Pacific Pests, Pathogens, Weeds & Pesticides - Online edition

Cassava brown streak disease (439)

Summary

- Restricted. Predominantly, East and Central Africa, uncommon in West Africa. It is NOT recorded in Oceania.
- Serious disease of cassava, wild cassava and weeds. Annual losses from Kenya, Malawi, Tanzania, Uganda put at US$750 million, increasing as CBSV spreads across the cassava belt of Africa.
- Symptoms vary according to variety and environment. Yellow patches occur along secondary veins, sometimes joining together. Streaks appear on the young green stems. Roots are often smaller than normal, show constrictions, and have dark brown dry rots in the flesh. Dieback occurs in the most susceptible varieties.
- Spread over a few metres by whiteflies, *Bemisia argentifolia* (**see Fact Sheet no. 284**). Longer distances by exchange of planting material. Infestations over 1000 masl now common, possibly due to increase in whitefly populations.
- Biosecurity: prohibit unregulated cassava introductions; follow FAO Technical Guidelines for cassava germplasm moved internationally; use only virus-tested tissue cultures.
- Cultural control: plant cuttings only from healthy plants; preferably, use certified cuttings; rogue infected plants; at harvest, collect and destroy infected plants.
- Chemical control: avoid broad-spectrum insecticides - repeated use will promote resistant whitefly populations; use white oil, horticultural oil or soap (**see Fact Sheet no. 56**).

Photo 1. Symptoms of cassava brown streak disease mostly following the secondary veins, and the veins from them.

Photo 2. Cassava brown streak disease showing that the older leaves are those with symptoms.

Photo 3. Patches developing from the secondary veins have joined with those from adjacent veins.

Common Name

Cassava brown streak disease

Scientific Name

Cassava brown streak virus and *Ugandan cassava brown streak virus* are the cause of the disease. The abbreviations of these viruses are CBSV and UCBSV), respectively. The virus particles are flexuous rods, about 650 nm. Severe and mild isolates exist.

Photo 4. Dark streaks on a young green stem caused by *Cassava brown streak virus*.

Photo 5. Constrictions on roots of a plant infected with *Cassava brown streak virus*.

Photo 6. Brown dry rots in cassava roots infected with cassava brown streak disease.

Photo 7. Brown dry rots in cassava roots infected with cassava brown streak disease.

Photo 8. Whiteflies, presumably, *Bemisia agentifolia*, vector of the cassava brown streak viruses.

Photo 9. Cassava mosaic disease (CMD) symptoms in a field in Tanzania. Note leaf is severely deformed.

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Information from [1]CABI (2020) Cassava brown streak viruses (cassava brown streak disease). Crop Protection Compendium. (https://www.cabi.org/cpc/datasheet/17107); and Tomlinson KR *et al.* (2018) Cassava brown streak disease: historical timeline, current knowledge and future prospects. Molecular Plant Pathology 19(5):1282-1294. (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5947582/); and Amisse JJG *et al.* (2019) First report of cassava brown streak viruses on wild plant species in Mozambique. Physiological and Molecular Plant Pathology 105:88-95. (https://doi.org/10.1016/j.pmpp.2018.10.005); and from Cassava brown streak disease: control measures, Uganda. National Crops Research Institute, Namulonge, Kampala, Uganda. Food and Agriculture Organization of the United Nations. (http://www.fao.org/3/CA2940EN/ca2940en.pdf). Photos 1-5,&7,8 Stephen Winter, Department of Virology, DSMZ-German Collection of Microorganisms and Cell Cultures, Braunschweig, Lower Saxony, Germany. Photo 6 Abigail Rumsey International Institute of Tropical Agriculture (Flickr). Ibadan, Nigeria. Photo 9 H. Holmes/RTB Cassava mosaic disease (CMD) symptoms in a field in Tanzania. Root, Tubers and Bananas. CGIAR.

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