

Losses caused by CBSD

- CBSD causes both quantity and quality loss of cassava storage roots
- In susceptible varieties, the losses can be up to 100%
- Roots showing CBSD symptoms are not fit for human and animal consumption

How cassava CBSD spreads

Spread through CBSV-infected planting material:

The main source of CBSD is cassava plants affected by the disease. CBSD spreads when cuttings taken from a diseased plant are used as planting material. The new plants that sprout from the cuttings will have CBSD. Sometimes the plant may be carrying CBSV without showing symptoms. This occurs if the plant has only recently been infected or when the variety is tolerant. Since the virus is already in the plant, CBSD symptoms may eventually appear and the virus can be spread to other plants by the insect vector.

Spread whiteflies: The virus (CBSV) is spread from plant to plant by small white insects called whiteflies, just like the malaria parasite is carried by mosquitoes. The whiteflies feed on the sap/fluid in the cassava leaves, just like mosquitoes feed on blood. The virus lives in the sap of the plant. While sucking on the leaves of an infected plant, the virus is carried along with the sap into the body of the whitefly. If the same whitefly later feeds on a healthy plant, it will transmit the virus to the healthy plant.

What should be done to manage cassava brown streak disease?

- Always get planting materials (stem cuttings) from clean CBSD-free plants
- Select planting materials from gardens without history of CBSD
- Plant CBSD and cassava mosaic disease resistant/tolerant varieties. In the meantime, varieties that are resistant to CMD and moderately tolerant to CBSD include NASE 3, MH 97/2961, and MM 96/4271. The National Cassava Programme of NARO is developing better varieties that have higher levels of resistance to CBSD.

Those multiplying cassava planting materials should:

- Be trained in proper identification and management of CBSD
- Regularly inspect their fields for CBSD using trained personnel.
- Rogue out all plants showing symptoms of CBSD
- Distribute cassava stems only when the health status has been approved by trained inspectors and a movement permit officially issued.



For further information contact:

**Agriculture Office at your
sub-county / District**

OR

NARO

OR

**The National Cassava Programme at
NaCRRI, Namulonge
Tel: 0414 573016**



**NATIONAL CROPS RESOURCES
RESEARCH INSTITUTE (NaCRRI)**



**Know
Cassava Brown
Streak Disease**

A devastating disease of cassava



What is cassava brown streak disease?

Cassava brown streak disease (CBSD) is a devastating disease that reduces yields of cassava and causes rotting of the storage roots. The spoiled roots can not be eaten. CBSD is caused by a virus called cassava brown streak virus (CBSV). A virus cannot be seen with the naked eye and only survives inside a living organism. CBSV damages the leaves, stems and storage roots of cassava, resulting in poor yield. CBSD is now present in Uganda, Kenya, Tanzania, Malawi, Mozambique and Rwanda.

How to recognize cassava brown streak disease

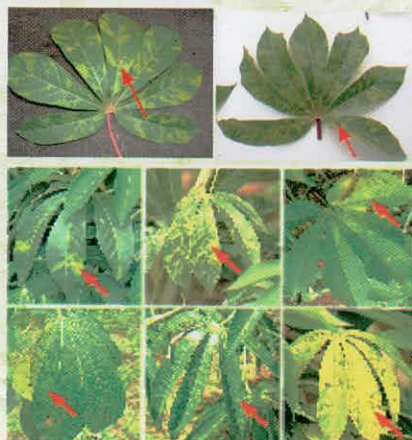
Symptoms of CBSD can be observed on leaves, stems and cassava roots. While some varieties can show symptoms on leaves, stems and roots, others may only show symptoms on leaves and not on roots.

Some varieties do not show symptoms on leaves but on roots only. The symptoms may appear and disappear in young plants but are most visible in old cassava plants, especially on the lower mature leaves. In many varieties, young leaves at the tip of the plant do not show CBSD symptoms. So, whenever the old leaves drop off, the plants may appear healthy, when in fact, they have CBSV.

Symptoms of CBSD on leaves

- Thin yellow lines or patches along the small veins mixed with normal green colour. The yellowing is also referred to as chlorosis of the leaf.

- The yellow lines or patches are larger and clearer on older leaves which are at the lower part of the plant
- In mature cassava plants, the yellowing on the lower leaves becomes larger until most of the leaf is yellow and only the small veins remain green
- Leaves showing CBSD symptoms retain their normal shape and are not distorted in shape as in plants affected by cassava mosaic disease



Symptoms of CBSD on stems

- Dark brown 'streaks' on the stem
- The 'streaks' appears as scratch like wounds in some varieties
- These streaks can be most clearly seen on upper, young green portions of the stem
- In very susceptible varieties, the shoot tips may dry and fall off and this condition may progress to affect the whole cassava, and is called 'stem die-back'
- Eventually the whole plant may dry and die



Symptoms on cassava storage roots

- Sections of the edible part of storage root turn brown or yellowish and hard
- The dry and hard brown root rot consisting of dead tissue becomes evident
- In very susceptible varieties, CBSD causes deep constrictions, twisting and reduction in size (shrinking) of the storage roots (string of beads appearance)
- The outer skin of the storage roots may develop deep cracks on the surface

