

Research Article

STUDY OF SPERMATOLOGICAL CHARACTERISTICS OF OSMANABADI BUCK

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ABSTRACT

The experiment was conducted at the university research farm of Sundaesan School of Animal Husbandry and Dairying, Sam Hingginbottom Institute of Agriculture, Technology and Science, Allahabad, U. P., India (Deemed University) on the Osmanabadi breed of goat kept in the University farm for research purpose. The bucks were managed under semi intensive system of where they are allowed to graze on the land during the day and return to the flock in the evening, they are managed by highly skilled personnel for breeding purpose. Twelve Osmanabadi bucks aging from 2-5 years with body weight 42-46kg were selected for this study. Scrotal circumference was measured using measuring tape. Scrotal volume was measured. Semen was collected from each buck twice a week for two (2) months in the month of October and November by using artificial vagina method. Each ejaculate was critically evaluated for volume, colour, consistency, density, concentration, mass activity, motility, live and dead sperm count and abnormal sperm count. The following result was observed during the present study
The average values for scrotal circumference and scrotal volume in Osmanabadi bucks were $26.675 \pm 0.537\text{cm}$, 173.06337c.c and the testicular length and breadth of the right testicle as 8.721 ± 0.91 and $5.875 \pm 0.18\text{ cm}$ and the left testicle as 9.312 ± 0.13 and $5.775 \pm 0.24\text{ r}$, concentration, live sperm% and abnormal sperm % were $1.01. \pm 0.012\text{ml}$, 84.22 ± 1.23 , $3078.61 \pm 24.52\text{ million per ml}$, 69.62 ± 1.967 and $6.03 \pm 1.72\%$. The morbidity was 2.96 ± 0.39 the semen colour was creamy white and the density id high, the semen consistency is thick.

Keywords: *Buck, Osmanabadi, Scrotal Circumference, Semen and Artificial Vagina*

INTRODUCTION

Spermatological investigation of buck provides useful information about the sexual health as well as their reproductive performance. Osmanabadi is one of the famous breeds of Maharashtra well distributed in eight districts of Marathwada region. The breed is reared for mutton production. Traditional goat keepers, marginal farmers, landless laborers and tribal communities are the professional goat keepers in this region.

Evaluation of the male for sound breeding is based on the combination of information obtained from clinical and andrological examinations. In andrological and spermatological evaluation is of great importance, since it is significantly correlated with reproductive activity (Skinner, 1970; Elwisy and Elsawaf, 1971). Very less information on morphological characteristics of semen of Osmanabadi buck is available. Therefore, to know the various factors that affect testes characteristics were considered for present work with objective such as to study the semen characteristics in Osmanabadi bucks.

MATERIALS AND METHODS

The experiment was conducted at the university research farm of Sundaesan School of Animal Husbandry and Dairying, Sam Hingginbottom Institute of Agriculture, Technology and Science, Allahabad, U. P., India (Deemed University) on the Osmanabadi breed of goat kept in the University farm for research purpose. The bucks were managed under semi intensive system of where they are allowed to graze on the land during the day and return to the flock in the evening, they are managed by highly skilled personnel for breeding purpose.

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Twelve Osmanabadi bucks aging from 2-5 years with body weight 42- 46 kg were selected for this study. Scrotal circumference was measured at the greatest diameter of the scrotum using measuring tape. Scrotal volume was measured by holding the scrotum at its neck in the water filled container and the volume of replaced water was measured by adding the measured quality of water to the water filled container. Length, breadth and thickness were also measured. Semen was collected from each buck twice a week for two (2) months by using artificial vagina method. Each ejaculate was critically evaluated for volume, colour, consistency, density, concentration, mass activity, motility, live and dead sperm count and abnormal sperm count by using standard procedure.

RESULTS AND DISCUSSION

Table 1: Testicular Measurement

S/N	Parameter	Values
1	Scrotal Circumference	26.675±0.537
2	Scrotal Volume	173.00±6.337
3	Testicular Measurements	
	Right Testicle	
	Length	8.975±0.110
	Breadth	5.775 ±0.278
	Thickness	5.625 ± 0.228
	Left Testicle	
	Length	9.37 ±0.025
	Breadth	5.425 ±0.295
	Thickness	5.53 ±0.39

Table 2: Semen Characteristics

S/N	Parameter	Values
1	Volume	1.01.±0.012
2	Colour	Creamy white
3	Consistency	Thick
4	Density	DDD
5	pH	6.75±0.012
6	Morbidity (%)	2.96±0.39
7	Motility (%)	84.22±1.02
8	Total sperm (Million per ml)	3078.61±24.53
9	Live sperm count	69.62±1.97
10	Abnormal sperm count	6.03±1.17

Discussion

The scrotal circumference and testicular measurements observed during the present study are in close approximation with Parandeker (1987). He recorded. Scrotal circumference as 27.75±0.23 and testicular length and breadth of the right testicle as 8.721±0.91 and 5.875 ± 0.18 cm and the left testicle as 9.312±0.13 and 5.775 ± 0.24 respectively. The system of management has non-significant effect on breadth of testes has also been recorded by Kulkarni (2003) for Osmanabadi and crossbred bucks. In Osmanabadi buck the scrotal volume is not reported in the research. While Puranik *et al.*, (1993) reported the scrotal volume almost similar to the present research as 173.00±6.337 in the present study it was recorded as 173.00±6.337cm and right tecticular length, breadth and thickness as 8.975±0.110,5.775

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± 0.278 and 5.625 ± 0.228 respectively and the left testicular length, breadth and thickness as 9.37 ± 0.025 , 5.425 ± 0.295 and 5.53 ± 0.39 respectively.

The volume of semen is recorded as 1.01 ± 0.012 ml in the present study which is higher than that report of Puranik *et al.*, (1993) who reported it as 0.56 ± 0.033 but very close to Baviskar (1985) who reported it as 1.15ml in the same breed of Osmanabadi buck.

The colour and consistency of the semen sample were found to creamy white and thick which is similar to the earlier report by Puranik *et al.*, (1993). The semen density is high. The PH of the semen sample was recorded as 6.55 this finding is lower than that of Puranik *et al.*, (1993) who report it as 6.55. Morbidity of the semen sample is recorded as 2.96 ± 0.39 which is lower than that of Puranik *et al.*, (1993) who report it as 3.36. Motility found to be 84.22 ± 1.02 which is similar to the report of Parandekar (1987) as 84.45%. Total sperm count was recorded in the present study as 6.03 ± 1.17 .

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