

MoA: Artificial Insemination To Improve Horse Breeds



Horses are distinguished for their resistance to many animal diseases, generally long lifespan (they may live up to 30 years), considerable strength, remarkable endurance, and ability to withstand heavy work and harsh conditions. Horses still play an important role in Eritrean society, particularly for transporting people and goods and in rural areas. As well, they are used for sport and entertainment in some recreation centers.

The history of horses in Eritrea goes back hundreds of years. They were used as one of the major draught animals and were regarded as a symbol of prestige and wealth in society. According to Hienok Ghebrehiwet, the general manager of Horse, Rabbit, and Swine Breeding Centers, and also head of the Meat, Hides, and Skin Development Unit in the Ministry of Agriculture, Eritrea is endowed with two types of horse breeds namely: Abyssinian and Dongola (locally called Jungula). Abyssinian horses are believed to have originally come from Ethiopia, while Dongola horses came from countries of North Africa, such as Sudan and Chad. Furthermore, Abyssinian horses are mostly found in the Eritrean highlands and are smaller than Dongola horses, which are found in the Eritrean western lowlands. According to Hienok, even though horses have offered numerous benefits to society, little has been done to improve breeds or increase the number of horses. To date, horses in Eritrea have traditionally been small, few in number (less than 5000), and expensive. However, the Ministry of Agriculture, in collaboration with a development partner, the International Fund for Agricultural Development (IFAD/ NAP), has sought to improve horse breeds in the country. In 2017, horse breeds that could play a great role in transforming the country's relatively poor breeds were imported from Hungary. Prior to importing the horses, a number of preparations were put in place, including

developing standard infrastructure, preparing feed, organizing healthcare packages, and training local staff. Some criteria for selection in importing horses were breed purity, physical fitness, and speed of learning. Beginning in 2018, several Mr. Henok Ghebrehiwet training programs were conducted to strengthen the capacity of the staff in general horse management, horse breeding, semen collection, laboratory testing of semen purity, and artificial insemination. These programs were conducted in collaboration with veterinary experts from Cuba. Public awareness programs were also conducted via the mass media and community meetings, while practical training programs were offered to farmers and horse owners. These programs focused on general management and care of horses, animal health, address optimum speed of horses, management of horse manure and compost production, safety, licensing, and development of an association of horse owners.



According to Hienok, since it is difficult to bring fast breed transformation using the few mares in the center, artificial insemination (AI) was introduced. The AI process uses semen of pure bred stallions on local horses. The cost is about 100 Nakfa, while a mature horse of pure breed (around eight months of age) sold for about 5000 Nakfa. As well, since these horses are the parent stock, the Ministry does not need to import new breeds for the coming 12 years, if at all. Finally, Hienock noted that the breeding center plans to include recreational services and to encourage the establishment of similar private centers for broader services. The Horse Breeding Center (HBC) is located in Villagio, Asmara. It covers an area of over ten hectares. Established in 2017, it is a modern and fully-equipped

facility, run by agricultural experts. The Ministry of Agriculture newsletter recently conducted an interview with Selamawit Afewerki, Manager of the HBC and Animal Production Expert. The discussion focused on activities of the HBC and the process of AI.

Question (Q): Let's start with the basics of the HBC. Tell us a bit about it.

Answer (A): The HBC has different parts. There are 14 pens for the stallions, mares, and their foals. These are of different sizes. Also, there are five paddocks, with an area of about 2000 meters squared. This is for exercising, galloping, and grazing area. We also have a store, offices, and washing facilities. In total, there are 10 daily workers and five experts.

Q: What are the general activities of the HBC?

A: In addition to the routine management and care of horses, we have two small plots of land for the production of green feed. Moreover, around 10 hectares of pasture is available where the grass is cut annually, collected, baled, and stored after the rainy season. This is used as major feed and bedding. We also collect semen from the horses and offer AI services to local horse owners from Asmara and other regions of the country.

Q: What types of horses does the HBC possess?

A: In December 2017, nine horses were imported from Hungary. Six were pregnant mares and were expected to foal within four or five months. Most of the horses are Arabian (Shaggiea arabian), while one is a Hungarian Hucul breed, which is ideal for draught purposes. Q: When did the HBC begin to multiply the imported horses? A: Since six of the horses were already pregnant, they foaled around mid-2018. After foaling, they had to be inseminated within 8-12 days. Thanks to the guidance and support of the Cuban veterinary experts, who at that time were directing the AI process, all six mares were inseminated.

Q: How is the AI service progressing?

A: Currently, we are in the fourth round of artificial insemination. The Cuban experts trained us well and at this time we are conducting AI service by ourselves.

Q: What kind of services does the HBC provide to farmers in terms of horse reproduction?

A: We deliver three kinds of services to farmers. The first is distributing weaned foals. This is done after they reach around eight months. This means that the beneficiaries are adding pure breeds into their existing stock. The second one is the AI service. Beneficiaries arrive with their local breeds to get AI service. The third, and the most important service, is the provision of advisory services to horse owners. Those who took pure breeds, like Techno-Garden Recreation

Center and other beneficiaries around Asmara, are expected to reproduce these breeds by maintaining their quality.

Q: What has been the perception of farmers towards AI?

A: Awareness about AI among farmers has been growing. In 2019, for instance, 13 beneficiaries inseminated their m a r e s . However, this past year, 21 mares were successfully inseminated through AI.

Q: What are the benefits of AI in horses?

A: AI has many benefits. Some of these include the fact that local breed horses get improved both in size and in number – all in a relatively short period of time. As well, diseases are not transmitted, unlike natural mating. Additionally, from a single collection, many mares can be inseminated, while AI reduces the risk of accidents or injuries to the stallion, mare, or operator. Finally, it is low cost – only 100 Nakfa per insemination.



Q: Tell us about a bit about how the HBC conducts AI services.

A: All of the necessary equipment was imported along with the horses. Starting from the preparation of semen collection instruments, precautions are strictly followed before, during, and after insemination processes. We always give fresh semen to mares, the process is quite quick and done with utmost care. Moreover right after the semen is collected, laboratory analysis is conducted to check viability, motility, and count of the sperm cells in the semen before AI service is conducted.

Q: What are the pre-requisites for AI services for farmers with horses?

A: Generally, we recommend that the mare to be inseminated is a minimum two and a half years of age. Traditionally, farmers believed that one-year-old mare could be mated. This wrong incorrect belief, however, contributed, among other factors, to the small physical size of horses in our country. Therefore, the HBC, does not recommend a female horse under two and a half years of age to reproduce. Of course, animal feed also plays a role. Physical fitness is another prerequisite for AI. If our customers bring physically unfit mares for AI, we tell them to provide it more feed and of better quality. Then when it reaches the appropriate weight it can be brought back. If the mare is naturally small in size, we collect semen from a smaller stallion. Q: Any final comments for horse owners? A: First and foremost, since horse owners make a living from horses, they need to take care of them. As they'd do for their children, they should increase their knowledge and understanding about how to care for them properly – things like adequate feeding, cleaning and washing, work, and rest. As well, to avoid beating them harshly and to ensure that they ensure they receive regular vaccination and veterinary attention. Second, I recommend that horse owners visit the HBC and consider our services. It can help to improve the quality and number of horses in our country.

Ministry of Agriculture

Eritrea Profile