Plant Pathology Journal

ISSN 1812-5387

science alert

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Plant Pathology Journal 7 (1): 118-119, 2008
ISSN 1812-5387

Leaf Petiole and Stem Blight Disease of Sweet Potato Caused by *Alternaria bataticola* in Uganda

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Alternaria leaf petiole and stem blight is an important disease of sweet potato (*Ipomoeae batatas*) in East and Central Africa. In surveys conducted from 2001 to 2003, disease incidences ranged from 1 to 49% in Uganda (Osiru *et al*., 2007). Symptoms typical of *Alternaria* leaf petiole and stem blight disease were observed on sweet potato. Symptoms initially manifested as small, dark gray to black oval lesions with lighter lesion centers on stems and petioles. Under humid conditions, lesions enlarged on stems and petioles resulting in petiole and stem girdling (Fig. 1). Some leaves exhibited chlorotic and dry symptoms, while brown circular lesions with concentric rings were observed on older diseased leaves. In severe cases, defoliation occurred and soil beneath diseased vines was carpeted with blackened leaf debris (Fig. 2).

To confirm the pathogenicity of *Alternaria* sp. on sweetpotato, the pathogen was isolated from vines and leaves showing characteristic symptoms of *Alternaria* disease and cultured on Sweet Potato Decoction Media (SPDM) and Potato Dextrose Agar (PDA). Pathogenicity tests (inoculation and re-isolation) conducted on leaves of two sweet potato cultivars, New Kawogo (CIP 441743) and NASPOT 1 (NIS/91/52), resulted in the typical symptoms above. All isolates showed similar conidia morphology, shape, size and number of septae (Fig. 3). Conidia were solitary, pale brown to brown elongate-obclavate, with two directional septae. The muriform, transverse septae were 5-8 and longitudinal sepate were 2-4. The average dimensions of 40 conidia obtained from colony grown on PDA were 46 μm (34-160 μm range) × 19 μm (15-42 μm range). These data were similar to those reported by Van Bruggen (1984) and were in contrast to

(a)

(b)

Fig. 1(a,b): Black lesions girdling sweetpotato stem and petioles

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Fig. 2: Characteristic debris under plants infected by *Alternaria* sp.

Fig. 3: Conidia of *A. bataticola* isolated from cultivar NASPOT 1

the beakless conidia observed by Lopes and Boiteux (1994). The representative isolates were identified as *Alternaria bataticola* and deposited at the CABI Plant Health Clinic.

There have been frequent observations of disease caused by *Alternaria* sp. on sweet potato cultivars in farmers' fields in many districts of Uganda and in research plots particularly in central and South-Western Uganda. The disease reports from farmers' fields and research observations (Osiru *et al*., 2007) have indicated yield losses of over 70% depending on the cultivar and cropping season. Due to the fact that sweet potato is a very significant crop in Uganda, cultivated by approximately 75% of households in the country, pathogen identification is crucial for effective disease management in sweet potato production in this region. This communication confirms previous record of sweet potato leaf petiole and stem blight disease caused by *A. bataticola* in Uganda (Osiru *et al*., 2007).

ACKNOWLEDGMENTS

We greatly acknowledge the work of CABI-Biosciences scientists in isolations, identification and confirmation of pathogen species as well as in manuscript revision.

REFERENCES

Lopes, C.A. and L.S. Boiteux, 1994. Leaf spot and stem blight of sweetpotato caused by *Alternaria bataticoli*; a new record to South America. Plant Dis., 78: 1107-1109.

Osiru, M., E. Adipala, O.M. Olanya, B. Lemaga and R. Kapinga, 2007. Occurrence and distribution of *Alternaria* leaf petiole and stem blight on sweetpotato in Uganda. Plant Pathol. J., 6: 119-119.

Van Bruggen, A.H.C., 1984. Sweetpotato stem blight caused by *Alternaria* sp., a new disease in Ethiopia. Netherlands J. Plant Prot., 90: 155-164.