



TOTAL AEROBIC BACTERIAL LOAD IN BULL SEMEN

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Abstract: A total of 34 HF bull semen samples were screened and subjected to total aerobic bacterial load estimation. The bacterial load was estimated for the neat, extended and frozen bull semen samples to assess the bacterial contamination of semen during handling, processing and storage of the semen samples. In the present study, the bacterial load of the frozen semen samples was found to be within the BIS standards.

Key words: Aerobic Baterial load, Bull semen, Bacterial contamination.

Introduction

The microbes because of their ubiquitous presence have ample access to contaminate the semen during collection, processing and preservation stages. The semen though free from specific pathogens gets contaminated subsequently sometimes even under strict hygienic conditions. Presence of opportunistic pathogenic organisms may compete along with the spermatozoa for nutrients (Salisbury *et al.*, 1978) and may cause reproductive disorders (Eaglesome *et al.*, 1992) when used. The production of frozen semen of a larger dimension needs a quality control service to maintain supply of good quality frozen semen and to attain a good quality of frozen semen, microbial analysis should be carried out at each and every step of processing and the present study was undertaken to estimate the bacterial load of semen at various stages of semen processing and suggest suitable measures to control the bacterial load.

Materials and Methods

A total of 102 semen samples of HF bulls, procured from Nandini sperm station, Kakolu, Bangalore were used for the present study. The bulls from which the semen samples were collected were in good general and reproductive health and free from any known specific diseases. The bacterial load

of the semen samples was estimated by pour plate method (Cruikshank *et al.*, 1975) after inoculating onto the Standard plate count agar (Hi-media Lab, Bombay). The counts were made after 48hr of incubation at 37°C using a Quebec colony counter. The bacterial load was expressed as CFU per dose of semen (per ml of neat semen).

Results and Discussion

In the present study, none of the neat semen samples were negative for bacterial growth. While in extended semen samples, five out of the 36 (13.88%) samples were negative for bacterial growth/ sterile. Out of the 34 frozen thawed semen samples, 29 samples (85.29%) showed growth of bacterial colonies, whereas 7 samples (20.58%) were sterile.

The total aerobic bacterial load of the neat, extended and frozen semen samples as observed in the present study (Table 1) were similar to those reported earlier.

Contamination of the semen with bacteria can happen at various stages of processing and handling. In view of this and the need for effective monitoring of semen processing it is felt important to evaluate the bacterial load. This approach enables to check the contamination points and to recommend appropriate measures to overcome the problems associated with such contamination.

Table 1: Bacterial load of neat, extended and frozen semen samples (Average of 6 collections)

Bull No.	Mean \pm SE of bacterial load of neat semen (Cfu/ml)	Mean \pm SE of bacterial load of extended semen (Cfu/ml)	Mean \pm SE of bacterial load of frozen semen (Cfu/ml)
1	1700 \pm 4.10	150 \pm 0.67	450 \pm 2.30
2	4800 \pm 12.00	220 \pm 0.60	180 \pm 0.65
3	3300 \pm 7.50	170 \pm 0.42	83 \pm 0.31
4	1100 \pm 3.80	240 \pm 0.93	169 \pm 0.24
5	1900 \pm 6.00	370 \pm 0.56	550 \pm 2.40
6	7500 \pm 56.00	240 \pm 0.51	140 \pm 0.75

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