Scientists involved in research on stingless bees at Uganda's National Livestock Resources Research Institute. Photo Credit: Lominda Afedraru

Ugandan scientists push for commercial stingless beekeeping

By Lominda Afedraru

AGRICULTURAL scientists under the National Agricultural Research Organisation have embarked on showcasing the technologies they have applied in research and developed products for farmers.

One such group of scientists from the National Livestock Resources Research Institute are engaging stakeholders in the apiary farming drive.

The scientists breed stingless bees to process honey and propolis.

Experts say stingless bees are important in the pollination of crops and, the production of medicinal honey and other products.

However, throughout the developing countries in Africa, meliponiculture has received less attention in beekeeping in development programmes.

Past studies indicate that stingless beekeeping is in its early stages of development.

There are about four species of stingless bee species that are of good economic benefit and these include Meliponula bocandei, Meliponula nebulata, Melipunula ferruginea and Plebeina hildebranditi.

Scientists say farmers can use these bee species for profitable honey, propolis and pollen production.

Dr Patrice Katangaki, who heads the project, said that in 2018 his team jointly with scientists at Makerere University embarked on collecting stingless bee species around the Lake Victoria crescent and in the western highlands.

After studying their characteristics they realised the species collected from central Uganda could be domesticated in any part of the country. Out of the three species, the team realised Meriponula verugemia and Meriponula bingadeado do bite but they cannot sting and they produce good amounts of propolis and honey.

Domesticating stingless bees

At the institute, the scientists established an eco-friendly beekeeping area with different types of hives. Some have pot-like shapes because from the wild they can produce propolis and honey when in such pot-shaped hives, some are made of boxes.

The team has also planted calliandra and avocado trees for the flowers to provide nectar.
However, the bees can fly as far as three to five kilometres looking for nectar.

Stingless versus stinging bees

Scientists believe that the original habitats of the honeybee are forested areas and tropical climates.

They probably originated in Africa and from there spread to China, the Americas, India and Europe. However, since honeybees have been domesticated to produce honey for human consumption, they can be found all over the world.

Scientists at Uganda's National Livestock Resources Research Institute showcasing research on stingless bees. Photo Credit: Lominda Afedraru

Honeybees prefer to live in orchards, gardens and other areas with flowering plants. They have stings in their abdomen.

Stingless bees can be found in most tropical and subtropical regions. They start a new nest with a large number of worker bees, but they cannot be considered a swarm.

Since stingless bees cannot use their stinger for defence, they had to develop different ways to defend the hive. Their defence system involves guard bees, which can be separated into two groups – hovering guards and soldier guards.

Due to nonaggressive behaviour and the lack of a functional stinger, the bees can be reared in densely populated areas such as community settings as long as there is a flower in existence.

Benefits of stingless bee honey and propolis

Dr Katangaki said that honey produced by stingless bees has good health benefits the reason it is expensive with a liter sold at USD 200, making it commercially viable. It is used as medicine to cure cough, measles, and wounds and this was proved with experiments done at Ambrosoli Hospital in Kitgum, northern Uganda.

It also cures fungal bacterial infections and is used as a sweetener and food. It is a good pollinator for wild and planted plants. Its sedproplis acts as antimicrobial, antioxidant, anti-inflammatory, and anti-cancer properties. The processed propolis once taken improves immunity, lowers blood pressure, and treats allergies and skin conditions.