

## Artificial Insemination & Embryo Transfer

The Artificial Insemination Unit was established in the 1940's as a tool in developing the Jamaica Hope cattle and other local cattle breeds. The Unit has since transformed from a fresh semen insemination programme to that of frozen semen preservation. Currently, the AI Unit offers 15,000 straws of semen from a stud of seventeen (17) bulls. This preserved semen is supplied not only to local livestock farms, but exported to countries including Barbados and Trinidad & Tobago in the eastern Caribbean.

The main thrust of the AI Unit is to guarantee rapid multiplication of improved quality livestock. This is done through selective qualification of donors and recipients who display high genetic value/characterizations and have proven to carry pregnancies.

It is expected that in the near future, artificial insemination services will also be offered to the swine and small ruminants livestock industry, and Embryo Transfer services made available to cattle owners. The Veterinary Services Division is currently in the process of procuring specialised equipment and establishing facilities specific to these extension activities.

### Semen Collection and Processing

The semen-processing laboratory at the Bodles Research centre is functional in the collection, processing and freezing of semen. To ensure the highest quality of semen is collected, the donor animals have to undergo a Breeding Soundness Examination (BSE) before being admitted to the programme. The BSE consists of a general physical examination of the bull with a more detailed examination of his reproductive genitalia (organs) and evaluation of the collected semen (ejaculate). The quality of the ejaculates are then determined. This is done by looking at the overall colour and viscosity of the ejaculate (gross visual examination) as well as the morphology and motility of the sperm (microscopic examination). Once they pass the BSE the bulls are quarantined before being admitted into the stud herd.

Upon qualification the semen is frozen and stored for domestic use and export. The semen straws are carefully stockpiled in specialized liquid nitrogen storage tanks at a constant temperature of -196 degrees Celsius (-196°C).

### Technical Assistance to Farmers

Local livestock farmers are provided with assistance in the manipulation of the reproductive cycles of females through a highly trained cadre of veterinary officers and artificial insemination technicians/animal health technicians. These personnel provide advisory and technical services in animal health, fertility and animal breeding. Livestock farmers are specifically sensitized to detecting heat in females, which is crucial to the success of the artificial insemination process.



Preparing the artificial vagina by pouring in warm water to simulate the natural mating environment.



The artificial vagina is attached to the penis of a stud bull as he mounts a teaser cow.



The artificial vagina is tipped slightly downward to allow its comfortable release from the bull's penis.



The ejaculated semen, collected for quality analysis, is kept warm on a slide warmer.



Making of semen extender that preserves the fertilizing ability of semen.



Semen straws are filled and labelled using this machine. Information that may be noted on the straws includes the animal's name, registration number and breed; the date the freeze was performed; as well as the type of the liquid diluent and antibiotic used in the extender.

For further details on the Artificial Insemination programme, please contact the:

**Veterinary Services Division**

Hope Gardens, Kingston 6

977-2492/2489

[vsd@micaf.gov.jm](mailto:vsd@micaf.gov.jm)