

Procedure of AI

In cattle the safe and best method of insemination is "Recto vaginal method of insemination". Cow which is in heat is well controlled placing it in a Travis. The inseminator will get ready by wearing a plastic apron, gumboots and gloves. The semen straw after thawing (keeping the semen straw in warm water for a minute to convert the frozen semen into liquid and the sperms become motile) is loaded in a sterilized A.I. gum and is covered with a plastic sheath. The inseminator will insert the gloved left hand into the rectum after applying the soft soap or other lubricant on the glove the hand is inserted and will catch hold the cervix through rectal wall. The A.I gum loaded with semen straw is passed.

Through the vulva to 'vagina and cervix and observed with the hand in rectum that the A. I gum reaches the cervix, then the semen is deposited by injecting the gun, and after depositing the semen the gun is removed, the empty straw and sheath are disordered.

A practical recommendation for timing of insemination

Cow showing estrus	Should be inseminated	Too late
In morning	Same day	Next day
In afternoon	Morning of the next day or early afternoon	After 3 p.m.



Fig.2. Cross-sectional view of Recto-vaginal A.I.



1st Mithun AI calf born in the field of Khonoma

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Artificial Insemination (AI) in Mithun



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Artificial Insemination is also known as AI. It is a technique in which semen is collected from healthy mature and fertile male and deposited in to female genital tract (anterior vagina, cervix, uterus of fallopian tube) at a proper time using some external device or catheter. It is a process of making female animal pregnant without natural mating.

Artificial insemination is not merely a novel method of bringing about impregnation in females. Instead, it is a powerful tool mostly employed for livestock improvement. In artificial insemination the germplasm of the bulls of superior quality can be effectively utilized with the least regard for their location in faraway places. By adoption of artificial insemination, there would be considerable reduction in both genital and non-genital diseases in the farm stock.

Why AI?

Artificial Insemination (AI) has several advantages over natural mating which are as follows;

1. There is no need of maintenance of breeding bull for a herd; hence the cost of maintenance of breeding bull is saved.
2. As we know that inbreeding is the major problem in natural mating in Mithun due to its semi wild nature. Inbreeding caused several genetic abnormalities as well as infertility or sterility. AI eliminates the possibilities of inbreeding which arises due to natural mating with the same bull over a long period of time.
3. It prevents the spread of certain diseases and sterility due to genital diseases example contagious abortion and vibriosis.
4. By regular examination of semen after collection and frequent checking on fertility make early detection of inferior males and better breeding efficiency is ensured.

5. The progeny testing can be done at an early age.
6. The semen of a desired bull can be used even after the death of that particular bull.
7. The semen collected can be taken to the urban areas or rural areas for insemination.
8. It makes possible the mating of animals with great differences in size without injury to either of the animals.
9. It is helpful to inseminate the animals that refuse to accept the male at the time of estrum.
10. It helps in maintaining the accurate breeding and calving records.
11. Semen can be used on tens of thousands of females a year instead of the actual bull being only able to cover 30 females in a breeding season.
12. Job is less dangerous because there is not a potentially dangerous bull to handle after every breeding season.
13. The rate of genetic development and production gain can be increased, by using semen from males of high genetic merit for superior females.
14. Artificial Insemination can be used in conservation of rare breeds or endangered species.

Disadvantages of AI

1. Requires well-trained operators and special equipment.
2. Requires more time than natural services.
3. Improper cleaning of instruments and insanitary conditions may lead to lower fertility. If the bull is not properly tested, the spreading of genital diseases will be increased. There is only a 60 to 70% conception rate for artificial insemination than with using a fertile herd bull.
4. The operator needs to have adequate knowledge of heat

periods of female and know how to detect the female in heat then judge the time to do AI. There may be added stress involved when females have to be restrained-

5. Semen has to be stored properly otherwise it will become no longer viable; improper handling will also render it unviable.

Symptoms of Heat

The various symptoms of heat are

- The animal will be excited condition. The animal will be in restlessness and nervousness.
- The animal will be bellow frequency.
- The animal will reduce the intake of feed.
- Peculiar movement of limbo sacral region will b observed.
- The animals which are in heat will lick other animals and smelling other animals.
- The animals will try to mount other animals
- The animals will standstill when other animal try to mount. This period is known as standing heat. This extends 14-16 hours.
- Frequent maturation (urination) will be observed.
- Clear mucous discharge will be seen from the vulva, sometimes it will be string like the mucous will be seen stick to the near the pasts of vulva.
- Swelling of the vulva will be seen.
- 11 Congestion and hyperemia of membrane.
- The tail will be in raised position.
- Milk production will be slightly decreased.
- On Palpation uterus will be turgid and the cervix will be opened.