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Code of practice for deer artificial insemination

鹿人工授精技术规程

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1 Scope

This document establishes the technical procedure for deer artificial insemination, and specifies the operating instructions for the selection of female deer, the identification of oestrus in female deer, the preparation before insemination and the insemination itself; it describes the verification method.

This document applies to artificial insemination operations on sika deer and red deer.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions need to be defined for this document.

4 Technical procedure for deer artificial insemination

The technical procedure for deer artificial insemination comprises the selection of female deer, the identification of oestrus in female deer, the preparation before insemination and the insemination. The technical procedure for deer artificial insemination is shown in Figure 1.

5 Selection of female deer

Female deer shall be selected that are healthy, that are in medium body condition or better, and whose reproductive function is normal.

6 Identification of oestrus in female deer

The following methods may be used to identify oestrus in female deer:

- a) Observation method: a female deer that stands still and accepts mounting can be identified as being in oestrus. Observation is carried out in the morning, at midday and in the evening, once each; the number of observations shall be not fewer than three per day, and each observation shall last not less than 30 min.
- b) Teaser method: a male deer with strong libido is fitted with a teaser apron on its belly to serve as the teaser male and is put into the group of female deer at a ratio of 1:20 to 1:25; a female deer that stands still and accepts mounting can be identified as being in oestrus.

7.1 Site

The site shall be hygienic and quiet, and shall allow the work to be carried out conveniently.

7.2 Preparation of implements and instruments

The implements and instruments used for insemination shall be cleaned and disinfected. Glassware and metal instruments shall be brushed with detergent in hot water, or cleaned in an ultrasonic cleaner, rinsed with distilled water and then placed in a drying oven at 180 °C for 90 min to 120 min to be sterilised. The equipment is given in Annex A.

7.3 Preparation of frozen semen

7.3.1 Thawing of the frozen semen. The straw of frozen semen is taken out of the liquid nitrogen and dropped into warm water at 37 °C to 38 °C; after 10 s to 15 s it is taken out and the water droplets are wiped off with paper or gauze, and it is then ready for use.

7.3.2 Inspection of semen quality. The quality of the thawed semen is checked. Insemination may be carried out only when the number of effective spermatozoa in the semen is not less than 10 million per dose and the sperm motility is not less than 30 %.

7.4 Preparation of the insemination gun

Before use, the insemination gun shall be preheated to 30 °C to 36 °C. The plunger of the insemination gun is drawn back and the thawed straw of semen is loaded into the gun with its sealed end facing outwards; the sealed end is cut off with straw scissors, the cut being square and the cross-section even; the rigid outer tube and the flexible outer sheath are then fitted.

8.1 Time of insemination

8.1.1 Female deer that have been given oestrus synchronisation treatment shall be inseminated 53 h to 65 h after the vaginal plug has been removed.

8.1.2 Female deer shall be inseminated 16 h to 24 h after they stand still and accept mounting by the teaser male.

8.2 Insemination operation

The following methods may be used for the insemination operation:

- a) Speculum method: a purpose-made speculum is slowly inserted into the vagina of the female deer so that its front end lies close to the mouth of the cervix; with the aid of light from a bulb, or using a video insemination gun, the cervical os is found, the insemination gun is inserted into the cervix, and after it has passed four folds the semen is slowly expelled; the gun is then slowly withdrawn.
- b) Rectal fixation method: the inseminator puts a latex glove and a disposable long-arm glove on one hand and coats the surface of the long-arm glove with lubricant; with the five fingers held together in a cone, the hand enters the rectum through the anus and the retained faeces are drawn out; the cervix is found and held so that the vagina and the cervix are brought roughly into a straight line; with the other hand the protective film of the outer sheath of the insemination gun is pulled outwards by 10 cm to expose the tip, and the gun is inserted gently into the vagina from the lower opening, upwards at an angle of about 45°, then pushed horizontally into the external os of the cervix; after passing four folds through the cervix it reaches the body of the uterus, the plunger of the gun is pushed slowly forward to expel the semen, and the gun is then slowly withdrawn.

9 Verification method

The ear tag number of the female deer, the parity, the breed and origin of the male deer, the ear tag number of the male deer, the type of semen, the time of insemination, the volume inseminated, the inseminator and other such information shall be recorded promptly.