Breeders from the Naro display the three varieties of sweet potatoes released by the Minsitry of Agriculture recently for farmer uptake PHOTO/LOMINDA AFEDRARU

EXPERTS VIEW.

The director of Research at NaCRRI, Dr Titus Alicai, said releasing three varieties of purple fleshed sweet potatoes is a milestone marking significant leap in diversifying sweet potato utilisation for farmers, consumers and the food industry across the East African region.

"It is the very first time for the country to have purple fleshed sweet potatoes rich in food nutrient both for humans and animals because the vine can be processed as animal feed," he said.

Purple fleshed sweet potato varieties released

The purple-fleshed sweet potato variety is all round variety mainly aimed at obtaining health benefits compared to other varieties.

LOMINDA AFEDRARU

The National Agricultural Research Organisation (Naro) which is tasked with breeding crop varieties recently released purple fleshed sweet potato, the first of its kind. Scientists began breeding the variety in the year 2016.

Background

According to experts from North Carolina State University in the United States, domesticated sweet potatoes date back over 10,000 years, with evidence of purple varieties in the Andean region modern-day Peru and Bolivia.

They were introduced to Europe, Asia, and Africa by explorers, becoming a significant crop for their adaptability and high nutritional value.

The original varieties included Okiwan Sweet potato originating from South America brought by Spanish explorers to the Philippines and China in the 1490s, eventually reaching Japan in where it became a staple in Okinawa

According to Dr Bernard Yada, the head of root crops programme at NaCRRI, farmers in Uganda have been growing a number of Sweet potato varieties.

These are mainly local varieties which are white in colour, yellow, orange and white mixed with purple.

The major producing districts include Iganga, Bugiri, Nakasongola, Gulu, Arua and Kyenjojo, among others.

However from 1995 to 2023, scientists embarked on breeding improved sweet potato varieties thereby releasing over 29 varieties.

"Sweet potato is considered as an important crop and it is ranked as the fourth most important crop in Uganda in terms of production volumes, totalling to over 1.03 million metric tonnes after maize, cassava and banana. The area under production is 221,783 hectares," Dr Yada said, adding that his team has been engaging farmers across the country to embrace value addition by using the flour a confectionary material.

Research process

Dr Yada explained that the research involved collecting local varieties with light purple coloring such as Tumumesa and Kikuyu, crossing them with varieties provided by North Carolina State University in the USA.

The purple-fleshed sweet potato variety is all round variety mainly aimed at obtaining health benefits compared to other varieties.

"They are rich in Vitamin A and they contain Anthocyanins which are water-soluble pigments which may appear red or purple. They act as antioxidants fighting diseases which are likely to attack the body and they offer anti-inflammatory, anti-viral and anti-cancer benefits," said Dr Yada.

The team picked the vines with natural purple colour which were propagated using vegetative propagation.

These were planted together with varieties obtained from the North Carolina State University at NaCRRI and left to grow as cross pollination keeps occurring naturally by the bees.

Later the team selected 10 superior varieties which were taken for field trials in various geographical locations namely Rwebitaba Zonal Agricultural Research and Development Institute, Abi Zonal Agricultural Research and Development Institute in Arua and NaRRI.

The team further selected three superior varieties which tested in farmer fields in Arua, Abim, Nakapiripirit, Iganga, Kabarole, Mbali and Kamuli

During Research process the varieties were named as UG/2019/NC-149PF/OP-31 which has been released as Naropspot 8P.

Its yield rate 20.75 tons per hectare and it is resistant to Sweet potato virus, early blight and has high Anthocyanins content

The second variety is UG2019NC-149PF/OP-36 has released as Barospot 9P. It is high yielding because a farmer who follows best practices will be able to obtain 19.35 tons per hectare and it contains high dry matter with high Anthocyanins content.

The third variety is UG2019NC-149PF/OP-103 released as Narospot 10. The yield rate is 20.32 tons per hectare. It has high dry matter and resistant to the major viral diseases.

Value addition

According to Dr Yada, since the three varieties contain high dry matter and high Anthocyanins content, it can be used to process Beverages, Wine and nutritious juices.

As well as bakery and confectionery products such as specialised cookies, bread, doughnuts, cakes and composite porridge.

In Snack Industry it can be processed to make crisps as well as extraction of natural food colorants, providing a healthy alternative for the industrial bakery and confectionery sectors.

Advice to farmers

Dr Yada noted that the three varieties are already being multiplied in Kigumba where sweet potato farmer cooperative across the country can access breeder seed for further multiplication for farmer adoption

He advised farmers to adopt best practices especially during planting where the soil is expected to be wet to enable the vines to establish their roots

It is important for farmers to obtain clean vines which are free from pests and diseases.

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