Artificial Insemination

Artificial insemination mean inseminated the female during the estrus artificially by using special technique by which the semen inject to the female genital tract.

Advantages of artificial insemination:

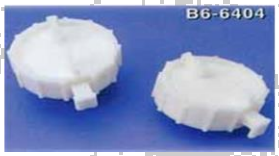
1. Increase the benefits from the excellent males which posse's high productive efficiency.
2. Covers the deficiency in good males of high productive genetic structures.
3. When breeding local females or small females or early puberty females it is better to use artificial insemination in order to get rid of injuries when using large heavy males to serve such females especially in bulls.
4. Knowing progeny testing of the male from the number of females inseminated from it each year.
5. Increase the economy of the owners because artificial insemination let them not to keep males within their herds.
6. Increase fertility percentage because of the continuous inspection of the seminal fluid before using in artificial insemination.
7. To get rid of diseases transmitted through the natural service such as *trichomoniasis* and *vibriosis* .
8. Helps in increasing of production of new generation of high producing females.

Necessary Equipment for AI

- AI Rod (gun)

- Long gloves

- Straw cutter



Water bath

- Water bath
- Sheath
- Lubricants
- Paper towels

Steps of artificial insemination:

1) Preparing to Inseminate:

- The cow must be in estrus or heat before she is artificial inseminated.
- The cow should be inseminated 12 hours after the first signs of estrus.

2) Thawing the Semen:

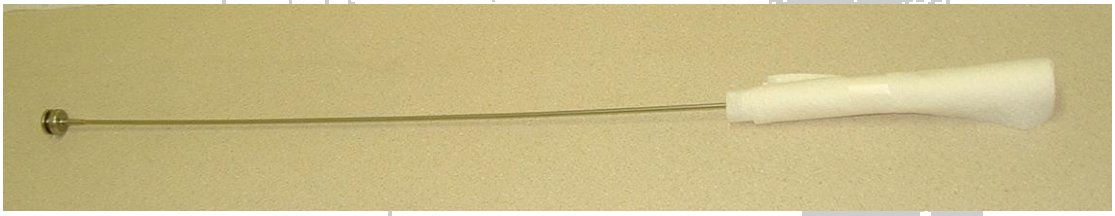
1. The straw must be carefully removed from the liquid nitrogen tank to avoid burn injuries from the liquid nitrogen.
2. The straw should then be placed in a warm water bath (37c°) for 30 seconds.
3. The straw is then removed from the bath and dried off with a paper towel to prevent water from coming into contact with the semen.

3) Loading the A.I. Rod:

- Using a straw cutter, the end is cut off of the straw of semen.
- The straw is placed into the end of the AI rod and a protective sheath is put over the rod.
- The plunger is locked into place.

4) Transporting the AI Rod:

It is a good idea to wrap the end of the AI rod containing the straw of semen in a paper towel to protect the semen from temperature change and to avoid contamination.



The rod should be carefully carried by the technician or an assistant to the site where the cow will be inseminated.

5) Cleaning the Vulva:

— The skin around the vagina (the vulva) should be cleaned with paper towels to avoid contaminating the cow when inserting the AI rod into the vagina.

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—6. Locating the Cervix:

— The technician should insert one hand into the cow's rectum to locate the reproductive tract and cervix.

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—7. Inserting the Rod:

— Once the cervix has been located, the AI rod is inserted through the vagina into the reproductive tract.

— The rod must be passed through the three muscular rings of the cervix and into the body of the uterus.

— 8. Depositing the Semen:

— Once the technician is sure the rod has passed through all three rings of the cervix, the semen is deposited into the body of the uterus.

— 9. Removing the Rod:

— After the semen has been deposited, the rod should carefully be removed from the reproductive tract.

— 10. Massaging the Tract:

— Massaging the tract also causes the release of Oxytocin which aids in semen transport.

— *After AI is completed, normal fertilization will take place and a calf should be born in approximately 283 days.*

Limitation (disadvantages) of artificial insemination:

1. It must be done by expert and highly qualified persons.
2. A.I. is a weapon of tow sides because it may dangerous if it is not done perfectly.
3. It may lead to spread bad characters if any mistake in choosing the suitable males.
4. Difficulty in estrus detection due to absence of males within females.
5. Results of A.I. are not very good at the beginning.
6. Large distance between places of accumulation of females makes it difficult to more benefits from A.I.