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SHORT COMMUNICATION

Effect of preputial washing on seminal characteristics and bacterial load in buck semen

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ABSTRACT

Semen was collected through artificial vagina from 10 Sirohi bucks 20 minutes after washing of preputial sheath with 0.9% sterile saline solution in one week and without washing in the next week. A total of 60 ejaculates comprising 30 each for washing and without washing were used to study the seminal characteristics and bacterial load. There was no significant effect of washing of preputial sheath on reaction time and seminal characteristics like consistency, mass motility, dead spermatozoa(%) and abnormal spermatozoa. Bacterial load was significantly ($p<0.05$) more (23.55×10^2CFU/ml in 100 dilution) in unwashed group than in washed group (19.95×10^2 CFU/ml).

Key words: Preputial washing, buck semen, bacterial load

Bacterial contaminants in semen adversely affect the seminal characteristics as well as the fertility to a great extent in any livestock species. The main source of bacteria present in the semen of healthy animal is prepuce and its contents are mixed with the semen during ejaculation (Hare, 1985). Since the animals specially small ruminants are reared on kachcha/soil flooring, contamination of the preputial sheath is bound to occur which needs to be minimized by adopting certain measures like washing of the preputial sheath before semen collection (Naidu *et al.*, 1991). Considering the scanty information available on the aspect, the present study was designed and undertaken.

Present study was undertaken in adult Sirohi bucks maintained under semi-intensive system of management at Central Institute for Research on Goats, Makhdoom. The climate of the place was semi-arid. Bucks were housed in asbestos shed having kachcha floor with standard flooring space. Ten bucks were used in the present study during autumn and semen was collected using artificial vagina once per week with alternate techniques (washed and unwashed). Washing of preputial sheath was done with 0.9% sterile saline solution 20 minutes prior to semen collection in one week and in the next week semen was collected without washing from the same buck. A total of 30 collections were made in each group and seminal characteristics as well as bacterial load were evaluated. Bacterial load count was done by standard plate count method(Gerhardt *et al.*, 1981). The parameters included in seminal characteristics were volume, consistency, mass motility, dead and abnormal percentage of spermatozoa. The data were analysed as per Snedecor and Cochran (1980).

It was observed that the semen volume and percentage of dead spermatozoa were more (0.98±0.18 ml and 24.44±2.22%) in unwashed group as compared to washed group (0.86±0.07 ml and 15.65±1.01%), however, the difference was statistically non-significant. Reaction time was comparatively higher (34.4±1.99 sec) in washed group in comparision to unwashed group (29.3±0.98 sec). Consistency was almost similar in both groups and on its classification 80% was recorded under thick category and only 20% of medium category, while no ejaculate was found under thin category. Mass motility averaged 4.50±1.8 and 4.44±0.09 in unwashed and washed group respectively. Head abnormality was almost similar (<2%) in both the groups but tail abnormality (coiling) was significantly more in unwashed as compared to washed group (8.89 vs 3.09%) but the reason of difference is not clear.

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Sinha *et al.* (1995) recorded better seminal characteristics almost in all the parameters in unwashed group during moderate period (October-November and March) in Sirohi bucks but during autumn the results were almost similar as observed in the present study. They also recorded semen consistency of 92% in thick category during cool and moderate period and none in thin category.

Bacterial load averaged 23.55±2.03, 13.00±1.27 and 6.80±0.86 CFU/ml in 10^2, 10^3 and 10^4 dilution rate in unwashed group, whereas the corresponding figures in washed group was 19.95±1.01, 10.86±0.65 and 5.05±0.59CFU/ml respectively. The results revealed significantly ($p<0.05$) more bacterial load in unwashed group than the washed group. Naidu *et al.* (1991) in a similar study observed 80.9, 34.5 and 13.2 CFU/ml at 10^2, 10^3 and 10^4 dilution rates in prewash semen samples. Further after preputial washing they recorded the mean percentage of reduction in the number of colonies by 45, 55 and 94 percent respectively in the said dilutions. However, the overall bacterial load was much less in the present study as compared to Naidu *et al.* (1991). Gupta and Sinha (2001) observed almost similar findings in ejaculates collected without preputial washing in different goat breeds.

It may be concluded from the present study that preputial washing prior to semen collection is beneficial in minimizing bacterial contaminants of semen.

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