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## RESEARCH ARTICLE

**Growth Pattern and Management Practices of Sirohi Goat Kids in Bhilwara District of Rajasthan**C.M. Yadav<sup>1</sup>, Rajesh Jalwania<sup>2</sup> and Prakash Kumawat<sup>3</sup>

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## ABSTRACT

*The body weight in a goat is an important parameter related to selection, feeding and health care. Thus, present study was undertaken to assess the growth performance of 174 Sirohi goat kids born during 2018-21 were recorded for growth based on them at birth, three, six, nine and twelve months of age and management system followed in Tribal area of Jahazpur block in Bhilwara district were analyzed. Analysis of growth data of Sirohi goats reared under field conditions for a period of three years revealed that the body weight at birth, three, six, nine and twelve months of age were  $2.28 \pm 0.04$ ,  $11.13 \pm 0.18$ ,  $16.52 \pm 0.34$ ,  $21.31 \pm 0.48$  and  $24.57 \pm 0.58$  kg for male kids and  $2.05 \pm 0.06$ ,  $10.56 \pm 0.26$ ,  $14.46 \pm 0.36$ ,  $19.34 \pm 0.42$  and  $22.58 \pm 0.62$  kg for female kids. Flock size ranged from 2 to 15 goats. It was observed that farmers were not practising any vaccination and scheduled deworming in their flocks. Farmers may be educated about scientific rearing to improve production and reduce mortality losses.*

**Key words:** Sirohi Goat; Growth; Management system

India occupies first position in terms of goat population and milk production. Chevon (goat meat) is most preferred and widely consumed meat in the country. Since ancient times goat milk has traditionally been known for its medicinal properties and has recently gained importance in human health due to its proximity to human milk for easy digestibility and its all round health promoting traits. Still research is needed to explore and validate medicinal properties of goat milk for projecting it as therapeutic milk for human health. Demand for goat milk and milk products for internal consumption and export is expected to rise in coming years. Goat husbandry provides glimpses of future hope for employment generation, nutritional security and prosperity to the millions of small and marginal farmers in the country. 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. Rajasthan having maximum number of goats (20.84 million) followed by West Bengal (16.28 million) and Uttar Pradesh (14.48 million). The Sirohi breed has predominantly brown coat, with light or dark brown patches and occasionally white in colour. Most Sirohi goats are wattled and have

medium size flat leaf like dropping ears. The breed is also known by other names such as Parbatsari, Devgarhi and Ajmeri, reared mainly for meat and milk production. Body weight is an indicator of its physique and economic viability for marginal as well as landless farmers (Alemayehu *et al.*, 2010). However, this fundamental knowledge is often unavailable to those working with goats in the small scale farming sector, due to non availability of scales. The chief method of weighing animals without scales is to regress body weight on a certain number of body characteristics, which can be measured readily. Farmers generally follow extensive management where goats depend upon natural vegetation and crop stubbles. Hence, a study was conducted to evaluate the growth pattern and management practises of Sirohi goat kids in Bhilwara district of Rajasthan

## METHODOLOGY

The data pertaining to growth records at birth, 3, 6, 9 and 12 months of age of Sirohi kids born during 2018-21 were collected from the farmer's field maintained. A total of 32 families in Jahazpur block of Bhilwara district of Rajasthan were surveyed in adopted villages by Krishi Vigyan Kendra, Bhilwara under Maharana Pratap University of Agriculture and Technology, Udaipur. Data on 174 Sirohi

goat kids (64 males and 110 females) born during 2019-20 were recorded for body weights at birth, three, six, nine and 12 months of age, production system, feeding management and prevalence of disease and health care. The data were analyzed as per *Snedecor and Cochran (1994)*.

## RESULTS AND DISCUSSION

The present results revealed that the average body weight at birth, three, six, nine and 12 month of were  $2.28 \pm 0.04$ ,  $11.13 \pm 0.18$ ,  $16.52 \pm 0.34$ ,  $21.31 \pm 0.48$  and  $24.57 \pm 0.58$  kg for males and  $2.05 \pm 0.06$ ,  $10.56 \pm 0.26$ ,  $14.46 \pm 0.36$ ,  $19.34 \pm 0.42$  and  $22.58 \pm 0.62$  kg for females goats respectively (Table 1). Male kids weighed significantly ( $P < 0.05$ ) higher than the females at all the stages of growth except at birth. Similar values for body weight were reported by *Swami et al., (2006)* and *Jagdale et al. (2012)* in Marwari and Sangamneri goats. Field survey revealed that in Jahazpur

area of Bhilwara district goat rearing was well accepted by all classes of people. Poor and socially backward households tend to rear goats rather than large animals. The flock size ranged from 2 to 15 with one or two breeding bucks. Almost all the goats were maintained on grazing in uncultivated waste land and harvested field.

Goats were not housed inside a shed throughout the day and night but are rather tethered in the home premises and farmers offered various tree leaves and kitchen waste etc. Farmers possessing 10-15 goats provided separate Kachcha house near own house (Table 2). Grazing of goats was mainly managed by children in certain household. Farmers having higher number of goats generally assigned a young member of the family to look after the grazing. In a day goats were grazed for 4 to 6 h in the morning and 2 to 3 h in evening. Generally farmers used their own buck for breeding purpose. Natural breeding (100%) of the goats was practised by the farmers.

**Table 1. Mean ( $\pm$ SE) body weight (kg) of Sirohi goat kids under field conditions**

Sex	Birth	3 months	6 months	9 months	12 months
Male	$2.28 \pm 0.04$ (64)	$11.13 \pm 0.18$ (58)	$16.52 \pm 0.34$ (54)	$21.31 \pm 0.48$ (48)	$24.57 \pm 0.58$ (40)
Female	$2.05 \pm 0.06$ (110)	$10.56 \pm 0.26$ (102)	$14.46 \pm 0.36$ (92)	$19.34 \pm 0.42$ (84)	$22.58 \pm 0.62$ (78)
Overall	$2.16 \pm 0.05$ (174)	$10.82 \pm 0.28$ (160)	$15.48 \pm 0.36$ (146)	$20.32 \pm 0.44$ (132)	$23.56 \pm 0.60$ (118)

Means bearing different superscripts within a column differed significantly ( $P < 0.05$ );

Figures in parenthesis indicate number of observation

**Table 2. General profile of farmers (N=32) and management practises for goats**

Description	Estimate	Description	Estimate	Description	Estimate
Av. Land holding (acre)		Av. Family Size (No.)		Literacy rate (%)	45.82
Irrigated	1.86	Male	2.65		
Un-irrigated	1.20	Female	3.40		
Fodder availability (%)		Flock structure (%)		Grazing distance (km)	
Grown	10.00	Castrated males	20.24	Morning	1.82
Forest	90.00	Breeding bucks	2.60	Evening	1.70
		Does	58.34		
		Kids	18.82		
Average grazing hours		Housing of goat (%)		Vaccination	
Morning	4.26	Only day	0.00	Yes	2.00
Evening	2.40	Only night	0.00	No	98.00
		Day and nigh	100.00		
		Open house	40.38		
		Closed house	59.62		
		Separate house	90.00		
		Attached house	10.00		
		Kachcha house	92.00		
		Pucca house	8.00		

Marketing of the goats in the district was unorganized. Goats were sold to a middleman, butcher or in the local goat market. Generally farmers sold their goats at any age as per need of cash. Most of the farmers kept the male goats and sold them at higher prices during Dussehra and Eid festivals. In rural areas, farmers got a better price for white male goats used for Surya Pujaa local festival in Jharkhand. Black Bengal goats were found to be affected by *peste des petits ruminants* (PPR), enterotoxaemia, foot and mouth disease (FMD), mastitis and parasites. Vaccination against PPR, enterotoxaemia, and FMD was not practised by the farmers. The causes of death in adult goats and kids were PPR (34%) followed by invasion of predator (18%) especially by dogs. Almost similar finding were reported by Kashem *et al.* (2011) in Black Bengal goats. However, higher mortality (46.1%) due to dog bite was reported by Nandi *et al.* (2011). Others common diseases observed among kids were pneumonia, pneumoenteritis and anaemia. Farmers were not practising scheduled deworming in their flock, resulting in poor performance of the animals the study suggested that farmers may be educated about scientific rearing practises to improve production and reduce mortality losses.

## CONCLUSION

The trends of growth rate and body weight of the sirohi goat kids born during 2018-21 in tribal area of Jahazpur block of Bhilwara district indicated that the kids born with normal body weight and even growth rate. Even though the farmers were not practiced any scientific management practices, the animals attained the desired weight due to the

good pasture availability and grazing. But lack of deworming and vaccination leads more morbidity and mortality and economic loss to the farmers. In such conditions, if the farmers were educated with scientific goat rearing through various extension activities, that will enhance the knowledge level of the farmers and leads a profitable goat rearing.

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