CHAPTER – 13

Demonstration of semen collection and evaluation

Objectives

a) To learn semen collection procedures.

b) To understand the semen analysis.

Introduction

The inspection and handling of semen is considered a key and essential step for assessing fertility and the successful use of semen. For use in artificial insemination, there are some pre-requisites that the semen should pass some evaluation criteria. The ideal semen analysis would be simple and effective, allowing the breeding capacity of a particular ejaculate to be predicted. A fertile ejaculate must meet certain semen parameter quality standards, such as progressive motility, normal morphology, active energy metabolism, structural integrity and functionality of the membrane, penetration capacity and optimum transfer of genetic material.

Points to remember

1. Semen is collected by several methods; the most common is the use of an artificial vagina.
2. After the bull has mounted on a dummy, his penis is diverted into the artificial vagina and once the bull ejaculates the semen in the collection tube is immediately transferred to the semen analysis laboratory.
3. General examination of semen includes volume, colour, odour and appearance.
4. Routine microscopic examination includes estimation of mass activity, individual motility, viability, acrosomal integrity and membrane integrity.
5. Several advanced techniques using fluorescent dyes are available nowadays.
6. Using Computer assisted semen analyzer (CASA), one can measure several motility parameters, which cannot be done by normal microscopy.

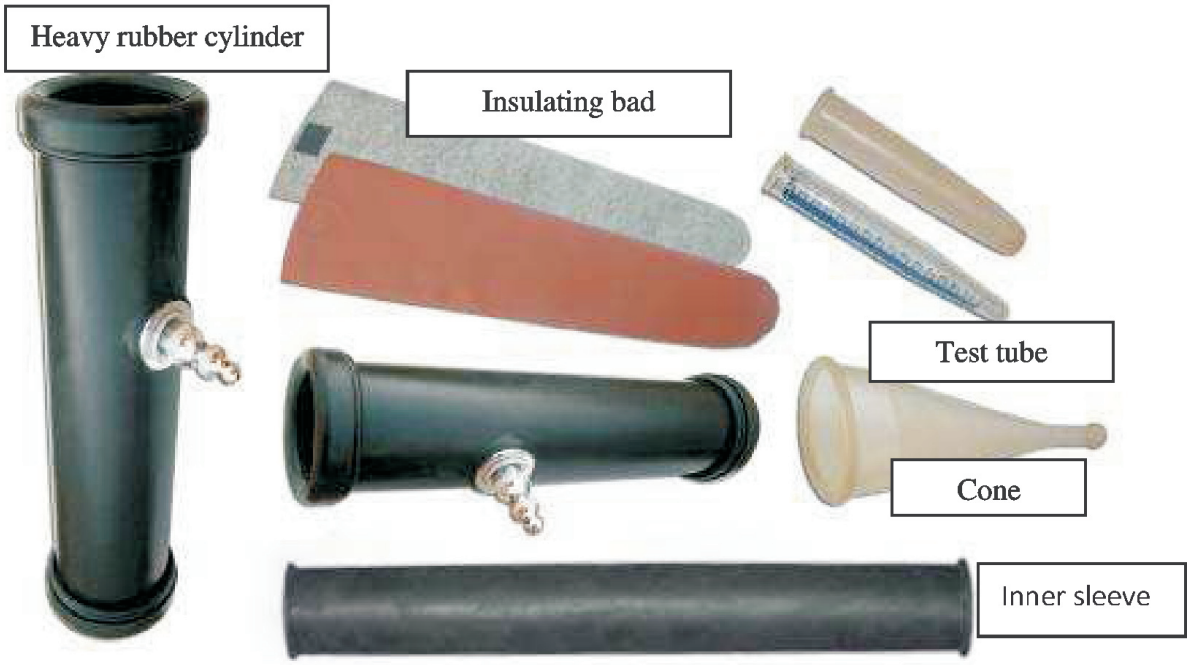

Fig. 13.1. Giemsa stating method for assessment of acrosome integrity

Fig. 13.2. Figure: Semen collection from bulls using artificial vagina

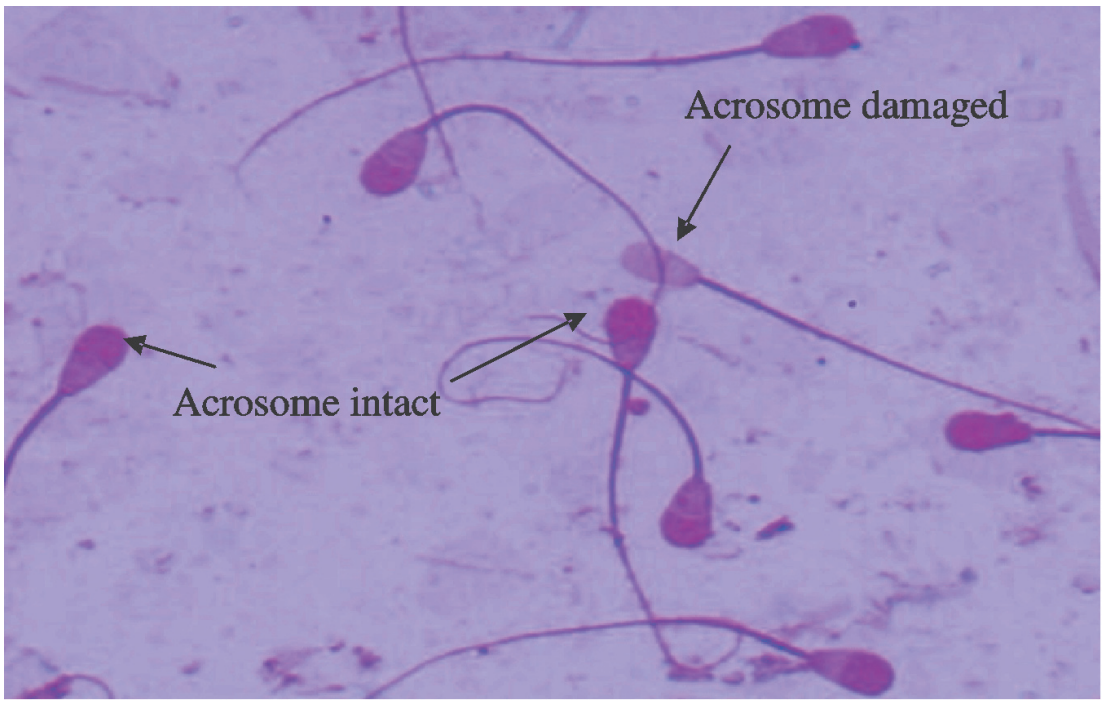

Fig. 13.3. Giemsa stating method for assessment of acrosome integrity

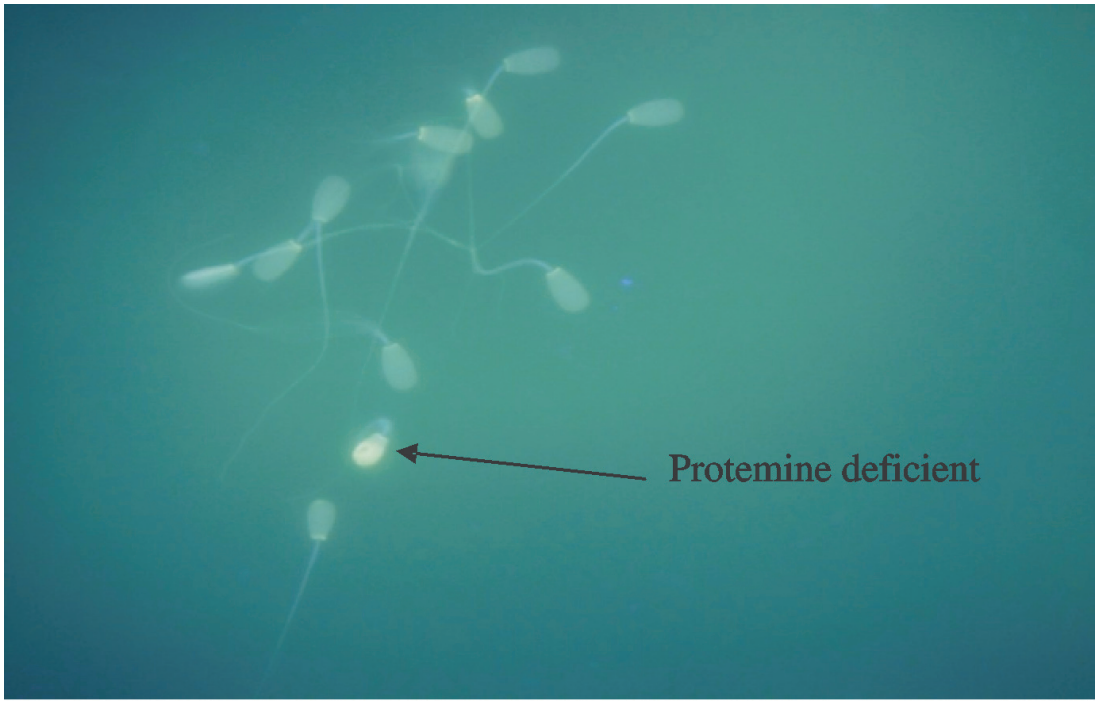

Fig. 13.4. Chromatin integrity assessment using fluorescent staining

Sample questions

1. Write the different parts of artificial vagina.