IJAR 18(1), 1997; 70-72

Seasonal Variations in Seminal Characteristics of Patanwadi Ram*

S.D. DABAS, B.N. SUTHAR and F.S. KAVANI

Department of Gynaecology and Obstetrics
College of Veterinary Science and Animal Husbandry
Gujarat Agricultural University
Sardar Krushinagar, 385 506, Gujarat

ABSTRACT

A total of 150 ejaculates were collected at weekly intervals during pre-breeding, breeding and post-breedng seasons from six native Patanwadi rams of 2-4 years of age to study the physical seminal characteristics. The mean values for different semen characteristics were : Volume of ejeculate 0.96±0.03, ml; pH 6.75±0.02; sperm concentration 2735.8±0.04 millions / ml; dead sperm per cent 8.9±0.02 and abnormal sperm per cent 7.9±0.01. The colour and consistency in most of the samples was either creamy thick (48%) or creamy white thick (42.66%). The percentage of samples having mass activity +++, ++++ and +++++ were 36.66, 28.66 and 13.53 per cent, respectively. Season had a significant effect on mass activity, pH, sperm concentration, dead and abnormal sperm percentage.

———x———x———

Information on seminal characteristics of Patanwadi rams in different seasons is meagre. Seasonal variation in semen characteristics of the native Patanwadi rams has been studied in the present communication.

MATERIALS AND METHODS

Six native Patanwadi rams, 2 to 4 years or age, were used for the study. The rams were maintained under identical conditions of housing management and feeding. A total of 150 collections were taken from all the six rams at weekly interval during prebreeding (February to March, S_1), breeding (April to Second Week of June, S_2) and post-breeding (3rd week of June to end of July, S_3) seasons.

The total volume of ejaculate, colour and consistency of semen, mass activity, initial pH of semen, sperm concentration, percentage of dead and abnormal sperms were estimated adopting standard procedures (Herman and Madden, 1953). Standard statistical methods were used to interpret the results (Snedecor and Cochran, 1967).

RESULTS AND DISCUSSION

The mean volume recorded in the present study was comparable to the values reported by Mehta *et al.,* (1972) in Malpura, Rodricks *et al.,* (1983) in Nilgiri rams. However, much higher values of 1.45 ml reported by Mittal and Ghosh (1981) in Marwari rams may be due to breed characteristic. The observed differences in the volume obtained between the seasons were non-significant. Similar non-significant seasonal differences were observed by other workers (Sahni and Roy, 1969; Pareek *et al.,* 1970).

The colour and consistency of semen was either creamy thick or creamy white thick in most of the samples. Creamy white thick semen was observed as 42.86, 37.87 and 50.00 per cent in pre-breeding, breeding and post-breeding seasons, respectively. Whereas, creamy thick semen

* Part of M.V.Sc. Thesis of Ist author.

was observed as 67.14, 50.00 and 35.71 per cent, respectively in three different seasons.

The mass activity of ram semen was ++++ or +++ in majority of samples. Mass activity having score ++++ was observed in 28.66 per cent samples whereas mass activity having score +++ was observed in 36.66 per cent. These findings of mass activity fall within the range of the findings of Singh *et al.,* (1976). Mass activity having +++ score was found as 40.47, 27.27 and 47.41 per cent during prebreeding (S_1), breeding (S_2) and post-breeding (S_3) season, respectively whereas, ++++ mass activity was found as 26.19, 33.33 and 23.80 per cent, respectively. The seasonal difference were found to be significant.

The pH of semen was found more acidic during breeding season and significantly different from pre-breeding and post breeding seasons. Similar significant seasonal variations were observed by Pareek *et al.,* (1970) in different breeds of rams however, Patil and Raja (1978) reported non-significant seasonal variations in pH of ram semen.

The sperm concentration recorded was significantly higher ($P < 0.01$) during breeding season as compared to prebreeding and post-breeding seasons. Similar significant seasonal variations were recorded by Sinha *et al.,* (1985).

The dead sperm per cent was lowest in breeding season and it significantly differed from the rest of the two seasons. Similar significant seasonal variations were also recorded by Saxena and Tripathi (1986).

The abnormal sperm per cent (6.3±0.00) was lowest during breeding season and differed significantly from rest of the two seasons. Similar observations were also recorded by other workers (Patil and Raja, 1978 and Sinha *et al.,* (1985). However, Saxena and Tripathi (1986) reported non-significant seasonal variations in different breeds and different climatic conditions.

Acknowledgements: The authors are highly thankful to the Principal, College of Veterinary Science and Animal Husbandry and the Research Scientist, Livestock Research Station, Gujarat Agril. University, Sardar Krushinagar for providing necessary facilities.

REFERENCES

Herman, H.A. and Madden, F.W. (1953). Artificial insemination of dairy cattle. A Hand Book and Laboratory Mannual. Lucas Brothers, Columbia, M.O.

Mehta, P.R., Toshniwal, S.N. and Homode, J. (1972). Norms of semen of rams of Russian Merino, Malpura and their cross-breds reared under semi-arid conditions. Indian Vet. J. *49:* 1000-1007.

Mittal, J.P. and Ghosh, P.K. (1981). Male reproductivity characteristics of sheep in the Indian arid zone. J. Agric. Sci. Camb. *97:* 313-318.

Pareek, P.K., Hunzru, O.N. and Dwarkanath, P.K. (1970). Some studies on the seasonal variation of total ascorbic acid content and its congeners of semen in relation to some of the seminal parameters. Indian Vet. J. *47:* 46-53.

Patil, R.V. and Raja, C.K.S.V. (1978). Effect of season on the semen characteristics of Malbari bucks. Indian Vet. J. *55:* 761-766.

Rodricks, I.M., Iyue, M. and Mani, V. (1983). Studies on semen characteristics of Merino, Nilgiri and their crosses. Cherion. *12: 3:* 158-161.

Sahni, K.L. and Roy, A. (1969). Influence of season on semen quality of rams and effect of dilutors and dilutions of *In vitro* preservation. Indian J. Anim. Sci. :*39:* 1-14.

Saxena, V.B. and Tripathi, S.S. (1986). Seasonal effects on sperm morphology of Nali rams. Indian J. Anim. Sci. *56:* 294-295.

Singh, B., Ram, S. and Balaine, D.S. (1976). A note on studies on factors affecting seminal traits in Nali rams. Indian J. Anim. Sci. *49:* 916-920.

Sinha, N.K., Wani, G.M. and Sahni, K.L. (1985). Effect of age and season on certain characteristics of Muzaffarnagri rams. Indian J. Anim. Hlth. *24: 1:* 45-48.

Snedecor, B.W. and Cochran (1967). Statistical Methods, 6th edn. Oxford and I.B.H. Publishing Co., Calcutta, Bombay and New Delhi.