



First report of Ugandan cassava brown streak virus on cassava in Democratic Republic of Congo

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Ugandan cassava brown streak virus (UCBSV) and Cassava brown streak virus (CBSV) (Potyviridae: Ipomovirus) are causal agents of cassava brown streak disease (CBSD), a disease of cassava that presents a significant threat to the food security of East and Central Africa. The disease affects all parts of cassava, but notably the storage roots, making them unsuitable for consumption (Fig. 1). Although CBSD has been recognised from coastal East Africa since the 1930s (Storey, 1936), it is only in recent years that outbreaks have occurred in higher altitude areas of the Great Lakes region (Alicai *et al.*, 2007), including parts of Uganda, western Kenya and northwestern Tanzania. In these regions, both UCBSV and CBSV (collectively referred to as CBSVs) have been reported (Mbanzibwa *et al.*, 2011, Adam *et al.*, 2012). More recently, the occurrence of CBSD has been confirmed in Burundi, although only UCBSV was detected (Bigirimana *et al.*, 2011), with further unpublished records made for CBSD in Rwanda and the Democratic Republic of Congo (DRC). In DRC, visual observations of suspected CBSD symptoms have not been corroborated by laboratory tests.

In September 2011, leaf symptoms consistent with CBSD were observed during a field inspection of a cassava field [cultivar MAYOMBE (MM96/7752)] under cultivation for producing planting material in the village of Vuyinga, Lubero District, North Kivu Province, eastern DRC (N 00.07052, E 29.04829, Altitude 1231m). For verification of the identity of the causal organism, leaf samples of affected plants were collected, dried, and sent to the Food and Environment Research Agency in the UK for analysis by real-time PCR, as described by Adams *et al.* (2012). It was confirmed that the leaves were positive for UCBSV and negative for CBSV (GenBank Accession No. JX291144). Additionally, positive interceptions of UCBSV were subsequently recorded during the same growing season in five out of seven multiplication fields in Lubero (highest prevalence of 18.3%), but not in multiplication sites of other Districts. From an additional survey of over 100 farmer fields, UCBSV was identified only in two fields in Lubero and Beni Districts. These are the first confirmations of CBSD caused by UCBSV in DRC. CBSV has not been observed.

The multiplication fields within which UCBSV was confirmed were fields under the Great Lakes Cassava Initiative (GLCI, www.iGLCI.org). The field inspection and further testing of the material for CBSVs forms part of the GLCI standard practice to intercept infected materials and minimise

the risk of spreading CBSVs through planting material. Under the GLCI best practice, the field material was rejected for use as planting material and designated for consumption. The original source from which the UCBSV may have originated is not known. The confirmation of the presence of CBSD in eastern DRC highlights the need to conduct a more comprehensive and wide-ranging assessment of the disease in DRC, and to apply appropriate phytosanitary measures in order to minimise the risk of further spread.

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Figure 1

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