

FARMING *Innovations*

Creative solutions to the challenges you face on your farm

THE CHALLENGE

Spraying against white flies that affect cassava is expensive and tiring

THE SOLUTION

Farmers are advised to plant disease-free cuttings



White flies on cassava plant

Disease resistant cassava a work in progress

By Prossy Nandudu

Farmers searching for cassava varieties that are resistant to the cassava brown streak and cassava mosaic diseases will have to wait for three more years to get resistant varieties.

This is so because researchers are still evaluating resistant varieties through biotechnology and it will take another three years for such plants to be released to the market.

This is according to Dr Henry Wagaba, a researcher with National Agricultural Research Organisation (NARO) working with the VIRCA Plus project.

The genes being used to produce cassava resistant to the two diseases was obtained from pieces of information of the viruses that cause them.

The genes were then inserted into varieties that are susceptible to cassava brown streak disease, Wagaba explained. "Once that gene is introduced, cassava plants are able to recognise it and fight the virus," Wagaba said.

He was recently taking journalists through the processes of developing varieties that are resistant to cassava brown streak and cassava mosaic diseases.

When did research start?



Prof. Otim Nape visiting Sam Opio, a cassava farmer based in Pakwach district

Research in genetic engineering for resistance to cassava brown streak disease and the cassava mosaic disease started over eight years ago according to Wagaba. Research has taken long because there are few sources of traits to speed up the process.

Causes of disease

Cassava brown streak is caused by a virus which lives in the leaves, stems and roots of infected plants. It is spread through planting cuttings from stems of infected plants and

by small insects called white flies.

The insects spread the disease when they feed on the leaves of plants that have been attacked by cassava brown streak and then feed on healthy crops.

The disease is then transferred from the infected cassava plant to the healthy ones.

The two diseases are spread through the use of the infected planting materials

Spraying white flies

Wagaba said spraying white flies is costly and tiring because they hide in the leaves and spread faster.

It also involves turning the leaves upside down to get the flies that could be hiding underneath.

By the time a farmer is done spraying one acre or two, they will be exhausted, "The other option is looking out for resistant varieties in addition to planting materials that are free from diseases," added Wagaba. In the meantime farmers are advised

Symptoms of brown streak disease

Cassava brown streak disease is caused by a virus. The disease can be noticed by yellowing on parts of the leaves, brown streak on stem and petioles, rotten parts on the roots which sometimes have a brown or yellow colouration when roots are cut. The disease can decrease the quality of roots produced making them not edible.

Cassava mosaic disease is commonly known as "ekigenge" the local word for leprosy. Sick plants have pale green and yellowish patches on the leaves. The sick plants are often small. They do not grow to their normal height. Sick plants have small leaves and tubers.

The disease is also spread by the whitefly, which lives under the leaves. The germs live inside the plant and the disease is transmitted when people move sick plant cuttings.

to grow the newly developed tolerant cassava varieties such as NARO-CASS1, NARO-CASS2 and NASE14.

Impact on the economy

Annually over 60,000 hectares of cassava, equivalent to over 600,000 tonnes (\$60m) of fresh cassava roots are lost to cassava brown streak and cassava mosaic diseases according to Otim Nape from the African Innovations Institute.

Disease prevention

Prof. George William Otim Nape from the African

Innovations Institute, a non-government organisation working on cassava diseases, explained that they can be contained through planting clean matter.

He, however, adds that such materials can be got from Certified Cassava Seed Entrepreneurs.

Nape explained that through Agriculture and Food Research Initiative (AFRI) they have trained a number of cassava seed entrepreneurs across the country, to produce cassava seed free from diseases, using new cassava plants fresh from the laboratories.