

## COLLECTION OF SEMEN

Various methods of collection of semen have been devised from time to time.

### Method of collection

- 1- Artificial Vagina (AV)
- 2- Transrectal Massage (T-RM)
- 3- Electro-Ejaculator (EE)
- 4- Epididymal semen
- 5- Manual application (Dogs)
- 6- The gloved hand technique (Boar)
- 7- Aspiration from vagina of a recently bred cow

The three most common methods are: (1) Use of an Artificial Vagina (A.V.), (2) -by Electro-stimulation and (3) by massaging the ampulae of the ductus deferens through rectal wall. Suitability of a particular method depends on the type and condition of a species, e.g., AV is applicable on most of our domestic animals but definitely not on poultry, where the massage method is the only practical solution to get ejaculation. For sheep and goat, apart from all the three methods as mentioned, collection of semen from the vagina of a ewe is also best done at the time when the ewe is out of heat and its vagina is more apt to be dry and free from mucus.

### The collection of semen sample should be:

In the morning

The room must be clean, suitable and anti-slip.

### Purpose from collection:

Evaluation

Increases economic rewards

Evaluate breeding soundness

Breed artificially

Storage

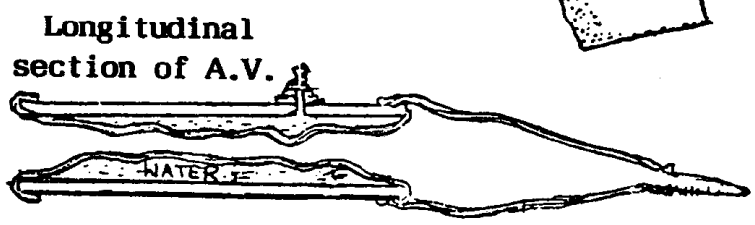
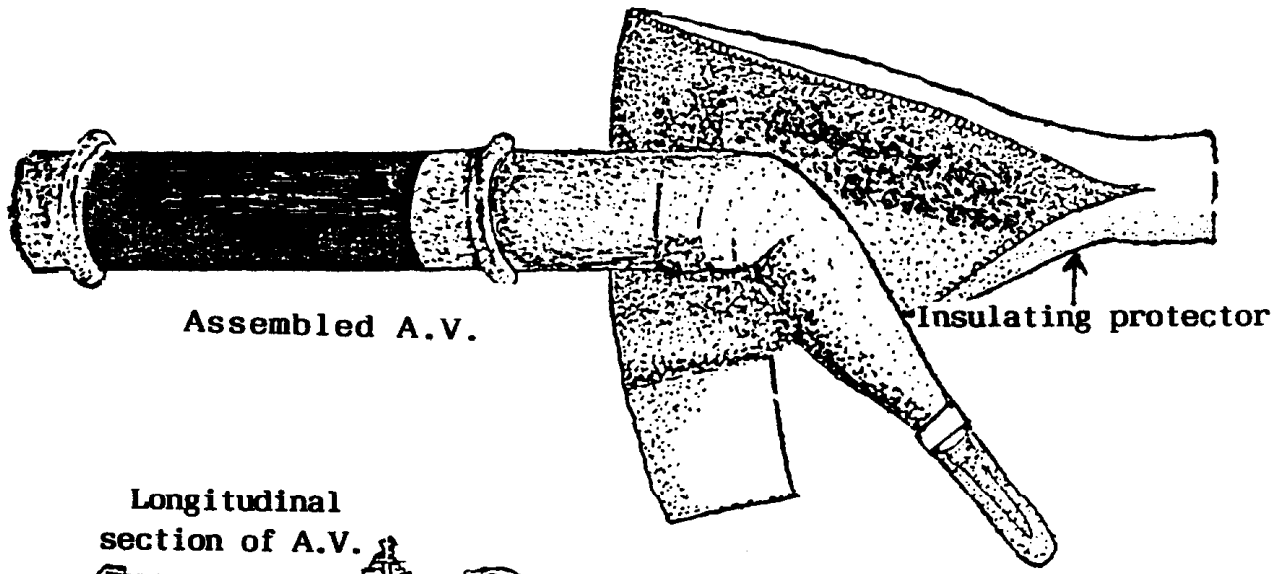
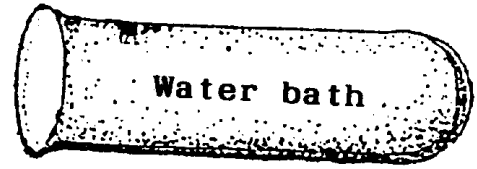
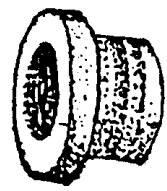
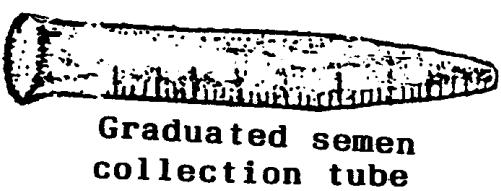
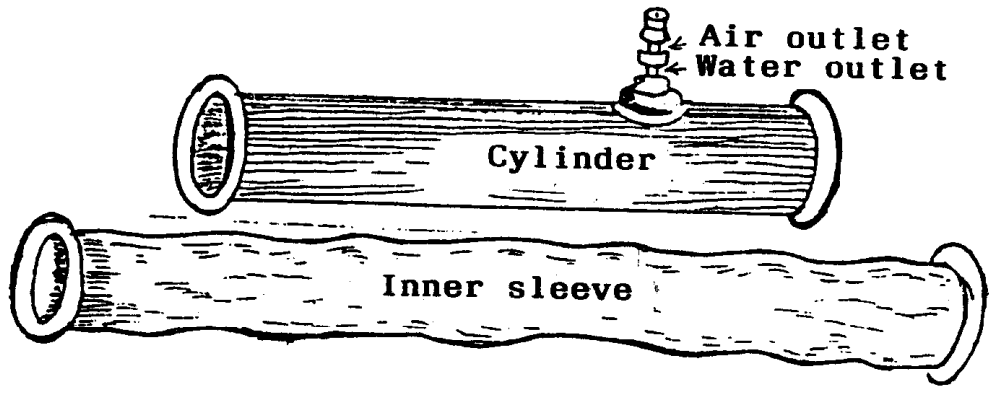
Increase bred animals  
Reduce disease transmission

### **Artificial Vagina Method (AV) Semen collection by AV in Cattle and Buffalo**

It has been proved to be the best method and is now most commonly used. There are different kinds of artificial vagina for different classes of animals' conditions of which are almost exactly similar to that of the natural vagina. The one for cattle and buffaloes consists of (i) an outer heavy rubber cylinder, (ii) inner sleeves of rubber, (iii) the semen receiving cone, (iv) semen collecting vial made of glass or plastic which may be graduated. Prior to collection all these parts are cleaned, sterilized and assembled into artificial vagina. The inner sleeve is put into the outer cylinder and both the ends of inner sleeve are reflected over the cylinder forming a water tight space between them and water at 40 - 50 °C is filled in there. The cone along with the attached vial is then slipped over one of the ends of this water jacketed barrel and then tightly secured with the help of rubber bands.

The vial and cone are then invaginated into the artificial vagina and 3" to 4" at the open end and are lubricated with sterilized jelly. The temperature of the water to be taken depends upon the liking of the bull, and season of the year.

The modern artificial vagina types are also provided with an airscrew along with the water screw, which can be used for blowing the air between the two layers to create the desired pressure. The temperature of the artificial vagina is more important and should always be checked before making the collection. Too high a temperature may cause injury to the penis and the bull may refuse to serve in future, whereas at lower temperature, there may not be complete ejaculation and the whole ejaculate may be contaminated with urine. Prior to collection, bulls are usually allowed to become excited by bringing during collection.



### **Advantages of this method**

- practically the whole ejaculate is collected in uncontaminated and natural stage.
- It is free from the extraneous secretions.
- A sterile condition of the apparatus ensures disease control.
- The viability of the sperm is better.
- No female is needed if dummy is success.

### ***Disadvantages of this method***

- Occasionally it is difficult to get the males to serve the artificial vagina.
- The apparatus involved is slightly costly and requires technical hands.

### **The following Precautions should be taken while collection of semen is made by using AV.**

- Protect the collection vial from sunlight by placing a black cover immediately after collection.
- Avoid contamination of the semen from water, lubricating jelly or other harmful substances.
- Avoid cold shock by providing adequate protection for the collection tube and funnel.

### **Electro-ejaculation**

The technique was first adopted in 1952 by Batelli for collection of semen from guinea pigs. By this method ejaculation of semen is brought about by inserting a probe or electrode in sire's rectum and stimulating nerves of the reproductive system by gradually increasing voltage in rhythmic fashion with a rheostat for a short period. Successful use requires skill, experience, patience and the knowledge of individual requirement of the stimulation.

The method is used on males of certain species where the use of AV is not possible not practical. The widest use of electro-ejaculator has been observed in obtaining semen samples from large number of bulls and rams during examination for breeding soundness. The method is also used to collect semen from bulls for AI purpose when the bull is extremely slow in serving the AV or physically incapable of mounting.



### *Advantages*

1. Semen can be collected from males that are too young or old or unable to mount due too weak or injured legs.
2. No female or dummy is required for collection.
3. Less chance of contamination.

### *Disadvantages*

1. The methods are highly technical and need considerable skill and practice.
2. The semen generally gets contaminated with urine.
3. Some males resist too much to this method and refuse collection.
4. Sciatic nerves are temporarily affected during the operation but is relatively minor if the electrodes are kept over the ampullar region.

### **Massage Method**

The method involves the simplest technique of semen collection by massaging the seminal vesicles and ampulae. Undoubtedly the collector should have a considerable training to adopt the skill. This method is commonly used to collect semen from cock, turkey (tom) and dog.