NEW DISEASE REPORT

New hosts of *Turnip mosaic virus* in Zimbabwe

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Necrotic rings, lines and spots were observed on approximately 90% of cabbage (*Brassica oleracea* var. *capitata*) plants growing in a field in Harare. Inspection of cabbages in nearby fields, and in retail outlets, showed that these symptoms were widespread. A virus isolated from an affected plant and established as a single-lesion culture, by serial passage in *Chenopodium quinoa* (chlorotic/necrotic local lesions, no systemic infection) produced symptoms typical of *Turnip mosaic virus* (TuMV) in a range of indicator plants. TuMV was confirmed in cabbage and *C. quinoa* sap by protein A sandwich-enzyme linked immunosorbent assay (PAS-ELISA), using antiserum to a UK isolate of the virus. All PAS-ELISA tests included positive and negative (healthy) controls, and test samples were considered positive if their means at absorbance reading 405 nm (A_{405}) exceeded negative controls by more than three times the standard deviation and were significantly different ($P < 0{\cdot}05$).

Rothwell (1983) lists *B. oleracea* as the only previously known host for TuMV in Zimbabwe. In a survey of TuMV in crop and wild hosts in the Harare region within 1–2 km of the present outbreak, sap samples from the following hosts tested positive in PAS-ELISA and induced diagnostic symptoms in *C. quinoa*. These included the dicotyledons *Amaranthus hybridus*, *Brassica juncea*, *Conyza sumatrensis*, *Galinsoga parviflora*, *Portulaca oleracea*, *Sida alba*, *Sonchus oleraceus* and *Hibiscus esculentus*, as well as the monocotyledons *Commelina bengalensis* and *Musa sapientum* (banana). *Bidens pilosa* and *Cyperus esculentus* (monocotyledons) also tested positive for TuMV in PAS-ELISA, although sap was not infectious. With the exception of *B. juncea* and *H. esculentus*, the above species are apparently new hosts of TuMV (Broadbent, 1957; Stobbs & Stirling, 1990). *Calanthe* sp. (Orchidaceae) is the only other monocotyledonous host reported for TuMV (Brunt *et al*., 1990).

In tests, the aphids *Myzus persicae*, *Brevicoryne brassicae* and *Aphis fabae* transmitted the virus nonpersistently between infected and healthy cabbage plants in Zimbabwe, and may have been responsible for local spread of the virus. Further work is needed to establish whether infection of *Musa* and other apparently new hosts is associated with disease.

References

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