

## **Nimbkar Agricultural Research Institute, Animal husbandry Division**

**Phaltan, Dist. Satara, Maharashtra**

Phone: 02166-262106 / 200783

### **Procedure of artificial insemination (AI) of farmers' goat does using frozen buck semen**

- **Enquiries to be made by AI technicians and information to be given to the goat owner:**

1. When did the goat exhibit signs of heat? (A goat doe should be inseminated 12 hours after the first signs of heat.)\*
2. Semen of which breed of buck is to be used for the goat? If the farmer knows, he/she will tell you the buck breed. Otherwise you should give them brief information about the breeds of goats whose frozen semen is available with you.
3. Tell the farmer how much it will cost for the AI.
4. Find out the age and weight of the doe. If the doe is younger than 10-12 months of age or weighs less than 20-22 kg, advise the goat owner not to have it inseminated and that it would be better to wait until the next heat.

(NARI has published a booklet in Marathi about the adverse consequences of mating does that are too young.)

- **Preparation before doing AI:**

1. In a clean place near where AI is to be performed, lay out all the required items on a newspaper page. (Speculum, AI gun, packet of sheaths, packet of tissue papers, scissors, small cotton swabs, thermometer, a bowl or shallow, open vessel or concave tray for thawing the semen straw and a head light)
2. Get the farmer to heat some water and take hot and cold water in separate pots or mugs.
3. Check the canisters in the LN<sub>2</sub> container to see which one has semen straws of which breed.

- **Care to be taken before AI:**

1. Check the stage of oestrus of the doe to be inseminated. Only those does that are in the right stage of heat should be inseminated.
2. Clean the speculum with a wet cotton swab (after squeezing it to remove excess water). If available, fix the head light on your head (Buy one and use it). Even when there is adequate sunlight, a head light is very useful to see the stage of oestrus in the doe properly.
3. Show the goat owner how to hold the doe to be inseminated. If there are two people available to hold the goat, one should put one leg over the back of the goat while facing the rear of the goat and lift its hind legs while holding it between his legs. The second person should sit on the ground and hold the doe's head or horns.
4. Insert the speculum gently in the goat's vagina and check the stage of oestrus in the light of the head light (or in sunlight if there is no head light).
5. If there is a lot of discharge in the vagina, have the goat's legs put back on the ground and have it standing normally again. Then move the speculum gently back and forth in the vagina and remove the discharge.
6. If the doe is in the correct stage of oestrus, carry out the AI.

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\*If a doe is found to be in heat in the morning, inseminate it straight away as it would not be possible to estimate exactly when it came in heat during the night.

- **Care to be taken while doing AI:**

1. Mix hot and cold water in a shallow bowl and make the temperature of the water exactly 37<sup>0</sup>C. Use a thermometer every time. Don't try to judge the water temperature by dipping a finger in it.
2. Open the lid of the LN<sub>2</sub> container. Lift up the required canister slightly, turn it towards the centre of the container and lift it out further. Take one straw out, give it a light jerk (air thaw) and put it immediately in the bowl of 37<sup>0</sup>C water. Make sure that the straw is completely submerged in water.
3. Keep the straw in the 37<sup>0</sup>C water for 30 seconds.
4. Then remove the straw from the water and wipe it once with tissue paper. Hold the AI gun in your hand and pull back the piston. Load the straw in the gun from its cotton plug end, so that its sealed end will remain outside. Cut the sealed end of the straw with scissors and prepare the gun for insemination by placing a sheath over it. This process should be done quickly.
5. Ensure that the straw is locked in the gun properly.
6. Clean the goat's vulva with a cotton swab or tissue paper.
7. Make the speculum wet with a wet cotton swab.
8. Tell the goat owner to lift the goat's hind legs.
9. In the light of a head light or sunlight, insert the speculum gently into the doe's vagina and locate the cervix (Os). Ensure that no urine, faecal matter or other dirt contaminates the tip of the AI gun.
10. Gently try to pass the insemination gun as far inside the cervix as possible. This should be done quickly. Deposit the semen by pressing the piston of the gun slowly. Do not press the piston at once, as this might lead to the semen splashing or the goat getting hurt.
11. Remove the gun and the speculum slowly and lower the doe gently. Switch off the head light.

- **Work to be done after AI:**

1. AI technicians should always keep a record of the inseminations done by them. Printed AI recording books are available for Rs.15/- at NARI.
2. Enter all the information properly in the AI record book after performing the AI. Write full name, address and telephone/mobile number of the goat owner.
3. Wash the speculum with warm water and then apply some Betadine solution on it.
4. If you meet the goat owner anywhere or during your regular visit, get information on whether the inseminated goat has conceived or come on heat again. If the goat has conceived, tell the owner its expected date of kidding.

- **Instructions to be given to the goat owner:**

1. Take care that no buck has access to the inseminated doe on the day of AI and for the next 3-4 days.
2. Request him/her to inform you the doe kidding details by telephoning.

- **Precaution about semen straws in the LN<sub>2</sub> container:**

1. Frozen semen straws should always remain immersed in liquid nitrogen (LN<sub>2</sub>). To ensure this, top up your LN<sub>2</sub> container regularly (twice or thrice a week).

- **Note:**

1. The AI gun used for insemination in cows and buffaloes, can be used for AI in goats. It is, however, necessary to buy a speculum for AI in goats.
  2. Goat owners should be told to have all bucks older than 3-4 months in their flock castrated to eliminate the risk of undesired mating. Castrated males will also gain more weight.
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