



Sonadi sheep in their breeding tract

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Livestock production is major activity of farmers in arid and semi-arid region because livestock are more tolerant to harsh climatic conditions than crops. Large ruminant is less preferred by some of the community as well as landless and marginal framers' as it demands relatively large investment and higher maintenance cost. Rearing of sheep and goat mainly depend on common property resources for meeting their feed and fodder requirements are a preferred option as self employment by many rural resource poor. In spite of their critical role in livelihood security of rural land less, the population of sheep decreasing day by day. Therefore, an attempt was made to collect the information about socio-economic status, breed composition, feeding and management practices followed by shepherd in Sonadi breeding tract (SBT).

The major tract of Sonadi breed consist of Udaipur, Chittorgarh, Rajsamand and Dungurpur districts of Rajasthan while the minor breeding tract consist of Bhilwara district of Rajasthan and part of Gujarat (Acharya 1982). Districts Udaipur, Rajsamand and Chittorgarh were selected from major and Bhilwara from minor breeding tract for selection of tehsils within districts and villages within tehsil. The stratified sampling procedure was adopted. Total 4 tehsils in each district and 5 villages in each tehsil were selected for complete enumeration. Finally 450 shepherds were selected to collect the information with respect to demographical and geographical distributions as well as management practices. Among selected tehsils, two tehsils from each district were chosen for breed characterization. In all 6979 sheep, from 147 shepherds of 49 villages in 8 tehsils were registered for breed characterization. The appropriate questioner was developed to collect the desired information.

Socio-economic status: The total male and female member per family were 3.5 and 3.4, respectively, with the average family size of shepherd in SBT was 6.9. The overall literacy rate was 35.29 and 8.98% in male and female

respectively. Among 450 total families, 399 (88.67%) family heads were illiterate and remaining 51 (11.33%) were literate. Majority (80.00%) of shepherd belong to OBC followed by ST (7.78%), SC (7.78%) and general (4.44%). The entire household surveyed belongs to Hindu religion. Out of 450 families surveyed, 254 (56.44%) were nuclear and 196 (43.56%) were joint. Majority of sheep breeders (56.00%) had *Katcha* house followed by 28.44% mixed and 15.56% *Pucca* house. All the sheep breeders under survey had both animal husbandry and agriculture as main occupation. The overall average total land holding per family of household surveyed was 4.57 acres, of which 1.37 acres (29.88%) uncultivated and 3.21 acres (70.12%) cultivated. The pooled income per family per year in area surveyed was ₹ 5651.84. Out of which ₹ 4429.64 (78.38%) from sheep and remaining ₹ 1222.20 (21.62%) from other animals.

Livestock status and breed composition: The average number of total livestock maintained was 53.1 units, out of which 49.3 units of small ruminants (41.0 sheep + 8.3 goat) and 3.8 units of large ruminants (1.7 buffalo + 2.1 buffalo). Overall 40.5% sheep conform to Sonadi, 21.6% Marwari, 14.3% others i.e., crosses of Sonadi, Malpura and Marwari.

Flock statistics and mortality: The addition due to purchase was less (2.51%) as compared to birth (40.28%). The deduction due to death was 11.89% which is lower than sale rate (18.96%). The overall mortality irrespective of districts was highest during June. The overall mortality according to season was highest during summer (57.0%) as compared to winter (15.7%) and rainy (27.3%) seasons.

Lambing and lambing season: The sheep lamb round the year but based on frequency of lambing, there are 2 major lambing seasons, first from September to October and second from December to January. The above distinct lambing seasons are due to higher breeding/conception between April to May and July to August. More than 80% lambing in the field was observed during September to January. The average lambing rate was 77.9% on the adult ewe and 46.5% on the basis of total female. The abnormal births in terms of abortion and still births was less than 3% and among normal calving 99.67% were single birth with sex ratio of 50 : 50.

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Table 1. Least-squares means for body measurements and weight at different ages

Effects	N	Length (cm)	Height (cm)	Girth (cm)	Weight (kg)
At birth	450	32.86±0.84	37.50±0.65	35.87±0.85	2.05±0.59
3 months	1052	47.94±0.53	50.05±0.50	50.17±0.58	10.67±0.21
6 months	862	55.50±0.54	56.93±0.52	58.72±0.57	16.39±0.27
9 months	645	59.11±0.60	60.54±0.58	62.61±0.64	20.07±0.34
12 months	722	59.80±0.73	61.76±0.67	64.70±0.76	22.81±0.47
15 months	658	62.77±0.68	63.69±0.70	68.06±0.75	25.62±0.60
18 months	580	64.61±0.68	65.49±0.72	70.74±0.77	28.48±0.69

Table 2. Least-squares means of body measurements and weight at lambing

Effects	N	Length (cm)	Height (cm)	Girth (cm)	Weight (kg)
μ	1043	65.18±0.67	65.45±0.66	71.50±0.71	27.87±0.62
Parity		*	*	**	**
First	288	64.77 ^a ±0.70	65.50 ^b ±0.70	70.13 ^a ±0.76	26.54 ^a ±0.66
Second	220	64.82 ^a ±0.71	64.04 ^a ±0.70	71.58 ^b ±0.76	27.64 ^b ±0.66
Third	251	64.84 ^a ±0.69	64.94 ^b ±0.68	71.80 ^b ±0.73	28.38 ^c ±0.64
Fourth	170	65.15 ^a ±0.72	65.38 ^b ±0.71	71.96 ^b ±0.77	28.71 ^c ±0.67
Fifth and above	114	66.31 ^b ±0.75	66.40 ^c ±0.74	72.04 ^b ±0.80	28.08 ^{bc} ±0.69

Mean with different superscript differed significantly; *, P<0.05; **, P<0.01.

Breed characteristics

Physical traits: The animals of Sonadi sheep are white with white and light brown face. The majority (82.5%) animals of Sonadi sheep had light brown face while 17.5% animals had white face. Horns are completely absent in the animals of this breed. All the animals of this breed had long and pendulous ear. The ear length at birth was observed as 11.84±0.63 cm, which increased to 30.84±0.76 cm at 15 months of age and thereafter it remains almost constant. The fore head of Sonadi sheep are convex type. The wattles and beard are absent in this breed of sheep. In majority of animals (98%) the wool are absent on face, leg and abdomen. The ear, leg and tail length were 11.84, 26.86 and 17.26 cm at birth which reached to 18.80, 42.31 and 31.72 cm at more than 18 months of age. The length of above physical traits was remained almost same till completion of life.

Body weight and conformation: The body length, height, girth and weight at birth was 32.86 cm, 37.50 cm, 35.87 cm and 2.05 kg which reached to 64.61 cm, 65.49 cm, 70.74 cm and 28.48 kg at 18 months of age (Table 1).

The overall least-squares means for weight at lambing was 27.87±0.62 kg. The effect of parity on all the body measurements and weight was significant. The weight of sheep at lambing was significantly lower during first, second, fifth and above lactations as compared to animals in third and fourth lactations. Significantly lower weight at lambing in sheep of first and second lactations may be due to the animals are in growing stage while in fifth and above lactation probably due to older age as compared to the animals of third and fourth lactations (Table 2).

Production performance: The milk recording was done

by test recording. The least-squares means for milk yield, lactation length, peak yield and days to attain peak yield was 36.60±1.12 kg, 179.62±2.35 days, 259.45±5.32 gm and 40.79±2.88 days, respectively. The overall least-squares means for fat was 8.24±0.03%. The means across time of milking indicated that fat percentage was significantly higher in evening milk as compared to morning milk. In fact this is due to higher milk production in morning than evening.

Reproduction performance: The overall least-squares means for age at first lambing was 724.17±9.48 days. The overall least-squares means for lambing interval, service period and dry period was observed as 291.88±6.80, 142.19±6.32 and 102.45±4.74 days, respectively.

SUMMARY

Sonadi sheep flocks are maintained by the farmers without scientific breeding under extensive managerial conditions on depleted pasture without any supplementary feeding in Sonadi breeding tract. Though, the performance of animals was satisfactory considering the performance reported by researchers on Sonadi as well as other breeds. This speaks of efforts of the farmers in paying individual attention to these animals by grazing them from 9 AM to 7 PM and providing them with best (within their resource) management, health care, nutrition etc. The performance can be improved further by providing improved Sonadi Ram with improving community pasture land. Farmers' participation is a must for conservation of any breed. Therefore, a breed society may be formed. For supply of pure Sonadi Ram in the tract for genetic improvement, at large scale, some pure Sonadi flock may be identified and

males produced from such flocks may be reared till maturity. After attaining sexual maturity, they may be distributed to farmers for breeding purpose. In context of above, ICAR, New Delhi has sanctioned a “ Mega Sheep Seed Project” at Livestock Research Station, Vallabhnagar that will definitely be helpful to the sheep breeder of the region. Further, efforts are needed for providing enough market

facilities and remunerative prices of the wool and other sheep products. This will create farmers interest in rearing of this breed in its present form.

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