Short Communication

GROSS SKIN THICKNESS IN RELATION TO AGE IN DIFFERENT REGIONS OF BAKERWALI GOAT

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ABSTRACT

A study was conducted to record the gross thickness of skin in various regions of the body at different age groups on Bakerwali goats. The animals were divided into three age groups viz, neonatal, young and adult. The thickness of skin increased with advancement of age. Neck dorsal showed the maximum thickness and thorax ventral showed the minimum thickness among the different regions in all the groups studied.

Key words : Bakerwali goat, Skin thicknes, age.

Bakerwali goat is one among the twenty well defined breeds of goat in India and is the prominent breed of Jammu and Kashmir. The Skin is the largest and versatile organ of the body and acts as the first line of defense. The adaptability of the animal depends upon the skin, which acts as an effective barrier between external and internal environment of the body, it acts as a bad conductor between body and atmosphere (Bhayani *et al*., 1989 and Gayakee *et al*., 2008). The skin of the goats is used as a basic raw material in leather industries. Hence, on understanding the variation of the thickness of skin between different age groups and between different regions of the body is very important aspect to know. Since there is no methodical record on this aspect in Bakerwali goats, and the information on the gross skin thickness of northern Indian goats is scanty.

This study was undertaken to collect the preliminary information about the skin thickness in Bakerwali goats. The studies on the characteristics of gross thickness of skin in this goat breed is also essential for identifying the amount of variation in the skin thickness between various breeds habituated in different agroclimatic zones of India.

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The data on the gross skin thickness of Bakerwali goats was collected from three different age groups viz., below 1 year age (neonatal), 2-3 years of age (young) and above 3 years (adult). Thirty five animals were included in each group comprising of 105 animals in total. Data for gross skin thickness was collected from eight different regions of body of each animal namely, neck dorsal, neck lateral, neck ventral, thorax dorsal, thorax lateral, thorax ventral, loin dorsal and loin lateral regions. The gross skin thickness was recorded irrespective of the gender of animal. The double- fold skin thickness was measured with the help of a vernier caliper having accuracy of 0.05mm. The data were subjected to basic statistical analysis by using Univariate ANOVA at 5% level. Multiple comparison test was used to compare the difference between the groups and within the groups. Independent sample T- test was used to compare the difference between the two regions only (neck ventral and thorax ventral). For analysis, values of {P<0.05} were considered significant. All analysis was done by using SPSS-17. Statistical calculations (mean ± standard error) were recorded according to the standard statistical procedures recommended by Snedecor and Cochran (1994).

The mean (± SE) double fold gross skin thickness of Bakerwali goat varied among different regions in three age groups studied. The study on gross skin thickness in relation to age indicated that gross skin thickness increased linearly as age advances (Table. 1). The thickness was found to decrease gradually from dorsal region to ventral region in all age groups. These findings are in corroboration with the findings of Strickland and Calhoun (1963) in cat, Kozlowski and Calhoun (1969) in sheep and Tripati *et al.,* (1996) in neonatal goats.

The Gross Skin Thickness was observed to be maximum on the neck dorsal region and minimum on the thorax ventral region in all the age groups studied (Table.1a, 1b, 1c). These findings are in total concord with Aslan *et al.,* (2004) in zavot breed of cattle and Purushothaman *et al.,* (2010) in Mecheri sheep. However, Sharma and Bharadwaj (1993) observed the thickest skin on the ventral side of neck in yak. Moreover, the thickness was more on dorsum of the trunk than the ventral side. A significant increase in the thickness in lateral regions of neck, thorax and loin was observed in young age group (Table.1b).

The gross thickness of skin showed increasing pattern with advancing age and maximum skin thickness was observed in neck dorsal region and minimum in thorax ventral region in all age groups.

Table-1 : Gross thickness of skin (mm) at different post-natal age groups and in different regions of Bakerwali goat (Mean ± SE).

Regions	Neonatal	Young	Adult
Neck dorsal	1.81 ± 0.01^{a}	2.96 ± 0.06^{b}	3.29 ± 0.03^{c}
Neck Lateral	1.75 ± 0.02^{a}	2.35 ± 0.06^{b}	2.54 ± 0.09^{c}
Neck Ventral	1.68 ± 0.03^{a}	2.12 ± 0.07^{b}	2.35 ± 0.08^{c}
Thorax dorsal	1.78 ± 0.02^{a}	2.81 ± 0.09^{b}	3.08 ± 0.09^{c}
Thorax lateral	1.66 ± 0.03^{a}	1.91 ± 0.03^{b}	2.16 ± 0.05^{c}
Thorax ventral	1.50 ± 0.03^{a}	1.65 ± 0.03^{b}	1.74 ± 0.06^{b}
Loin dorsal	1.71 ± 0.02^{a}	2.75 ± 0.07^{b}	2.98 ± 0.08^{c}
Loin lateral	1.64 ± 0.02^{a}	1.75 ± 0.03^{a}	2.05 ± 0.06^{b}

Values between the group with different superscript (a & b) differ significantly (P<0.05)

Table-1a : Gross thickness of skin (mm) in different regions of neonatal Bakerwali goat (Mean ± SE).

Regions	Neck	Thorax	Loin
Dorsal	1.81 ± 0.01^{a}	1.78 ± 0.02^{ab}	1.71 ± 0.02^{b}
Lateral	1.75 ± 0.02^{a}	1.66 ± 0.03^{b}	1.64 ± 0.02^{b}
Ventral	1.68 ± 0.03^{a}	1.50 ± 0.03^{b}	

Values between the group with different superscript (a & b) differ significantly (P<0.05)

Table-1b : Gross thickness of skin (mm) in different regions of young Bakerwali goat (Mean ± SE).

Regions	Neck	Thorax	Loin
Dorsal	2.96 ± 0.06^{a}	2.81 ± 0.09^{a}	2.75 ± 0.07^{a}
Lateral	2.35 ± 0.06^{a}	1.91 ± 0.03^{b}	1.75 ± 0.03^{c}
Ventral	2.12 ± 0.07^{a}	1.65 ± 0.03^{b}	

Values between the group with different superscript (a & b) differ significantly (P<0.05)

Table-1c : Gross thickness of skin (mm) in different regions of adult Bakerwali goat (Mean ± SE).

Regions	Neck	Thorax	Loin
Dorsal	3.29 ± 0.03[a]	3.08 ± 0.09[b]	2.98 ± 0.08[b]
Lateral	2.54 ± 0.09[a]	2.16 ± 0.05[b]	2.05 ± 0.06[b]
Ventral	2.35 ± 0.08[a]	1.74	0.06[b]

Values between the group with different superscript (a & b) differ significantly (P<0.05)

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