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## Swine Artificial Insemination for Beginners: The Insemination Process

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The following equipment is needed to artificially inseminate a sow or gilt:

1. Semen. Keep the semen in the storage container until you are ready to use it.
2. Knife or scissors to cut off the tip of the semen bottle. (Some bottles have twist-off caps.)
3. Damp paper towel or rag to clean the vulva.
4. An insemination rod. Disposable rods are available from semen suppliers.
5. A mature boar in an adjacent pen, or Sex Odor Aerosol (Boar Scent or SOA).
6. Lubricating jelly or OB lube (make sure it is non-spermicidal).
7. Optional: Oxytocin, a syringe, and needle. Oxytocin is a prescription drug available from veterinarians. In some situations (described below) an injection of Oxytocin is helpful.



Figure 1. Foam tipped and spirette-type insemination rods.

**Step 1. Make sure the sow or gilt is in standing heat:** You should not attempt to breed a sow or gilt that is not in standing heat. Put weight on the animal's loin and watch her response to make sure that she is standing. Some animals stand like a statue during insemination. Others stand, take a step or two, then stand again. To confirm standing heat, look for secondary signs such as ear popping, sticky mucous, and an engorged clitoris.

**Step 2. Clean the animal:** Clean the vulva with a damp cloth or paper towel so that no dirt or manure is pushed into the reproductive tract when the insemination rod is inserted.

**Step 3. Stimulate the animal:** With most insemination rods, semen is not injected into a sow or gilt, but is pulled into the animal by uterine contractions. To stimulate uterine contractions, allow nose to nose contact with a boar in an adjacent pen or spray SOA on the sow's snout. Rub the animal's flanks and put some weight on her back before and during insemination.

Oxytocin can be used to stimulate uterine contractions that aid semen intake. Inject one cc of Oxytocin intramuscularly or subcutaneously into the animal's neck after inserting the rod (see below) and about two minutes before beginning insemination. This has been shown to improve conception rates and litter size for novice inseminators.



**Figure 2.** Insemination rods should be inserted at a slightly upward angle.



**Figure 3.** It is often helpful to apply back pressure during insemination.

**Step 4. Insert the rod:** Disposable swine insemination rods come in a variety of shapes. All are designed to “lock” into the cervix of the sow or gilt. The two most common styles are spirettes with counterclockwise threads on the tip, and rods with a

rounded foam tip.

When using a spirette, lubricate the tip with semen or a little lubricating jelly before gently inserting it into the vulva. Angle the rod tip upward (toward the backbone) to avoid the opening to the bladder. Gently twist the rod counterclockwise as it is being inserted. The rod can usually be inserted eight to ten inches before reaching the cervix. Push the rod gently and continue to twist counterclockwise until the tip is “locked” into the cervix. To test for cervix lock, twist the rod counterclockwise and release it. The rod will rotate clockwise 1/4 turn, or so, if the tip is locked into the cervix. If you have trouble getting the tip to lock, reposition the rod and try again.

Foam tipped rods are inserted like threaded rods, but do not need to be rotated. Gently push on the rod until you feel the foam tip catch in the folds of the cervix. To test for lock, pull back gently on the rod.

If the rod will not lock, check to make sure that the animal is truly in standing heat. If using a spirette, make sure that you are rotating the rod counterclockwise. Be sure that the rod tip is angled upward as you insert it so that you do not insert the rod into the bladder.

**Step 5. Insemination:** Remove the tip of the semen bottle and insert it into the end of the rod. Apply gentle pressure to the bottle. Short, pulsing squeezes often work better than continuous pressure. The semen will begin to flow into the animal if she has been properly stimulated. There will be times when the animal “accepts” the semen, and times when semen flow slows or stops. Be patient. Do not try to force semen into the animal. It may take 5 minutes or more to empty the bottle. Work with the sow or gilt by applying gentle pressure to the bottle when she is accepting semen. Continue to stimulate the animal by putting weight on her back and rubbing her flanks.

A bit of semen backflow at the vulva is normal. If much backflow is seen, reposition the rod tip and try again. When the bottle is becoming empty, remove it from the rod and draw some air into the bottle. Re-attach the bottle and use the air to gently force the last of the semen from the rod. Then rotate the rod clockwise and withdraw it. Continue to rub the flanks and apply back pressure for a couple of minutes after the rod has been withdrawn.

Oxytocin is a prescription drug that is used during farrowing to stimulate uterine contractions and milk flow. It can also be used as an insemination aid. After locking the rod into place, inject 1cc of Oxytocin into the sow or gilt's neck muscle. Wait 1 or 2 minutes before attaching the semen bottle to the rod. The Oxytocin induces contractions that draw the semen into the uterus. Studies have shown that Oxytocin can improve conception rate and litter size for novice inseminators.

### **Insemination with "Squeeze and Please" Rods**

Recently a new foam-tipped rod called the "Squeeze and Please" rod became available. Inside the rod is a rubber sleeve that is attached to the tip. During insemination, hydraulic pressure turns the sleeve inside out. The sleeve threads through the cervix and deposits semen directly into the uterus. The rods are available in either gilt or sow models.

Squeeze and Please rods are locked into the cervix like any foam-tipped rod. Wait two or three minutes after positioning the rod before attaching the semen bottle. This critical step allows the cervix to relax, making it easier for the sleeve to find its way through. After attaching the semen bottle to the rod, forcefully squeeze the bottle to invert the sleeve. You will feel the pressure release when the sleeve is completely inverted. If the sleeve does not invert, semen will rush back into the bottle if you stop squeezing. If this happens, wait 1 or 2 minutes for the cervix to relax and try again. When the sleeve has inverted, remove the bottle from the rod, draw a little air into the bottle, reattach the bottle and force any remaining semen out of the rod

before withdrawing it. Actual insemination takes only a few seconds.

When using Squeeze and Please rods, do not stimulate the sow or gilt in any way during insemination. Do not have a boar present, use SOA or put weight on her back. The goal is to allow the cervix to relax. It is helpful to feed the animal and A.I. her while she is eating.

### **Post Breeding**

Check the animal for standing heat 12 and 24 hours after the last insemination. Ideally, she will stop standing within 12 hours of insemination. If the sow or gilt is still standing 24 hours after you've used your last dose of semen, you probably inseminated too soon. Many A.I. failures come from breeding too early. If the animal stops standing within 12 hours of insemination, chances of success are very good.

What if the animal is no longer standing when you try the second insemination? Relax. The timing of the first insemination was perfect. Do not attempt to breed an animal that is no longer standing just because you have doses left over. Inseminating a sow or gilt that is not standing will not improve conception and increases the risk of infection.

Record keeping is a critical part of a successful A.I. program. At a minimum, write down dates and times of inseminations, the boar used, the 21-day check-back date and the due date. It is also helpful to jot down comments that can help you make adjustments, if needed, on future inseminations.

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