

An Overview and Importance of Artificial Insemination Technique

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Introduction

Artificial insemination is a method by which living sperm is collected from the male and inserted into the female reproductive tract at the right time with the help of tools. This has been found to cause normal interest. In this procedure, the sperm is inserted into a woman's body by placing her part in a collected or cleansed form in the cervix or uterus by mechanical means at the right time and under the most hygienic conditions. The first scientific study of pet transplants was performed on dogs in 1780 by an Italian scientist, Lazanno Spalbanzani. His experiments proved that the fertilizing power resides in the spermatozoa, not in the semen. A few additional studies under the conditions of the research center have helped this method to be used in international trade including India.

Artificial insemination is not just a new form of female reproduction. Instead, it is a powerful tool that is widely used to improve livestock. In ancestral implants made of high quality germplasm of bulls can be used effectively without regard to their location in remote areas. With the use of artificial insemination, there will be a significant reduction in both genital and non-genital infections in the farm cell.

Artificial insemination, the implantation of sperm into the vagina or cervix by any means other than sexual intercourse. This procedure is most commonly used in animal reproduction and is applied to humans when the male is infertile or weak or when the couple suffers from unexplained infertility (when the cause of infertility is not known). Female genital mutilation can also be used by women or men in same-sex relationships who wish to have children of their own. The great advantage of artificial breeding is that the desirable traits of a bull or other domesticated male animal can be passed on more and more offspring

than when that animal is mated with females in a natural way. Tens of thousands of calves or more have been bred each year using a single breed. In the actual process, the sperm is found in the male animal and, after purification, is very cold, after which it can be stored for a long time without losing fertility. For use, the sperm is melted and inserted into the vagina of a female animal.



Heat Indications: -

The various heat signs are

- The animal will be happy. The animal will be restless and frightened.
- The animal will bark regularly.
- The animal will reduce the amount of food it eats.
- Abnormal movement of the sacral limbo region will be observed.
- Hot animals will lick other animals and smell other animals.
- Animals will try to mate with other animals
- Animals will stop when another animal tries to ride. This period is known as dry heat. This goes on for 14-16 hours.
- Frequent maturation (urination) will be observed.
- A clear discharge of mucus will appear on the vulva, sometimes it will be a cord as if the mucus will appear to be attached near the valves.
- Inflammation of the valva will be noticeable. Constipation and hyperaemia of the membrane.
- The tail will rise.
- Milk production will decrease slightly
- With Palpation, the uterus will become turgid and the cervix will open.

The Benefits of Performance Installation:

- There is no need for the care of a breeding bull; hence the cost of keeping a breeding bull is saved.
- Prevents the spread of certain diseases and infertility due to genital herpes.
- Eg: contagious abortion, vibriosis.
- Regular inspection of sperm after collection and regular sterilization to locate internal males and ensure good reproductive function.
- Interest testing can be done early.
- Sperm of the desired size can be used even after the cereal dies.
- Collected sperm can be transported to cities or rural areas for fertilization.
- It breeds animals with great differences in size without injuring any animal.
- It is helpful to inject animals that do not want to stand or receive a male during oestrum.
- Helps to keep accurate breeding records and cawing.
- Increases pregnancy rate.
- It helps to keep records better.
- Old, hard and damaged particles are used.

Disadvantage of A.I:

- Requires well-trained operation and special equipment.
- It requires more time than natural resources.
- Requires structural knowledge and production function on the operator side.
- Improper cleaning of equipment and hygiene conditions can lead to lower interest rates.
- If the bull is not properly tested, the risk of genital warts will increase.
- The bull market will be reduced, while the higher bull market will be increased.

Ways to Collect Male

- The use of artificial vagina
- By electro-stimulation method.
- By massage the duct sample we differentiate by rectal wall.
- The best way to collect sperm is to use a safe artificial penis in the siren and collector as well.



Woman's Way of Being Made

The synthetic vagina has the following components:

- 2”strong hard rubber is lost, open at both ends through the nostrils and inlet.
- Internal rubber sleeve or rubber line.
- Sperm that gets a cone or rubber cone.
- Sperm collection tube made of glass or plastic with cc stems and a fraction of 0.1 CC
- Protective bag before use to collect sperm all parts are thoroughly washed and disinfected properly, and assembled as an artificial vagina, a rubber line is inserted into the pipe; to turn both ends back by wrapping the back from either side of the opening, and tying with rubber bands. Now the space between the solid rubber pipe and the inner rubber line forms a water trap. The nostle at the end of the hose can be adjusted.

Some Parts of the Last Woman

Turn the string nut up or down. Artificial water jacket -vagina- is filled with hot water at a temperature of 45 ° C (113 ° F) by opening the nostle. The finished sperm collection tube is attached to a small end of the artificial vaginal tube, and fastened with a rubber band. The inside of the rubber lining on the front of the artificial vagina is smeared with sterile gel up to 3 to 4 inches long. The air is blown into the water jacket, creating pressure if, and the same is used with a rubber band, to mimic a natural vagina. The temperature of the artificial vagina should be checked, in each batch, and should mimic the natural vagina during ejaculation. If the artificial genitals should increase over time. If it is too cold the ejaculate may not be present after ejaculation, or even if the ejaculate is present; may be contaminated with urine, and may not be suitable for use.

Semen Collection Method (A.V.)

The cow or dummy is protected from creating the service. The combined artificial vagina is held at an angle of 45 ° from the side of the penis, and the push is at that angle. The artificial vagina is held with the left hand by the right hand; and when the bull rides the cow, the bull's trunk will be drawn by the operator, directing the prostate penis to the artificial vagina, and the bull releasing the clitoris.

The user should be careful not to touch the exposure of the penis. After ejaculation, the artificial genitals are removed from the penis and the airway is opened to release the pressure of the coat. Water from the jacket is also removed by opening the nose. This allows the ejaculate to flow from the cone to the sperm collection tube. The sperm collection tube is separated from the cone, attached to cotton wool, and taken to a laboratory for testing. The rubber cone and sperm collection tube can be protected from external contamination or heat or over, by covering it with a zipper closure bag.

Semen Storage

- The discovery that bovine sperm can be successfully treated and stored indefinitely has changed AI in cattle.
- In 1949, British scientists discovered that the addition of glycerol to expandable sperm improves sperm resistance. Glycerol works by removing water from the sperm cell before it freezes and prevents the formation of cellular ice crystals that can damage sperm.
- There are two ways to fertilize and store sperm: dry ice and alcohol (-100 degrees F) and liquid nitrogen (-320 degrees F). Liquid nitrogen is preferred because there is no evidence of reproductive decline with age. Fertility is gradually reduced in sperm stored in dry ice.
- Frozen sperm can be stored permanently if the temperature is maintained. Fresh, liquid sperm can be stored for 1 to 4 days at 40 degrees
- Sperm are usually stored in glass ampoules. Another option that seems promising is the French-straw.
- Artificial color is often added to sperm extensions to distinguish one type from the other. A thorough identification of the bull is required for each sperm container.
- Sperm freezing is done with a special diluent, which has the following structure.

- ❖ Sodium citrate dehydrates (angular) 2.4 y. 2.0 gm, 8.0 ml 25.0% volume 50,000 units 100 ml sperm Fructose Glycerol Egg Yolk Penicillin dilulent.
- ❖ Dihydro-streptomycin 50.0 mg per 100 ml of melted sperm.
- ❖ Pure water double glass 100 ml glass.
- The addition of glycerol to the diluent makes the cells more resistant to cold and ice, smaller and smoother forms and less damage to spermatozoa. Addition of fructose to soluble luprores to resist sperm in glycerol; and also provides food.
- Frozen sperm are packed in a single-glass glass bottle or plastic container at + 5 ° C.
- The final glycerol level should be 7.0 to 7.6% during freezing.
- Antibiotics are added to prevent germs and kill germs.
- Sperm should be carefully cooled so that the sperm can stay healthy. The final temperature dropped to 79 ° C or lower.
- Rapid cooling is performed for 3 to 5 minutes at 75 ° C with the help of atmospheric nitrogen. In the form of a slow crack, cooling is done at a rate of 1 ° C per minute from + 5 ° C to 15 ° C. From 15 ° C to 31 ° C at a rate of 2 ° C per minute. From -31 ° C to 75 ° C at an average of 4 to 5 ° C per minute. Therefore, taking a total of 40 minutes, further cooling to 96 ° C can be done as quickly as not necessary after freezing.
- Before freezing sperm diluted in an average of 3 to 5 hours or at least 16 to 20 hours, an hour in the refrigerator at 5 ° C.
- Liquid nitrogen plays an important role in keeping frozen sperm, at a temperature of 196 ° C for a long time.

Insemination Methods:-

There are different methods of reproduction in a variety of animals namely speculum method, vaginal method and recto vaginal method.

- Recto Vaginal Method
- How To Test
- Approval Method

Recto vaginal method: -

By using the vulva to 'the vagina and cervix and noticed by hand in the rectum that A. The gum reaches the cervix, and then the sperm is injected into the vagina, and after inserting the sperm the vagina is removed, empty grass and a sac. They are disturbed.

Spectrum Method: -

In this way the spectrum is inserted into the vagina, which provides an external route to the breeding site, and the speculum insertion tube is transferred to the speculum and sperm are inserted into the cervix.

Female genital tract: -

The hand is transferred to the genital area, and the fallopian tubes are led by the hand to the implant, where it is inserted. Here there is a risk of contamination and damage to the vagina.

Artificial Insemination Techniques

Cattle breeding are a skill that requires sufficient knowledge, experience and patience. Negative AI strategies can undermine all other attempts to detect pregnancy. Sperm should be inserted into the cow's vagina in the best possible position and at the best possible time to obtain acceptable levels of pregnancy. Early AI methods involved the insertion of sperm into a woman's genitals, as was possible in natural intercourse. Those methods are not satisfactory. Fertility is low and requires a large amount of sperm. Another method that gained popularity was the "speculum" method. This method is easy to read, but proper cleaning and disinfection is required, making it less likely to infect sperm than the method which is the most widely used AI method.

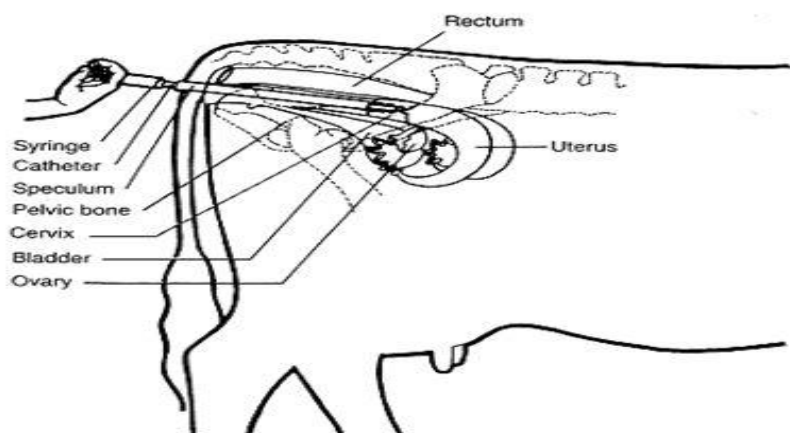


Fig. Artificial Insemination



In the recto-vaginal process a sterile, disposable catheter containing molten sperm is inserted into the vagina and directed to the cervix by hand with gloves on the rectum. An inseminating catheter passes through the perimeter of the cow's cervix to the uterus. Part of the sperm is inserted just inside the uterus and the remaining part is inserted into the cervix as the catheter is removed. Sperm excretion should be performed slowly and deliberately to avoid excessive sperm loss in the catheter. The uterine body is short; therefore, care should be taken not to penetrate deep which may cause physical injury. In preterm infants, the catheter should not be forced into the cervix as pregnancy is a possibility. Since research data show small differences in pregnancy rates when sperm are implanted in the cervix, uterine body or uterine horns, some people recommend incomplete penetration of the cervical canal and placement of sperm into the cervix.

The recto-vaginal process is very difficult to learn and practice is important for acceptable knowledge but the benefits make this method of reproduction much better than other known methods. With practice, a full-fledged surgeon quickly learns to connect the cervix over the catheter easily. If disposable catheters are used and proper sanitation procedures are followed, it is less likely that the infection will be transmitted from one cow to another.