The present study was conducted on seminal characteristics of 2 Holstein Friesian (HF) crossbred bulls. The volume of semen for 2 HF bulls measured was in the range of 3.5-6.1 ml with an average of 4.70±0.159 ml and 4.76±0.167 ml respectively. On 0-5 scale mass activity for bulls was measured in the range of 2-4 with an average of 3.22±0.12 and 3.18±0.10 respectively. The initial motility was in the range of 67.24±2.59 and 66.80±2.28 respectively. This study revealed that individual variation, age, season and management affect the seminal characteristics.

INTRODUCTION

A number of studies on seminal characteristics of crossbred bulls have been conducted during last five decades. However, the seminal characteristics show variability in bulls all over the world. The seminal characteristics have been reported to be affected by various factors (Nadaraja, 1967, Bakshi, 1980 and Dimirci, 1989). Management has been an important source of variation in semen production in bulls. In present study, various factors which might affect the seminal characteristics in crossbred bulls have been discussed.

MATERIAL AND METHODS

This study was conducted on HF crossbred bulls maintained at department of Obstetrics and Gynaecology, College of Veterinary and Animal Science, Bikaner. The bulls were subjected to daily exercise in morning hours in a bull exerciser. Semen was collected twice a week with help of artificial vagina method.

RESULTS AND DISCUSSION

Volume: In the present study volume of semen for two crossbred bulls measured was in the range of 3.5-6.1 ml with an average of 4.70±0.159 and 4.76±0.167 respectively which resembles to those of Sharma et al. (1986), Tuli et al. (1988), Pangaonkar and Sharma (1989) who reported an average volume of 4.54±0.31, 4.6±0.40 ml for HF x H crossbred bulls and a group of 9 HF crossbred bulls respectively. Values lower than observed in present study have been reported by Bakshi, 1980 (3.2-3.5 ml for 75% HF), Raja and Rao 1983 (3.73±0.24 ml), Sagdeo et al. 1990 (2.23±0.18 ml for 75% Jersey, 3.73±0.24 ml for 62.5% Jersey crossbred). Similarly values higher than observed in present study have been reported by Pangaonkar and Sharma (1989) for two groups of 4 and 7 HF bulls which had fairly or poorly freezable semen (5.30±0.30 and 5.11±0.39 ml) respectively. Factors like individual variation, age, season and other management practices might affect the semen volume (Pangaonkar and Sharma 1989, Sharma et al., 1991).

Mass Activity: In the present study mass activity for the two crossbred HF bulls was measured in the range of 2-4 (on 0-5 scale) with an average of 3.22±0.12 and 3.18±0.10 respectively. The values reported in the present study are slightly lower than those reported by Nadaraja et al. 1967 (3.8±0.54), Sharma et al. 1990 (3.80±1.00), Baburao and Rao 1990 (3.48±0.17). Pangaonkar and Sharma (1989) adopted 0-3 scale and recorded value of 2.61±0.05, 2.30±0.07 and 2.60±0.07 of the three groups HF bulls which had good, fair, poorly freezable semen respectively which seems to be slightly higher than observed in present study. However, Sagdeo et al. (1992) reported values of 1.77±0.08 and 1.76±0.08.
and Suryaprakasam and Rao (1993) reported values of $1.20 \pm 0.27$ which are respectively lower than observed in present study. Mass activity seems to be depend upon the concentration and motility of spermatozoa in the semen sample these in terms might be affected by individual, age, season, management and collection procedure (Sagdeo et al., 1990 and Sharma et al., 1991).

Initial Motility: In the present study initial motility percentage for the two HF crossbred bulls measured was in the range of 30-83% with an average of 67.24±2.59 and 66.80±2.28% respectively. The values closely resemble with those of Roy et al. 1975 (62.68±0.71) Tuli et al. 1988 (67.86±1.86), Narsimha and Rama Rao 1966 (66.20±1.80%). Numerous workers reported values higher than the values of present study. Sharma et al. 1991 (69.16±3.22) Suryaprakasam and Narsimha Rao 1993 (69±1.44) Narsimha Rao and Rama Rao 1996 (73.9%). Similarly numerous workers reported values lower than the values of present study. Tuly et al. 1988 (59.29±1.70), Suryaprakasam and Narsimha Rao 1993 (51.00±11.63), Narsimha Rao and Ramaroa 1996 (43.3%). This semen trait is a measure of live progressively motile spermatozoa and factors affecting are same as those affecting mass activity.

Sperm concentration: In the present study sperm concentration (x 106/ml) for the 2 HF crossbred bulls was in the range of 800-2260 million per ml with an average of 1273.60±75.94 x 106/ml and 1378.80±74.84 x 106/ml respectively. These values closely resemble with those of Slaweta 1987 (1100±31.0), Demicri 1989 (1100), Narsimha Rao and Ramaroa 1986 (1274±52.00) million per ml. Numerous workers observed values higher than the values of present study. Oliveira et al. 1988 (1923±42.00) Suryaprakasam and Narsimha Rao 1993 (1498±97.89) million spermatoza per ml.

Similarly some workers reported values lower present study. Nadaraja 1967 (995±6.54), N'Diaye et al. 1990 (761) Sharma et al. 1991 ((954±129.97) x 106/ml) and higher ambient temperature volume of semen frequency of ejaculate affect the sperm concentration/higher ambient temperature depresses the spermatogenesis causing reduction in the concentration of spermatozoa.

Live percentage spermatozoa: In the present study, live percent spermatozoa in fresh semen of 2 HF crossbred bull measured in the range of 67.5-84.5% with an average of 76.14±1.066 and 72.73±0.74% respectively. The values closely resembles with those of Jaiswal et al. 1988 (75.4±0.70), Saxena et al. 1988 (79.21±1.54), Sharma et al. 1991 (75.00±2.50), Vyas et al. 1992 (79.86±0.98%).

Several workers observed higher than values observed in present study. Rao and Rao 1975 (85-88%), Pangaonkar and Sharma 1989 (85.35±1.07), Joshi and Kharche 1990 (88-91), Veerapondian et al. 1992 (80-85%). Similarly some workers reported values lower than reported in present study (Wells et al. 1975 (65±2.0%). Breed type significantly affect concentration of live spermatozoa.

Percentage normal acrosomes: In the present study normal acrosome in fresh semen of 2 HF crossbred bulls measured was in the range of 67.5-84.5%. With an average of 81.92±0.67% and 80.06±0.46% respectively. These values closely resembles with those of Wells et al. 1975 (79.0±9.00), Slaweta, 1987 (85.30±7.63), Nehring, 1988 (83.7±10.2%). Several workers reported higher than that of the present study. Sharma et al. 1991 (89.4±0.9%). Some workers observed values lower than that of observed in present study. Sharma et al. 1992 (74.05±1.15). The acrosomal integrity is
highly subjected to environmental and physiological changes and or stresses. Significant differences among bulls within each breed type affect the acrosomal integrity. (Wells et al., 1971).

REFERENCES