

Original Research Article

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Performance of Growth Pattern of Sojat Goat in their Native Tract

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ABSTRACT

A survey was conducted in Pali district of Rajasthan to study growth pattern of Sojat goat in their native tract. An interview schedule was designed to growth tract was pre tested in the field before actually conducting survey. Farmers in about 10 villages of Sojat tehsil were approached with structured interview schedule to collect information on growth aspects of Sojat goat in the native tract. A total of 114 respondents were contacted and interacted with them on different traits. Observation on body weights and measurements were also recorded on animals of different age group. The observation were found length, height and girth in adult males were 81.68 ± 0.11 , 81.20 ± 0.07 and 85.75 ± 0.12 cm while the values in case females were 81.58 ± 0.39 , 80.89 ± 0.21 and 84.75 ± 0.52 cm. The body weight at 3, 6, 9 and 12 months were 22.40 ± 0.15 , 29.28 ± 0.07 , 42.78 ± 0.21 and 50.37 ± 0.64 kg in male and the corresponding values in female were 19.50 ± 0.14 , 25.65 ± 0.10 , 30.93 ± 0.23 and 37.45 ± 0.15 kg respectively.

Keywords

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Introduction

Livestock in developing countries like India have a considerable role in its rural area population as it provides labour for land cultivation and employment to huge number of people. Goats are farmed throughout the world for being important source of milk, meat, fibre as well as of proteins along with

their capability of adapting in different environmental conditions. The total livestock population of India as per 20th Livestock Census 2019 is 535.42 million number which is 10.63% of total world population. The largest population (in million number) share is of cattle at 192.52, followed by goats (148.88), buffaloes (109.85), sheep (74.26) and pigs (9.06), respectively. India is

contributing 10.40% of total livestock in world and about 14.23% of which is contributed by goats. The maximum goat population state in India is Rajasthan followed by West Bengal. Good quality milk is produced by Indian goat breed such as Jamunapari, Barbari, beetle, Surti and Jakhrana.

Among all species of farm animals, Goats have the widest ecological range and have been poor people's most reliable livelihood resource since their domestication during Neolithic Revolution about 10 millennia ago. Goat plays a significant role in providing supplementary income and livelihood to millions of resource poor farmers and landless laborers of rural India. Small ruminant rearing ensures self-employment and acts as a cushion in distress situations like drought and famine

India ranks on top in goat population. The demand for meat, milk and fiber is increasing progressively and expected to further rise in future in view of sizable increase in per capita income and health consciousness of people. Worldwide consumers are preferring products that are "clean, green and ethical". As such goat producers are shifting to husbandry practices that do not compromise the welfare of animals. Medicinal properties of goat milk increased the interest of society to use it as therapeutic health food nutraceutical; moreover, biotechnologists are focusing on designer milk for human health.

Goat are primarily reared by small farmers and provides employment and livelihood to small scale producers in the state. Rajasthan produces highest goat milk production in the country and contributes to the tune of 35% of total goat milk in the country. There are 34 registered breeds of goat in the country which are divided on the basis of agroclimatic regions into four categories. Goat farming has tremendous potential for income and

employment generation, especially in rural areas (Singh *et al.*, 2013). Sojat is the newer breed of north western arid and semi arid region with its epicentre in Sojat and adjoining regions. The breed is locally known by its pink skin colour and long ear goat. Sojat goat is medium to large in size and characterized by its white body colour with brown spots, long pendulous ears, upward turned horns and presence of wattle and beard. It is mainly kept for meat and milk production is very low. Growth pattern of Sojat goat information is very scanty. Hence, the present investigation was planned on the performance of growth pattern of Sojat goat in their native tract.

Materials and Methods

A survey was conducted to study growth rate of Sojat goat in its native tract. An interview schedule was designed to growth performance was pre tested in the field before actually conducting survey. Farmers in about 10 villages of Sojat tehsil of Pali district were approached with structured interview schedule to collect information on various aspects of Sojat goat in the native tract. A total of 114 respondents were contacted and interacted with them on different traits. Observation on body weights and measurements were also recorded on animals of different age group. The respondents were purposely chosen in a manner to include different cross section of society. The information collected from the farmers field is broadly discussed under different heads as under

Results and Discussion

The data with respect to body weight and body measurements are presented in Table 1 the birth weight of male and female was 3.84 ± 0.02 and 3.83 ± 0.02 kg respectively with a range of 3.5 to 4.3 kg. The body weight at 3, 6, 9 and 12 months were 22.40 ± 0.15 , 29.28 ± 0.07 , 42.78 ± 0.21 and 50.37 ± 0.64 kg in

male and the corresponding values in female were 19.50 ± 0.14 , 25.65 ± 0.10 , 30.93 ± 0.23 and 37.45 ± 0.15 kg respectively. The effects of age and sex on growth and development have been clearly documented in a number of species, including goats of different breeds and types. The most significant effects of age on growth and development are generally associated with increasing live mass with obvious changes in body composition and conformation (Webb *et al.*, 2005) (Fig. -4).

The adult body weights in the male and females were 59.70 ± 0.23 and 53.84 ± 0.61 kg respectively with range of 56.5 to 62.5 and 45 to 60.5 kg in male and female respectively. Lower values for body weight were reported by Bhusan *et al.*, (2012) in Jakhrana kids and Patil *et al.*, (2013) in Sangamneri goats. Growth is a chronological process and its inevitable consequence is an increase in size and ageing. Ageing is associated with an increasing inability to sustain the functional integrity of cells, organs and systems (Webb and Casey, 2005).

The body measurements in terms of length, height and girth were also measured at different age groups in the animals. The length, height and girth at birth in males and females were 31.03 ± 0.06 , 28.03 ± 0.06 , 33.03 ± 0.06 and 27.66 ± 0.11 , 30.03 ± 0.06 and 30.40 ± 0.10 cm respectively. The length at 3, 6, 9 and 12 months of age in males were 57.54 ± 0.20 , 65.24 ± 0.24 , 73.57 ± 0.10 and 74.54 ± 0.11 cm respectively while in females the values were 52.79 ± 0.29 , 61.58 ± 0.24 , 64.11 ± 0.10 and 69.46 ± 0.33 cm. Genetics certainly play a major role in any production program for goat meat. One of the first objectives should be to select a breed that can adapted to the climatic and topographic environment, or that is suitable for a particular production system (Casey and Webb, 2010). The height at 3, 6, 9 and 12 months in males were 53.82 ± 0.13 , 62.35 ± 0.31 , 76.00 ± 0.15 and

80.99 ± 0.07 cm, the corresponding values for females were 51.68 ± 0.39 , 64.10 ± 0.35 , 60.95 ± 0.17 and 67.53 ± 0.47 cm. The chest girth of males at 3, 6, 9 and 12 months were 58.28 ± 0.13 , 67.15 ± 0.19 , 79.68 ± 0.11 and 82.80 ± 0.15 cm. The values for females at these age groups were 55.39 ± 0.34 , 63.25 ± 0.37 , 64.89 ± 0.07 and 71.32 ± 0.43 cm respectively (Table-1). The length, height and girth in adult males were 81.68 ± 0.11 , 81.20 ± 0.07 and 85.75 ± 0.12 cm while the values in case females were 81.58 ± 0.39 , 80.89 ± 0.21 and 84.75 ± 0.52 cm, Which was lower value reported by Yadav and B. S. Bhimawat (2007) in crossbred goat. The skeletal size of goats is rather variable due to the effects of natural selection and adaptation of the various breeds or types of goats to different ecological regions in the world (Webb, 2007).

The result indicated that the survey was conducted to collect information on Sojat goat which has been gained enormous interest in recent past by farmers, individuals, entrepreneurs, consumers and various government and non government agencies.

The breed has some unique features which has generated liking by people all over the country. The bucks fetch premium price during Bakrid, as it is most beautiful among existing goat breeds of India and also due faster growth rate.

The survey conducted to gather information on every aspect of Sojat goat and the findings of the survey suggest that Sojat goat has tremendous potential to become most promising goat of the state and to provide employment and livelihood to rural masses due to faster growth pattern as compare to existing breed of goats. There is an utmost need that the uniform goat population which is performing well in the native tract and distributed in adjoining areas should be registered as a new goat breed.

Table.1 Growth traits of Sojat goat

Particulars	Male			Female		
	Mean \pm SE	Range	N	Mean \pm SE	Range	N
Body weight at						
Birth	3.84 \pm 0.02	3.5-4.3	26	3.83 \pm 0.02	3.5-4.2	29
3 months	22.40 \pm 0.15	20-24.5	130	19.50 \pm 0.14	17.5-21	134
6 months	29.28 \pm 0.07	28.5-30.5	74	25.65 \pm 0.10	24-27	93
9 months	42.78 \pm 0.21	39-45.1	04	30.93 \pm 0.23	28.5-35	36
12 months	50.37 \pm 0.64	41.7-58	17	37.45 \pm 0.15	34.1-39.5	46
Adult	59.70 \pm 0.23	56.5-62.5	39	53.84 \pm 0.61	45-60.5	1788
Length birth	31.03 \pm 0.06	30-32	26	27.66 \pm 0.11	26-29	29
Height birth	28.03 \pm 0.06	27-29		30.03 \pm 0.06	29-31	
Girth birth	33.03 \pm 0.06	32-34		30.40 \pm 0.10	29-32	
Length 3 month	57.54 \pm 0.20	54-60	130	52.79 \pm 0.29	48-57	134
Height 3 mo	53.82 \pm 0.13	52-56		51.68 \pm 0.39	45-57	
Girth 3 mo	58.28 \pm 0.13	56-60		55.39 \pm 0.34	49-59	
Length 6 month	65.24 \pm 0.24	62-69	74	61.58 \pm 0.24	59-65	93
Height 6 mo	62.35 \pm 0.31	57-66		64.10 \pm 0.35	58-69	
Girth 6 mo	67.15 \pm 0.19	64-70		63.25 \pm 0.37	61-71	
Length 9 month	73.57 \pm 0.10	72-75	04	64.11 \pm 0.10	63-66	36
Height 9 mo	76.00 \pm 0.15	74-78		60.95 \pm 0.17	58-63	
Girth 9 mo	79.68 \pm 0.11	78-81		64.89 \pm 0.07	64-66	
Length 12 mo	74.54 \pm 0.11	73-76	17	69.46 \pm 0.33	64-73	46
Height 12 mo	80.99 \pm 0.07	80-82		67.53 \pm 0.47	61-73	
Girth 12 mo	82.80 \pm 0.15	81-85		71.32 \pm 0.43	65-76	
Length adult	81.68 \pm 0.11	80-83	39	81.58 \pm 0.39	75-85	1788
Height adult	81.20 \pm 0.07	80-82		80.89 \pm 0.21	79-85	
Girth adult	85.75 \pm 0.12	84-87		84.75 \pm 0.52	75-90	

Fig.1



Fig.2



Fig.3



Fig.4



The goat breed can adapt well in arid and semi arid to other climatic zones, hence the registration would give recognition to animals and would help in further improvement of non-descript goat germ-plasm of the state and

country with similar climatic conditions. The most significant means of manipulating growth and development in goats include genetic selection, castration and intensive fattening

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