

Cassava brown streak disease: symptom recognition and management

Cassava is the main staple food crop in many parts of Zambia. Among the important attributes of the crop is that it grows in a wide range of environments (including soils with low fertility) and withstands long periods of low moisture in the soil.

The productivity of cassava in Zambia is low due to deleterious effects of diseases which include cassava brown streak disease (CBSD), cassava mosaic disease (CMD) and cassava bacterial blight.

Symptoms

CBSD affects all plant parts. However, the disease may either appear on the leaves (Figure 1), stem and or root (Figure 4). The symptoms are characterised by chlorosis and necrosis on infected leaves giving them a yellowish mottled appearance. Chlorosis may be associated with the veins, spanning from the mid vein, secondary and tertiary veins (Figure 1), or in blotches unconnected to veins. Brown streak may appear on the stem hence the name, CBSD. A number of factors affect symptom expression including variety, crop age, virus strain, environment (i.e. altitude, rainfall). Healthy leaves do not show any symptoms (Figure 2).

Transmission and spread

Cassava brown streak is transmitted by whitefly (*Bemisia tabaci* biotype B, the silverleaf whitefly) (Figure 3) from plant to plant within and adjacent fields; however, use of infected cuttings as planting material also contribute to the spread of the disease.

Distribution and prevalence

Cassava brown streak has not been detected in Zambia; however, it occurs in some of the neighbouring countries including Malawi, Mozambique, Tanzania and Democratic Republic of the Congo.

Effects on growth and yield

Cassava brown streak causes up to 100% yield loss as root rot renders the cassava tuber inedible, resulting in severe loss of economic value (Figure 4).

Management

The disease can be managed by: i) removing of diseased plants from within and surrounding fields and, ii) using CBSD free stem cuttings as planting material.

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Figure 1: Leaf showing vein chlorosis



Figure 2: Healthy cassava leaf



Figure 3: Whitefly (*Bemisia tabaci*) vector of CBSD



Figure 4: Concentric rings on cassava root. Insert: showing corky brown rot

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