

FACT SHEET:

Artificial Insemination in Livestock

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Piglets born after Artificial Insemination

What is Artificial Insemination?

Artificial insemination (AI) is the process of collecting sperm cells from a male animal and manually depositing them into the reproductive tract of a female.

Herd fertility is critical to the success of any breeding pig enterprise. Artificial Insemination (AI) has now started to dominate the reproductive process on many Farms. It brings superior sire line genetics onto the unit and across many females, which could not normally be achieved cost-effectively by natural matings.

If operated correctly, it should also guarantee that each mating is carried out using viable sperm, something which cannot be guaranteed practically with a boar.

Advantages

- The genetic influence of good boars can be spread more widely.
- AI is a safe, cheap method of introducing new genes into pig herds, especially from those herds classified as specific pathogen-free, minimal disease or high health status, compared with bringing in live pigs.
- There is less risk of introducing exotic diseases with AI than in the importation of live pigs.

- AI overcomes size differences between boars and sows.
- It may be used during temporary shortages of boars from death, lameness or failure to work.

Disadvantages

- Reduced farrowing rate (50%) with frozen semen.
- Lower than average results with chilled semen stored longer than 72 hours.
- Disappointing results where AI is poorly timed or done incorrectly.

Preparation of AI

Preparations for A.I. include making sure that all necessary equipment ready and available.

Catheter

- The catheters commonly used for AI are the reusable rubber 'Melrose' with spiral tip or disposable plastic catheters having several types of tip.
- All are easy to use and achieve good results. Many inseminators prefer catheters with spiral tips that 'lock in' like the boar's penis, reducing back-flow during insemination.
- A drawback with reusable catheters is the high standard of cleaning and hygienic storage needed between uses.

Semen bottle

- Chilled semen bought from AI centers comes in ready-to-use inseminating bottles or tubes.
- If semen is collected and used fresh or diluted on-farm, a supply of clean plastic inseminating bottles will be needed.
- Can also use 60 ml syringe for administering the semen.

Care of Equipment

- Since boar semen is an excellent medium

for growing bacteria, all AI equipment must be kept clean.

- Immediately after use, soak reusable equipment in cold water (distilled) so that semen or other material is easily removed later.
- Do not use soaps or detergents because they affect sperm viability. Particles of gel can be removed with a brush.
- Rinse, then boil rubber 'Melrose' catheters in distilled water for 10 to 20 minutes before reuse.
- Tap water must not be used for rinsing because it leaves mineral deposits on the equipment.
- Store equipment in a dust-free cabinet or when completely dry, in a sealed plastic bag.

Steps In AI

- Make sure your female is in an area where you can easily, and safely, conduct the A.I. procedure.
- If a boar will be used for additional stimulation (due to pheromones), keep it in an alleyway or the neighboring pen.
- Best results may be achieved if the female is in a familiar area so she is not distracted and does not feel the need to explore new surroundings.

Heat Detection

- Vulva reddens
- Honking sound
- Mounting behavior
- Standing to back pressure

Vulva Hygiene

- The vulva and surrounding area should be cleaned with a disposable single-use paper towel or tissue prior to insemination

Preparing catheter

The catheter is used to move the semen from the container (tube, bottle, syringe) into the female's reproductive tract.

Keep the catheter clean by leaving it in a sealed plastic bag until it is ready for use.

Stimulating Female

The female should be stimulated to stand in a manner that simulates the boar's action in a natural mating situation.

This includes:

- Applying pressure to her back
- Applying pressure to her side and flank with your knee
- Rubbing her sides and massaging her udder with your hand.

Inserting catheter

When you are ready to insert the catheter make sure to follow these steps closely:

- Insert it slowly
- Direct the tip upward, usually about 30°
- Rotate it counterclockwise during insertion
- The catheter should be locked into the cervix when resistance is felt.
- Stimulation may occur before, during and after the insemination

Depositing the semen

This is the most time-consuming part of the A.I. process, Do Not Rush this step. Make sure you follow these guidelines:

Do not open the semen container until the catheter is inserted and locked in the cervix. The goal of the process is to get as much semen into the female's reproductive tract as possible while eliminating leakage and backwash of the catheter.

- It may take 5 to 10 minutes for the semen container to empty.
- The semen will be drawn in by the female's reproductive tract through uterine contractions and by gravity.
- To prevent backwash and/or leakage, try not to squeeze the container.