%), brown color (6.25%), and 3.13% white combination black color (Table 1). most Saburai goats whose bodies are white inherited from both of their parents, namely male Boer goats have a white body color in accordance with [3] which states that the characteristics of Boer goats are white fur, colored feathers on the neck dark. Apart from the male elders, white body color is obtained from the body color of the female elders, namely PE, namely that white is the common color of domesticating PE goats [4].

The results showed that the color patterns of the Saburai goat's feet when male and female weaning varied from single and two-color patterns. Most of the male Saburai goats observed had a white foot color pattern (61.29%), 16.13% had a combination of white chocolate, 12.90% were black, 6.45% were brown and 3.23% were brown combinations black. Whereas for female Saburai goats have white leg color (71.88%), white combination of chocolate (18.75%), and brown color (6.25%), 3.13% white combination black color (Table 1).

Table 1. Color pattern of male and female goats Saburai

Characteristics	Males		Females	
	n	%	n	%
Colorhead				
White	5	16.13	6	18.75
Chocolate	8	25.81	4	12.5
Black	3	9.68	0	0
Chocolate striped white	13	41.94	16	50
Striped Black White	1	3.23	3	9.38
striped brown and black white	1	3.23	0	0
Chocolate striped white and black	0	0	3	9.38
body color				
White	22	70.97	23	71.88
Chocolate	3	9.68	2	6.25
Black	2	6.45	0	0
striped white brown	2	6.45	6	18.75
white striped brown	1	3.23	0	0
Striped white Black	1	3.23	1	3.13
leg color				
White	19	61.29	23	71.88
Chocolate	2	6.45	2	6.25
Black	4	12.9	0	0
brown striped white	5	16.13	6	18.75
White striped black	0	0	1	3.13
brown striped black	1	3.23	0	0
colortail				
White	23	74.19	27	84.38
Chocolate	4	12.9	4	12.5
Black	4	12.9	1	3.13
color ear				
White	10	32.26	5	15.63
Chocolate	12	38.71	19	59.38
Black	4	12.9	1	3.13
brown and white striped	5	16.13	5	15.63
black and white striped	0	0	2	6.25

The tail is the backmost part of the animal's body, both in the form of a connection of the spine and as a stick. The tail color pattern found in two different locations in Tanggamus Regency, there are three color patterns and the dominant one is the white pattern followed by brown and the last is black. Based on the observations of the color of male Saburai goats have a percentage value of white (74.19%), brown color (12.90%) and black (12.90%). Whereas the color pattern of Saburai female goats has a percentage value (84.38%) for white, (12.5%) for brown and (3.13%) for black (Table 1). The pattern color on the Saburai goat's ear adjusts to the color of his head, but does not rule out the color pattern of the Saburai goat's ear having a color combination or a double color pattern. the color which is the influence of the carrier genes of the color phenotype of the two elders, namely Boer and PE goats, both form a single color or a mixture of two colors. As according to [5] that color patterns are determined by different genes, but in collaboration with basic color genes, so do color genes in a color pattern.

The results showed that the color patterns of Saburai goat ears during male and female weaning varied from single to two color patterns. Most of the male Saburai goats (38.71%) observed had a brown head color pattern, white (32.26%), white combination brown color (16.13%), black color

(12.90%). The majority of female Saburai goats have brown ear color (59.38%), white (15.63%), white combination brown (15.63%), white combination black (6.25%) and 3.13 % black (Table 1).

Table 2. The qualitative characterization of Saburai goats kids

Characteristics	males		females	
	n	%	n	%
body style				
Flat	4	12.9	9	28.13
Medium	9	29.03	10	31.25
Round	18	58.06	13	40.63
Profile face				
Convex	2	6.45	5	15.63
Flat	29	93.55	27	84.38
Eye Shape				
Round	31	100	32	100
Sipit	0	0	0	0
ear shape				
Medium, wide, open and drooping	28	90,32	26	81,25
long, wide, open and drooping	3	9,68	6	18,75

The qualitative for Saburai goat during weaning in Tanggamus Regency are shown in Table 2. Saburai goat body shape when weaning observed were flat, medium and round. The results of 12.90% (4 tails) of male Saburai goats had a flat body shape, 29.03% (9 tails) medium body shape, 58.06% (18 tails) round body shape. Results of 28.13% (9 tails) of female saburai goats had a flat body shape, 31.25% (10 tails) of moderate body shape, 40.63% (13 tails) of round body shape.

The male and female Saburai goat profile in Tanggamus Regency is dominated by a flat face profile both male and female, 93.55% of male Saburai goats have a percentage of flat face profiles and 6.45% have a convex profile. 84.38% of Saburai female goats have a flat face profile and 15.63% have a convex face profile.

Based on the results of observations conducted in the Tanggamus District, Saburai with a flat face profile more than mucous face profile. This is in accordance with the statement from the Disnakkeswan Lampung Province (2015) that the Saburai goat's face profile is flat and thick, the upper and lower jaws are balanced. This is presumably because the Saburai goat has a blood composition that is closer to Boer goats (75%) which have flat face profile characteristics.

The shape of the Saburai goat's eye in Tanggamus Regency has one type, namely with a round eye shape of 100% male Saburai (31 tails) and 100% female Saburai (32 tails) having round eyes (Table 2). The round eyes showed that the goat was healthy, the buyer goats enthusiasts especially the Saburai goat chose one of them with the shape of the eye. Round and shining eye shape is a form of eye that many farmers choose. This is in line with [6] statement that some parameters that need to be considered in selecting male and female goat seeds one of them has bright and shining eyes.

Male and female Saburai goats raised in the Livestock Group of Tanggamus Regency have two types of ears, namely the shape of the ear is medium, wide, open and drooping and the shape of the ear is long, wide, open and drooping. Most of Saburai's male and female goats have ears that are medium, wide, open, and drooping. The Saburai goat has a long ear shape but is shorter than the PE goat which is the female parent.

The results of observations carried out in Tanggamus Regency showed that 90.32% (28 tails) of male Saburai goats had medium, wide, open and drooping ears. 9.68% (3 tails) have long, wide, open, and drooping ears. A total of 81.25% (26 tails) of female Saburai goats have a medium ear shape, wide, open, and drooping. 18.75% (6 tails) have long, wide, open and drooping ears.

3.2 Average Weaning Weight of Saburai Goat

Average weight of weaning of male and female Saburai goats in Gisting Subdistrict respectively 19.18±3.82 kg and 16.79±3.04 kg higher than average weights weaning in Sumberejo District 16.00±2.32 kg and 14.78±3.72 respectively. This is partly due to the higher average birth weight of Saburai goats in Gisting Subdistrict. Goats with a high birth weight have a high weaning weight because there is a high genetic correlation between birth weight and weaning weight. Genetic correlation of birth weight with weaning weight of Saburai goats in Tanggamus Regency estimated by regression method of parents to kids in Gisting District 0.40 and in Sumberejo District, Tanggamus District 0.37 [7], genetic correlation estimated by the method of sibling relations stepfather on Saburai goats in Tanggamus Regency 0.15 ± 0.07 [8], Boerawa goats (male Boer><PE female) in GistingSubdistrict, Tanggamus Regency which is estimated with a nested pattern of 0.57 ± 0.13 and which estimated by half-sibling relationship 0.50 ± 0.04 [9].

Table 3. Average birth and weaning weight of Saburai goats

District of	Birth		Weaning	
	Males	Females	Males	Females
Gisting	3,3±0,40	3,2 ±0,61	19,18±3,82	16,79±3,04
Sumberejo	3.3±0.42	3, 1±0.46	16.00±2.32	14.78±3.72

4. Conclusions

Based on the results of the study, it can be concluded that the qualitative characteristics of Saburai goats in Gisting and Sumberejo Districts are closer to the Boer goats. The weaning weight of Saburai goats in Gisting sub-district is higher than the weight of Saburai goat weeds in Sumberejo District.

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