CASSAVA BROWN STREAK DISEASE

HOW CAN THE DISEASE BE RECOGNISED?

On the leaves - leaf symptoms can be seen on young plants, often only on the lower leaves. Yellowing can be seen around the smaller veins on the leaf surface [Fig. 1.]. Leaves are not deformed and the plant may look healthy. In very susceptible varieties the ends of the branches may lose their leaves and plants become stunted.

Fig.1. Cassava leaf showing typical symptoms of CBSD

On the roots - symptoms become visible when the plants are harvested and the roots are cut. Yellow, brown corky patches [Fig.3] that begin as small specks but increase in size as the plants age can be seen in the white, starch tissue. In susceptible varieties the whole root may eventually be affected. CBSD root necrosis is a dry rot and soft rot occurs in wet conditions when the infection is advanced. Root symptoms cause some loss in root weight in susceptible varieties, but the main loss of yield occurs because the damaged areas have to be cut away when chips are prepared for drying.

WHAT CAUSES THE DISEASE?

Cassava brown streak disease [CBSD] is caused by a virus that affects most cassava varieties, although in some varieties the roots are less affected than in others. The disease is found mainly in the coastal and lowland areas of Tanzania, Kenya, and Mozambique. In Malawi CBSD is found in the lowlands close to the shore of Lake Malawi. CBSD does not appear to spread in cassava crops grown at altitudes above 1000 metres.

WHERE DOES THE INFECTION COME FROM?

The virus is contained in the stems of infected plants. If cuttings are taken from infected plants, the disease will appear in the new plants when they sprout. This is the main way in which the disease is spread. The virus may be transmitted also by an insect, but this has not been confirmed.

Fig.3. Cassava roots showing yellow/brown dry rot due to CBSD
HOW CAN CBSD BE CONTROLLED?
The disease can be controlled in three ways:

1. Take cuttings for planting only from plants that do not show any symptoms of CBSD in the leaves or roots.

2. Sometimes plants not showing symptoms may carry the virus. As a result, some plants may sprout with symptoms, although cuttings were taken from plants without visible symptoms. In this case, if the numbers of plants with symptoms are few, pull them out at an early stage and replace them with cuttings from other plants with no symptoms.

3. Grow resistant varieties. Naliendele Research Institute in Tanzania, in collaboration with NRI, has identified a number of varieties with some resistance to CBSD. Similar work is being done in Malawi with the National Root Crops Programme and IITA through the Southern Africa Root Crops Research Network [SARRNET].

At present, all or most of the local varieties grown in Malawi appear to be susceptible to CBSD root necrosis. However, some may be less susceptible than others, and some of those that are early-maturing, may reach full bulking before root necrosis becomes severe.

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