New cassava variety developed

Cassava breeders at Mubuku field trial site harvesting cassava and explaining pollination of the different varieties to obtain seed
PHOTOS BY LOMINDA AFEDRARU

East African scientists have teamed up to breed new cassava varieties which are resistant to deadly viral diseases, writes **Lominda Afedraru**.

Cassava is an important source of food and income for smallholder farmers in several African countries, including Uganda because it grows well in conditions of drought and low soil fertility.

However, viral diseases especially Cassava Brown Streak Virus (CBSV) and Cassava Mosaic Virus (CMV) can destroy up to 100 per cent of a cassava crop which can lead to hunger.

According to reports by scientists, healthy cassava harvests could increase incomes for more than half of the households in cassava-growing regions of Uganda and Kenya.

As such, scientists in the region established partnership with the Virus Resistant Cassava for Africa (VIRCA) project in 2006 which includes African and international organisations working together to develop effective solutions for the control of cassava viral diseases.

VIRUSES
Cassava Brown Streak Virus (CBSV) and Cassava Mosaic Virus (CMV) are the viral diseases eating up several cassava gardens

VIRCA is a collaborative research and development programme established by the Donald Danforth Plant Science Center in USA, the National Crops Resources Research Institute (NaCRRI) Uganda and the Kenya Agricultural and Livestock Research Organisation (KALRO).

Speaking to *Seeds of Gold magazine*, scientists at VIRCA have revealed they are using genetic modification techniques to improve resistance CBSD and CMV to help cassava farmers obtain better harvests.

Breeding work is ongoing both in Kenya and Mubuku Irrigation Scheme in Kasese where scientists are selecting varieties that will resist both CBSV and CMV for onward distribution to farmers in the near future.

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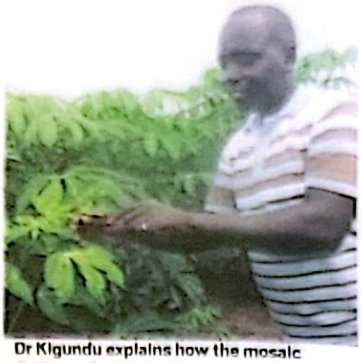
Dr Andrew Kigundu, project manager of VIRCA while explaining the breeding process notes that the team obtained genes from cassava variety called TME204. The genes with resistance to CBSV are then introduced to Nase14 and 19 varieties.

The transgenic variety TME204 with resistance to CBSV has been planted at Kasese at the field trial as well as Nase 14, 19 and 3 which has resistance to CMV.

The team made crosses to these plants and obtained seeds which are being grown under green house in Namulonge to get plants that will resist CBSV and CMV.

Dr Kigundu explained that in two months' time the plants will be transferred from the green house to the field in Namulonge.

More selection will be done where issues of taste, yield potential, disease resistance will be evaluated so that farmers are given the best variety.



Dr Kigundu explains how the mosaic destroys the cassava

Breeding

Solomon Agenonga, the lab technician who is pollinating the plants explains that once the cassava plant begins fruiting, it is covered with a net material for 30 minutes and thereafter, it is opened and the male flower is spontaneously rubbed against the female.

Agenonga says once the colour changes yellowish; it is an indication that pollination has taken place.

It takes three months for the pollinated fruit to produce seed and thereafter it is dried and scientists use this seed for growing resistant plants in the green house at Namulonge.

Oscar Oyo, the field trial manager at Mubuku Irrigation Scheme in Kasese explained that so far the transgenic varieties are high yielding compared to the conventional ones.

Agronomy

When harvesting, farming communities in Kasese are brought on board to witness and Oyo says despite the fact that the stalk is on test, many of them demand it.

Giving the general agronomy of conventional varieties, Oyo explained that Nase 3 and 14 varieties stay longer in the soil with a minimum of three years minus the tubers getting rotten.