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Research Article

Qualitative and Quantitative Characteristics of Local Goats in Banggai Laut Regency

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Keywords:

Banggai Island;
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Abstract: The purpose of this study was to determine the existence of local goat characteristics in Banggai Laut Regency. Research was conducted in June 2025 on Banggai Island, Banggai Laut Regency, Central Sulawesi Province. The research subjects were local goats, male and female, aged 1-2 years, from Banggai Island. Observation and interviews were used to determine the quantitative and qualitative characteristics of local goats. The variables studied included animal age, sex, body weight, and body measurements, including shoulder height, hip height, hip width, body length, chest width, chest depth, chest circumference, ear length, and ear width. The result show The qualitative characteristics of Kacang goats in Banggai Tengah District, Banggai Laut Regency, partly show the characteristics of a dominant brown coat color, a combination of color patterns often appears compared to a single color, one of which is black and white, ears are predominantly half hanging, have horns, a flat face line, a concave back line, and the majority are beardless. The average body weight of male goats is 20.83 ± 10.68 kg, shoulder height 53.48 ± 9.90 cm, hip height 54.75 ± 9.95 cm, body length 50.23 ± 7.62 cm, chest width 14.95 ± 3.28 cm, chest depth 25.64 ± 4.99 cm, chest circumference 64.57 ± 12.13 cm, hip width 16.07 ± 3.32 cm, ear length 14.41 ± 2.30 cm, and ear width 6.70 ± 0.91 cm. The average body weight of female goats is 19.23 ± 5.18 cm, shoulder height 50.82 ± 3.99 cm, hip height 52.31 ± 4.42 cm, body length 50.94 ± 4.88 cm, chest width 14.78 ± 1.92 cm, chest depth 24.45 ± 2.23 cm, chest circumference 63.43 ± 6.65 cm, hip width 16.42 ± 1.66 cm, ear length 13.52 ± 1.76 cm, and ear width 6.27 ± 0.71 cm. The body and morphometric size of Kacang goats in Banggai Laut vary, with males generally having larger body sizes than females, not significantly different from Kacang goat populations from various other regions in Indonesia.

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INTRODUCTION

There are four sub-districts in Banggai Laut Regency, located between 1° 06'' 30'' - 1° 35' 58'' South Latitude, and 122° 37' 6.3'' - 123° 40' 1.9'' East Longitude on Sulawesi Island, which have the potential for goat farming (BPS Banggai Kepulauan Regency, 2024). The stable and expansive tropical climate allows for the availability of extensive grasslands that support the breeding of goats with a wide variety of traits. The diversity of livestock traits reflects the quantitative characteristics of a livestock (Dako, 2024; Ilham, 2025), which are caused by the genetic diversity of livestock (Dako, 2023) and their population (Ciptadi, 2020). Local goats possess unique characteristics adapted to their environment after developing for several generations and inhabiting a region (Muttaqin, 2017), and are highly adaptable (Sraun, 2012). Furthermore, local goats, as meat producers, are used to meet the community's nutritional needs, particularly during Eid al-Adha, weddings, and aqiqah ceremonies, both in traditional and semi-modern preparations (Ilham et al., 2019). Therefore, they remain popular because they can be raised by both novice and skilled breeders.

The potential for local goats on Banggai Island, Banggai Laut Regency, is estimated at 1,561 (Banggai Laut Regency Agriculture and Food Service, 2023). The existence of goats in the region remains largely unknown, with regard to their availability, production capabilities, and reproductive techniques. This information is crucial for conservation efforts and future genetic improvement of livestock. According to Wibowo (2015), the characteristics of Kacang goats include a relatively small body size and small, erect ears. Their coat color varies between white, black, brown, or a combination of all three colors (Naldi, 2017). Their horns are curved, sword-like, pointing upward and backward, with a length of approximately 8-10 cm in both sexes. Adult Kacang goats weigh between 17-30 kg (Naldi, 2017). Females generally have short hair all over their bodies, except for the tail. Males have short hair all over their bodies, except for the tail, and have a beard. Their necks are short and their backs curve slightly higher than their shoulders (Wibowo, 2015).

Information on qualitative and quantitative characteristics is necessary to determine the quality of livestock, which will later be used as considerations in selection, crossbreeding, and determining breeding stock. According to Ilham et al. (2019), the quantitative characteristics observed are body weight, head length, head width, head height, ear length, ear width, body length, chest width, and height. shoulder, chest circumference, chest depth and qualitative characteristics are color and fur color pattern, horn shape, ear shape and facial lines. Qualitative characteristics are characteristics that can be observed or described directly, and individuals can be classified into one, two or more groups, such as fur color, horn shape, and ear shape, while quantitative characteristics are characteristics that cannot be grouped directly but must be done by weighing and measuring the livestock's body, such as body weight (Wahyuni et al., 2016). Until now, information or studies on kacang goats in Banggai Laut Regency are still very limited, especially regarding the characteristics of qualitative and quantitative characteristics. The purpose of this study was to determine the existence of local goat characteristics in Banggai Laut Regency.

MATERIAL AND METHOD

This research was conducted in June 2025 on Banggai Island, Banggai Laut Regency, Central Sulawesi Province. The research subjects were local goats, male and female, aged 1-2 years, from Banggai Island, Banggai Laut Regency, Central Sulawesi. The research involved identifying the characteristics of local goats.

Research Methods

This study uses observation and interviews to determine the quantitative and qualitative characteristics of local goats on Banggai Island, Banggai Laut Regency. Sampling will be conducted by identifying goat breeders in Banggai Laut Regency. A total of 50 goats, each male and female, will be sampled. The measurements will be qualitative and quantitative.

Table 1 Tools used for research

No	Tools	Brand	Function
1.	Measuring tape	Livestock Tape	To measure livestock
2.	Measuring stick	Measuring Stick	To measure livestock
3.	Scale	Mini Crane Scale	To measure weight
4.	Stationery	Snowman	To record observation results
5.	Camera/HP	Infinix Note 40	To take documentation

Sampling was conducted through direct observation of livestock body size at the research site. The research location and sample selection methods used were purposive sampling and incidental sampling, as proposed by Sugiono (2013). Purposive sampling was based on the location with the largest goat population, namely in Banggai Tengah District, Banggai Laut Regency, with a sample size of 50 goats. This research was conducted through three main stages: observation, identification, and interviews, with the following steps:

1. Field Observation

Researchers conducted direct observations at the research location to obtain a general overview of the research object's condition, such as the environment, livestock population, and husbandry practices employed by farmers.

2. Livestock Identification

After conducting observations, researchers identified the livestock subjects. Identification included recording qualitative characteristics (such as coat color, ear shape, body pattern) and quantitative characteristics (such as body weight, body length, shoulder height) relevant to the research objectives.

3. Livestock Interviews

Researchers conducted direct interviews with farmers using structured and semi-structured interview guidelines. These interviews aimed to obtain in-depth information regarding the background of the farm, husbandry methods, livestock origins, and local knowledge held by farmers regarding the characteristics of local livestock.

Observed Variables

According to Ilham (2012) and Rahardian (2014), the variables observed in the characteristics of Kacang goats include quantitative and qualitative traits.

- Quantitative traits:

The variables studied included animal age, sex, body weight, and body measurements, including shoulder height, hip height, hip width, body length, chest width, chest depth, chest circumference, ear length, and ear width.

Body measurements and weighing of Kacang goats were carried out using the following procedures:

1. Sex: The sex of the goat was identified through direct observation of the external reproductive organs.
2. Body weight was obtained by weighing before feeding or grazing to ensure accurate results. This process was carried out using a kilogram (kg) scale.
3. Shoulder height was measured from the highest point of the shoulder to the ground using a measuring stick in centimeters (cm).
4. Hip Height: Measured using a measuring stick from the highest point of the hips perpendicular to the ground, in centimeters (cm).

5. Hip Width: Measured using a measuring stick at the hip joint between the right and left sides, in centimeters (cm).
6. Body Length: Measured as the straight-line distance from the outer front edge of the scapula to the ischium (ischium) using a measuring stick in centimeters (cm).
7. Chest Width: Measured between the center of the left and right sternum using calipers (cm).
8. Inner Chest: Measured as the distance from the highest point of the shoulder to the bottom of the sternum using a measuring stick in centimeters (cm).
9. Chest Circumference: Measured around the chest cavity directly behind the shoulder joint (scapula) using a measuring tape (cm).
10. Ear Length: Measured from the base to the tip of the ear using a measuring tape in centimeters (cm).
11. Ear Width: Measured around the outer ear from left to right using a measuring tape in centimeters (cm).

- Qualitative Characteristics:

Dominant coat color: Goat coat color is visually observed based on the dominant color on the head, body, and limbs.

1. Body coat color pattern, observed in three main areas: the front, middle, and back of the body.
2. Facial lines, classified into two categories: convex and flat.
3. Ear shape, categorized into three types: erect, semi-hanging, and completely hanging down.
4. Presence of horns, identified based on the categories of horned, hornless, or horny bumps.
5. Presence of beard: The presence of a beard is classified into two categories: bearded and beardless.
6. Back lines, classified based on their shape when the goat is in a normal standing position: convex, straight, or concave.

Data Analysis

The quantitative characteristics obtained were analyzed descriptively by calculating the mean and standard deviation for each observed trait. Qualitative traits observed included horn shape, coat color pattern, ear shape, dorsal lines, and facial lines. Statistical analysis used relative frequency with the following formula:

$$\text{Relative frequency} = \frac{\sum \text{characteristic A}}{n} \times 100\%$$

Where:

A = One of the qualitative traits in the sheep observed

n = Total sample of local goats observed

RESULT AND DISCUSSION

Husbandry Management

The local goat husbandry system in Banggai Tengah District, Banggai Laut Regency, is generally traditional, although some farmers have implemented a semi-intensive system. Goat husbandry is generally carried out by the community as a side business or hobby, as most farmers work as civil servants. Knowledge of goat husbandry is acquired autodidactically from personal experience or from fellow farmers. Farmers' lack of understanding of the benefits of goat husbandry contributes to a subsistence system, in addition to its role as a side business and

family savings to meet urgent needs (Kurnaish, N.N., 2013). Some farmers have simple pens used to house their livestock at night, while during the day the goats are allowed to graze freely. The pens used are generally colony pens without walls, with roofs made of zinc or palm leaves. The floors of the pens are mostly dirt, although some farmers have used wooden floors.

The feed provided comes from wild grass found in the surrounding area, and some goats are allowed to forage for themselves while grazing. Drinking water is usually provided directly around the pen without permanent drinking troughs. Regarding livestock health, some farmers have implemented disease prevention measures such as spraying pens with disinfectant, bathing livestock, cleaning manure, trimming hooves and horns, and administering vitamins and deworming medication. However, these measures are generally only carried out when necessary or when livestock show signs of illness. Livestock manure is generally sold directly to third parties without further processing. The most common disease found in goats in Central Banggai District is worms, and farmers treat this independently by administering deworming medication. Regarding reproduction and breeding, goats are mated naturally using the farmer's own bull. Farmers also strive to avoid inbreeding to maintain the quality of their offspring. The average birth rate is two kids every two years, although this figure can vary due to calf mortality, which is generally caused by bloat. In terms of marketing, farmers sell their livestock, especially kids, directly to buyers who visit the farm. This marketing system is still passive and depends on local buyer demand.

Qualitative Traits

The results of the qualitative trait study of Kacang goats in Banggai Laut can be seen in Table (2) below.

Table 2 Qualitative characteristics of Banggai Laut goats

Qualitative traits	Total Sample (Head)	Total	
		Head	Percentage (%)
Dominant Fur Color:			
Black		17	34
White		9	18
Brown		24	48
Total		50	100
Color Combination Patterns			
Plain Black		2	4
Black and White		18	36
Black and Brown		5	10
Black, White, and Brown		17	34
Brown and White		7	14
Light Brown		1	2
Total		50	100
Frontal Profile			
Convex		17	34
Flat		33	66
Total		50	100

Ear Shape		
Standing	6	12
Half-Hanging	28	56
Hanging Down	16	32
Total	50	100
Horn Shape		
Hornless	1	2
Horned	49	98
Total	50	100
Beard		
Bearded	6	12
Beardless	44	88
Total	50	100
Back		
Flat	6	12
Slightly Concave	16	32
Concave/Curved	28	56
Total	50	100

Color

Research shows that Kacang goats in Banggai Laut Regency have three main colors: black, white, and brown, both plain and in combination. Based on the Indonesian National Standard (SNI) (2018), Kacang goats have short fur in various shades of brown, black, white, or a combination of these three colors. The coat color variations of Kacang goats found in Banggai Laut are shown in Figure 1.



Figure 1. The dominant fur color variations of Kacang goats in Banggai Laut

The dominant goat color found in Banggai Laut Regency is brown (48%), followed by black (34%), and white (18%). Results showed that each individual Kacang goat has a different color. Plain-colored goats (single color) were found to be plain black (4%), light brown (2%), and non-plain-colored goats (multiple colors) were black and white combinations (36%), black and brown combinations (10%), black and white and brown combinations (34%), and brown and white combinations (14%). Similarly, research by Destomo et al. (2017) in Bengkalis Regency also found a similar pattern, where combination colors were more dominant than plain colors. The variety of coat color combinations in Kacang goats found in Banggai Laut is shown in Figure 2.



Figure 2. Combination Variations of Banggai Laut Goat Fur

According to Ilham et al. (2019), coat color variation in Kacang goats is influenced by the combination of eumelanin (black) and pheomelanin (brown) pigment genes, as well as the interaction of genes controlling color patterns. This coat variation is due to the lack of specific breeder preferences regarding coat color. The high level of diversity also occurs due to naturally occurring mating patterns, uncontrolled by breeders, allowing offspring to develop specific coat colors (Rumfot et al., 2023).

Horn Shape, Facial Lines, and Ears

Research shows that Kacang goats found in Banggai Laut have different horn shapes: 49 (98%) have horns, and 1 (2%) is hornless. According to the Indonesian National Standard (SNI), 2018, Kacang goats have horns that range from straight to curved backward. Based on their genotype, horned goats are an expression of a recessive gene. Protruding horns are thought to be the result of an imperfect interaction between the recessive horned gene and the dominant hornless gene, resulting in imperfect horn growth (Rumfot et al., 2023). The following characteristics of goat horn shape are presented in Figure 3.



Figure 3. The shape of the horns of the Banggai Laut goat

Based on observations of the facial features of Kacang goats in Banggai Laut Regency, two forms were identified: convex and flat. 33 goats (66%) had a convex facial profile, while 17 young goats (34%) had a flat facial profile. A flat facial profile is a characteristic of the original

Kacang goat, which has not undergone extensive crossbreeding. A convex facial profile is a characteristic of PE goats, and as a result of crossbreeding with Kacang goats, many of the offspring possess this characteristic (Ilham et al., 2019). Similar to research by Kusuma (2016), Kacang goats with a convex facial profile are more dominant than those with a flat facial profile.

The ear shape of Kacang goats in Banggai Laut Regency is dominated by the semi-hanging type (56%), followed by the drooping type (32%), and the upright type (12%). Based on the results of Ilham's (2012) research on 100 Kacang goats in Bone Bolango Regency, it was found that most goats had semi-hanging ears as much as 95%, while drooping ears were only found in 5% of individuals. These results indicate that Kacang goats in Banggai Laut have a more diverse ear shape pattern with three main types, but still have similar characteristics to Kacang goats in Bone Bolango, namely the dominance of semi-hanging ear shapes. In addition, the presence of erect ears in some individual goats in Banggai Laut is in line with the opinion of Wibowo, (2015) who stated that Kacang goats have a relatively small body size with small, erect ears. This indicates that the typical morphological characteristics of Kacang goats are still maintained in the Kacang goat population in Banggai Laut. The following characteristics of goat ear shapes are presented in Figure 4.



Figure 4. The shape of the ears of the Banggai Laut peanut goat

Backline and Beard

The results of the study indicate that the backline of the Kacang goat in Banggai Laut is generally concave (56%), followed by slightly concave (32%), and flat (12%). This finding contrasts with Malina (2021) who stated that the Kancang goat generally has a straight body with a straight back, although in some cases it appears slightly curved, so that the rear end of the body appears higher than the front. However, in this case, the concave back shape is more dominant than the slightly concave and straight back shape. Research conducted by Ilham (2012) found only straight backs. The following characteristics of the goat's backline are presented in Figure 5.



Figure 5. The shape of the back of the Banggai Laut goat

Most Kacang goats in Banggai Laut are beardless (88%), while only 12% have beards. Beards are usually found in males. This finding is similar to Malina's (2021) finding that beards are well-developed and thick in adult male goats, while females tend to have less dense beards. The following characteristics of goat beards are presented in Figure 6.



Figure 6. The Beard Shape of the Banggai Laut Goat

Quantitative Traits

The results of the quantitative trait research on Kacang goats in Banggai Laut can be seen in tables (3) and (4) below.

Table 3. Quantitative Characteristics of Male Kacang Goats in Banggai Laut

N	Quantitative traits	Banggai	Central Banggai	South Banggai	North Banggai	Value	
		♂	♂	♂	♂	Average ± SD	CV
		3	5	2	3		
13	Body weight	24,08	20,38	28,57	10,27	20,83 ± 10,68	51,255
	Withers height	56,33	50,60	62,00	45,00	53,48 ± 9,90	18,519
	Hip height	57,67	51,00	64,00	46,33	54,75 ± 9,95	18,167
	Body length	51,67	49,40	57,50	42,33	50,23 ± 7,62	15,175
	Chest width	17,00	13,80	17,00	12,00	14,95 ± 3,28	21,879
	Chest depth	26,17	24,40	29,00	23,00	25,64 ± 4,99	19,461
	Chest circumference	69,83	63,60	73,50	51,33	64,57 ± 12,13	18,732
	Hip width	18,67	14,60	17,00	14,00	16,07 ± 3,32	20,663
	Ear length	14,00	13,30	17,00	13,33	14,41 ± 2,30	15,930
	Ear width	6,50	6,40	7,75	6,17	6,70 ± 0,91	13,572

Table 4. Quantitative characteristics of female kacang goats in Banggai Laut

N	Quantitative	Banggai	Central	South	North	Value
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traits	Banggai				Average SD	±	CV
	♀	♀	♀	♀			
	9	7	11	10			
37 Body weight	19,04	30,10	17,16	19,23	19,23 ± 5,18		26,937
Withers height	49,22	73,60	50,27	51,20	50,82 ± 3,99		7,842
Hip height	50,44	75,80	51,45	53,20	52,31 ± 4,42		8,452
Body length	51,39	74,80	49,00	49,95	50,94 ± 4,88		9,570
Chest width	16,39	20,00	13,64	14,80	14,78 ± 1,92		12,946
Chest depth	23,28	34,40	24,45	25,50	24,45 ± 2,23		9,494
Chest circumference	63,67	91,60	60,82	63,80	63,43 ± 6,65		10,489
Hip width	17,67	21,60	16,09	16,50	16,42 ± 1,66		10,109
Ear length	12,72	19,90	14,14	13,00	13,52 ± 1,76		13,046
Ear width	6,22	9,06	6,32	6,05	6,27 ± 0,71		11,325

Based on tables (3) and (4), the varying body sizes of Kacang goats in Banggai Laut are likely due to growth factors. The quality of the offspring depends on two factors: genetics and the environment (Lukman, 2023).

Body Weight

According to Afriansingsih (2023), body weight is a very important trait in Kacang goats and is influenced by genetics. The weight of Kacang goats can be influenced by both genetic and environmental factors. Research on Kacang goats on Banggai Island showed that the average body weight of males was 20.83 ± 10.68 kg, while females had an average body weight of 19.23 ± 5.18 kg. This value is almost identical to the research results of Lukman (2023), who reported that the body weight of male kacang goats in West Alas District, Alas Regency, and Sumbawa Regency was 24.7 ± 3.31 kg, while female goats weighed 24.1 ± 2.80 kg. Gender is known to influence livestock body weight, with males generally having a higher body weight than females. This difference is caused by the influence of sex hormones, particularly testosterone in males, which plays a role in increasing the rate of growth and body development.

Withers Height

Withers height is an important parameter in assessing quantitative traits in kacang goat breeds. Research on kacang goats on Banggai Island showed that the average withers height of male goats was 53.48 ± 9.90 cm, while female goats had an average withers height of 50.82 ± 3.99 cm. These findings are in line with the research results of Lukman, (2023), who reported that the withers height of female Kacang goats in Alas Barat District, Alas District, and Buer District was 51.1 ± 1.83 cm, while in male goats it was 53.3 ± 1.84 cm. However, the shoulder height values obtained in this study were still lower than the SNI standard, which was around 59 cm for male Kacang goats and 56 cm for female goats. The difference in withers height between male and female goats is thought to be influenced by genetic factors and environmental conditions that play a role in the livestock growth process.

Hip Height

Hip height is an important indicator to consider because it supports the body and reflects the growth of the hind legs (Saputra, 2019). Research on Kacang goats on Banggai Island showed

that the average hip height for males was 54.75 ± 9.95 cm, while females had an average hip height of 52.31 ± 4.42 cm. This value is slightly higher than the research by Zaki et al. (2021), who reported that male Kacang goats in Tambang and Siak Hulu Districts, Kampar Regency, had a hip height of 48.84 ± 3.50 cm, while females had a hip height of 48.34 ± 2.40 cm. These differences in hip height are thought to be influenced by environmental and genetic factors that play a role in the growth process of Kacang goats.

Body Length

Body length is a morphometric parameter that can provide an overview of the body shape of livestock, a characteristic of a breed, and is an important indicator in the selection process (Mulyadi, 2014). Research on Kacang goats on Banggai Island showed that the average body length of males was 50.23 ± 7.62 cm, while that of females was 50.94 ± 4.88 cm. These values are higher than the results of research by Afriansingsih (2023), which reported that male Kacang goats in Alas Barat District and Buer District had a body length of 45.7 ± 3.59 cm, while females had a body length of 44.3 ± 2.09 cm. However, the body length values obtained in this study were still lower than the Indonesian National Standard (SNI) standards, which are approximately 57 cm for male Kacang goats and 59 cm for females. These differences in body length values between regions are thought to be influenced by genetic factors, feed quality, and environmental conditions, which play a role in livestock growth.

Chest Width

Chest width is a body measurement that reflects the lateral growth of the shoulder bones and chest cavity. Increased chest width is generally accompanied by increased body weight, as the development of internal organs and the attachment of meat tissue to the shoulder and chest also influence livestock growth (Rahardian, 2014). Research on Kacang goats on Banggai Island showed that the average chest width for males was 14.95 ± 3.28 cm, while for females it was 14.78 ± 1.92 cm. These values are similar to the results of research by Zaki et al. (2021), who reported that male Kacang goats in Tambang and Siak Hulu Districts had chest widths of 13.81 ± 1.70 cm, while for females it was 14.80 ± 0.70 cm. These differences between research locations are likely influenced by genetic and environmental factors that influence the livestock's ability to express their phenotypic performance.

Chest Depth

Chest depth is a morphometric parameter that can indicate the level of fatness in livestock, as growth and shrinkage in this size are influenced by the development of muscle tissue, which is directly related to body weight (Rahardian, 2014). Research on Kacang goats on Banggai Island showed that the average chest width for male goats was 25.64 ± 4.99 cm, while for female goats, the average was 24.45 ± 2.23 cm. These values are similar to the results of research by Ilham et al. (2019), which reported that Kacang goats in Bone Bolango Regency had a chest width of 25.95 ± 2.83 cm. These similar values are thought to be influenced by genetic factors and relatively similar husbandry management in both study areas.

Chest Circumference

Chest circumference is an indicator of rib growth and the development of muscle tissue attached to these bones. Increased chest circumference reflects growth and increased muscle mass in the chest area, contributing to increased body weight (Vinsensia et al., 2021). Research on Kacang goats on Banggai Island showed that the average chest circumference for male goats was 64.57 ± 12.13 cm, while for female goats, the average was 63.43 ± 6.65 cm. These values are similar to research by Lukman (2023), who reported that male Kacang goats in Alas Barat District, Alas District, and Buer District, Sumbawa Regency, had chest circumferences of 63.7 ± 2.44 cm, while for females, they were 62.1 ± 1.31 cm. However, the chest circumference values

obtained in this study were still lower than the Indonesian National Standard (SNI), which is approximately 66 cm for male Kacang goats and 66 cm for female goats. The differences in values between the study areas are thought to be influenced by genetic factors and feed management, which influence livestock growth.

Hip Width

Hip width is an important morphometric indicator, especially in females, as wider hips are associated with optimal reproductive capacity. Broad hips can support pregnancy and facilitate childbirth, making them a key consideration in selecting potential breeders (Putri, A., 2014). Research on Kacang goats on Banggai Island showed that the average hip width for males was 16.07 ± 3.32 cm, while females averaged 16.42 ± 1.66 cm. These values are relatively comparable to the research by Zaki et al. (2021), who reported that male Kacang goats in Tambang and Siak Hulu Districts had hip widths of 16.02 ± 1.76 cm, while females had hip widths of 16.52 ± 1.56 cm. The conformity of values between these studies shows that the hip width size of Kacang goats is relatively the same in several regions, with variations that appear possibly influenced by genetic factors, environmental conditions, and feed management that affect the growth and development of the hip frame.

Ear Length

Ear length can provide additional information in the morphometric assessment of goats, although this parameter generally does not contribute significantly to overall body performance (Prayoga, 2025). Research on Kacang goats on Banggai Island showed that the average ear length of male goats was 14.41 ± 2.30 cm, while female goats averaged 13.52 ± 1.76 cm. These findings align with research by Lukman (2023), who reported that the ear length of male Kacang goats in Alas Barat, Alas, and Buer Districts was 13.5 ± 0.58 cm, while that of female goats was 13.3 ± 0.48 cm. The difference in ear length between male and female goats is thought to be influenced by genetic factors and environmental conditions that play a role in the growth of livestock tissue.

Ear Width

Ear width is influenced by genetic factors inherited from the mother, so this characteristic can be used as a distinguishing characteristic of a livestock breed (Rahardian, 2014). Research on Kacang goats on Banggai Island showed that the average ear width of male goats was 6.70 ± 0.91 cm, while female goats averaged 6.27 ± 0.71 cm. Based on measurements of ten morphometric parameters, Kacang goats on Banggai Island exhibited body sizes generally comparable to Kacang goats from other regions, such as West Alas District, Alas District, Buer District, Kampar Regency, Tambang District, Siak Hulu District, Bone Bolango Regency, and Sumbawa Regency. Most parameters including body weight, shoulder height, hip height, body length, chest width, chest depth, chest circumference, hip width, ear length, and ear width have the same value or only slightly different, still within the normal range of variation and population standard deviation, thus indicating that the phenotype of the Kacang Banggai goat is consistent with the general characteristics of the Kacang goat breed. Although some parameters such as shoulder height, body length, and chest circumference are slightly lower than the SNI Standard (2018), these differences are not biologically significant and remain within the typical morphometric range of Kacang goats, with small variations between regions that are likely influenced by genetic factors, environment, feed quality, and maintenance management (Zaki et al., 2021).

CONCLUSION

The qualitative characteristics of Kacang goats in Banggai Tengah District, Banggai Laut Regency, partly show the characteristics of a dominant brown coat color, a combination of color patterns often appears compared to a single color, one of which is black and white, ears are

predominantly half hanging, have horns, a flat face line, a concave back line, and the majority are beardless. The body and morphometric size of Kacang goats in Banggai Laut vary, with males generally having larger body sizes than females, not significantly different from Kacang goat populations from various other regions in Indonesia.

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