



Staff of the National Animal Genetic Resources Centre and Data Bank (NAGRC&DB) prepares a bull and cow for mating to collect sperms. PHOTO/RACHEAL NABISUBI

Artificial insemination to boost livestock farming in Uganda

Expansion. Under the Agriculture Value Chain Development Programme (AVCP) project-1, the National Animal Genetic Resources Centre and Data Bank (NAGRC&DB) has expanded the outreach of artificial insemination services through its community-based breeding programme, which works with both public and private sector technicians to introduce artificial insemination where they are low or non-existent.

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EXOTIC BULLS
PURCHASED
FOR IMPROVED
GENES

Uganda cattle keepers will continue experiencing a newfound sense of optimism following the interventions to strengthen the delivery of Artificial Insemination (AI) services. These are aimed at

enhancing beef and milk production as well as preserving appropriate cattle breeds for continued use in the future.

The interventions have been made possible by the National Animal Genetic Resources Centre and Data Bank (NAGRC&DB) under the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)'s Agriculture Value Chain Development Programme (AVCP) project-1 / with support from the African Development Bank (AfDB).

NAGRC&DB is an agency established under MAAIF to implement a comprehensive animal genetic improvement in Uganda for increased national herd production and productivity.

The agency operates government farms and ranches where the multiplication of animals, including cattle for both dairy and beef production, meat and dairy goats, poultry, piggery,

rabbits and fish is done.

These farms and ranches are strategically distributed in Northern Uganda, Eastern, Western, Central, and South-western Uganda to best serve farmers in the respective sub-regions.

Besides the farms, there is a national bull station in Entebbe where semen is collected, processed, and distributed to both public and private sector entities that deliver AI services to farming communities all over the country.

Dr Sheila Butungi, the Deputy Technical Manager of Production at NAGRC&DB, says the AVCP beef/dairy component focuses on enhancing farmer access to and the utilisation of improved cattle for more milk and beef.

Exotic bulls with high production genes are imported to provide semen for crossbreeding with indigenous cows. The indigenous cows also con-

tribute disease tolerance and adaptability to various climatic conditions genes to the resultant offspring. The project has purchased 22 bulls for this purpose.

"We also facilitate the multiplication of these high-producing breeds at both private and NAGRC&DB farms so they are sold to farmers at affordable costs. That allows for more farmers to access the good breeds. We also produce the inputs needed for both programmes so farmers can access these inputs to improve their flocks," Dr Butungi says.

Under the AVCP project, NAGRC&DB has expanded the outreach of AI services through its community-based breeding programme, which works with both public and private sector

technicians to introduce artificial insemination where they are low or non-existent.

Dr Butungi adds that in such instances, they employ mass synchronisation programmes targeting large herds of cattle in one area so that they can come on heat and be served at the same time. This means that the animals shall give birth to calves at the same time.

This is a quick way to demonstrate the merits of artificial insemination as well as improve genetics in these new areas.

The project has purchased bulking liquid nitrogen tanks and stationed these in strategic areas where the AI technicians can pick them up with ease and promptly. Previously, acquiring semen and nitrogen from the NAGRC&DB in Entebbe was costly for the technicians and the costs were transferred to the farmer.

NAGRC&DB transport facilities, deliver bulk quantities of semen and liquid nitrogen to these bulk centres strategically stationed in different regions; Gulu, Luweero, Wakiso, Buikwe, Rubona and Mbarara,

"We can process between 300 and 600 doses of semen from one bull per week," she says, noting that they have a capacity of 40 bulls which have a production potential of one million doses of semen per year.

One of the merits of artificial

BETTER BREEDS

One of the merits of artificial insemination as a breeding tool is that farmers have a wide variety of breed and specific bull or bulls to choose from to father the next generation of calves on their farm in an affordable manner. For instance, a farmer might prefer breeds that lead to more volumes of milk, more fat content or fast-growing animals with large weights depending on the goals of their farms. The project is also going to expand and equip the current semen processing facility.

NAGRC&DB moves to ease artificial

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The project is also going to expand and equip the current semen processing facility. So far, it has trained and equipped more than 172 artificial insemination technicians, which has increased the number of available technicians in the country.

With convenient storage facilities available, artificial insemination services are easily accessible, thanks to the availability of technicians nationwide who are equipped for the provision of these services

"This move has helped realise one of the aspirations of the project, which is to increase the volumes of milk and beef produced to avail the required volumes for value addition. This is a direct boost for increasing both local consumption and for export purposes," Dr Butungi says.

The dairy and beef value chains are a source of employment for many families many of whom have improved their incomes and livelihoods.



Testimony

Mr Denis Ssekamanya, a livestock farmer in Mpigi District, is one of the artificial insemination beneficiaries from NAGRC&DB. He testifies that over the last three years of working with the AVCP project, he witnessed improvement in the breeds and almost all the animals conceived and produced at the same time, this has enabled him to plan better for his farm.

Accessing artificial insemination services

NAGRC&DB works to deliver inputs to both the public and the private technicians since veterinary services including artificial insemination services were privatised in the late 1990s.

Therefore, farmers can access artificial insemination services through any skilled and equipped technician in their localities. Technicians have set up their sub-centres at the grassroots to further ease access.

The technicians go to NAGRC&DB facilities, including community-based breeding facilities countrywide to pick semen and liquid nitrogen. This implies that unless a farmer has equipment and a skilled technician on their farm, they will only rely on the private technicians within their localities for the semen inputs.

This is possible once you call the District Veterinary Officer (DVO) or veterinary officer in your locality to link you up with trained technicians. Farmers are encouraged to learn



"The Agriculture Value Chain Development Programme (AVCP) project-1 beef/dairy component focuses on enhancing farmer access to and the utilisation of improved cattle for more milk and beef. We also facilitate the multiplication of high-producing breeds at both private and NAGRC&DB farms so they are sold to farmers at affordable costs. That allows for more farmers to access the good breeds. We produce the inputs needed for both programmes so farmers can access these inputs to improve their flocks."

Dr Sheila Butungi, the Deputy Technical Manager of Production, National Animal Genetic Resources Centre and Data Bank



"I am one of the artificial insemination beneficiaries rolled out by the National Animal Genetic Resources Centre and Data Bank (NAGRC&DB) under Agriculture Value Chain Development Programme (AVCP) project-1. Over the last three years, I have witnessed improvement in the animal breeds and almost all the animals conceived and produced at the same time. This has enabled me to plan better for my farm. I encourage other livestock farmers to join in for better produce and improved milk and beef output."

Mr Denis Ssekamanya, a livestock farmer, Mpigi District

the signs of heat so they can monitor and report the animals on heat to the technicians on time.

Some of the costs in AI have been subsidised by the government through the AVCP initiatives.

Conservation of animal genetic resources

In addition, some of the NAGRC&DB ranches are dedicated to the conservation of indig-

enous breeds for continuous utilisation, development and research programmes.

"Most of these breeds face the danger of extinction through man-made interference or natural ca-

lamities. The only way to prevent this is to support their multiplication and keep them in gene banks. This is why NAGRC&DB has an animal gene bank where we store genes under liquid nitrogen (cryopreservation) in the form of eggs, semen, embryos and tissues," she says.

Cryopreservation is a process where biological material - cells, tissues, or organs - are frozen to preserve these materials for an extended period.

This procedure can only be done with government interventions as the process is costly for individual farmers and through NAGRC&DB, the government has made commendable strides towards this.

Uganda is guided by international agreements, namely the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation of the Convention on Biological Diversity. This guides sustainable utilisation, preservation and development of genetic resources.

Uganda's readiness to conserve animal genetics led to it being chosen to host the African Union Animal Seed Centre of Excellence (formerly the Eastern Africa Regional Gene Bank) which serves twelve countries in the eastern Africa region. They include Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania and Uganda.

insemination access



SERVICE

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Ms Mastula Namubiru, a livestock technician at the NAGRC&DB liquid nitrogen filling reservoir where semen is stored.

PHOTOS/RACHEAL NABISUBI



One of the indigenous breeds kept by NAGRC&DB at the gene bank.



Hay for feeding livestock while at the NAGRC&DB farm.



A staff member of NAGRC&DB inspects cattle during a farm visit.



Artificial insemination tool kits that assist in bringing the services closer to communities.



Extension workers pose for a photo after a training at NAGRC&DB.

