



First Report of *Colletotrichum asianum* causing anthracnose on Willard mangoes in Sri Lanka

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The mango (*Mangifera indica*) is an important fruit crop in Sri Lanka with a total mango production of 67,941 metric tons per annum, on 26,120 ha (FAO, 2010). Willard mangoes grown in Jaffna district (9°40'N and 80°00'E) are also popular in other parts of the country. These mangoes are in high consumer demand due to their attractive colour, unique flavour and aroma. However these mangoes are susceptible to anthracnose that is the major factor limiting fruit production in all mango growing areas of the world. It is the most common disease of mangoes in Sri Lanka and causes severe losses during wet weather.

Mature mango fruits cv. Willard were harvested from a home garden in Kerudavil, Jaffna district and fruits were allowed to ripen. Small, dark brown circular spots formed at first, increased rapidly in size and coalesced to form dark depressed anthracnose lesions in ripened fruit. Lesions that had been surface sterilised were transferred to potato dextrose agar (PDA) under aseptic conditions and incubated in the dark at ambient temperature (30 ± 2°C). Isolated colonies on PDA were initially off-white, turning to light greyish green at the centre and becoming blackish green 72 hours after inoculation with a diameter of approximately 28 mm. The reverse side of culture plates was dark coloured in the centre with an off-white perimeter. Conidia were unicellular, hyaline and oblong (Prihastuti *et al.*, 2009).

A small amount of mycelia was scraped from a seven-day-old culture and the internal spacer region (ITS) of the extracted fungal DNA was amplified with universal primers ITS1 and ITS4. The resulting sequence (566 bp) was submitted to the NCBI GenBank (Accession No.KC820803, Isolate WCC1). A blast search of ITS sequences in NCBI revealed that this fungus was *Colletotrichum asianum* with 100% query coverage with FJ972615 and 99% query coverage with JX010192, JX010193 and FJ9726125.

Pathogenicity of the isolate obtained from Kerudavil was determined by inoculating healthy Willard mangoes after wounding with 5 mm mycelial discs excised from a seven-day-old PDA culture. Control mangoes were treated similarly except uninoculated agar was used. Mangoes were incubated at ambient temperature. Inoculated mangoes developed typical symptoms of anthracnose whereas control mangoes remained healthy. *C.*

asianum was successfully re-isolated from inoculated fruits, fulfilling Koch's postulates. Mango varieties are known to vary in response to anthracnose infection. Florigon, Tommy Atkins, Carrie, Edward, Early Gold, Keitt and Julie are varieties resistant to anthracnose whereas Haden, Irwin, Kent, Sensation and Zill are susceptible (Pernezny & Ploetz, 2000). Among local varieties Karuthakolumban and Ambalavi are resistant whereas Willard and Chembaddan are susceptible to anthracnose. In India losses due to anthracnose have been estimated to be 2-39% (Prakash, 2004). *C. asianum* was reported on mango from Australia, Panama, Philippines, Thailand and Brazil and on *Coffea arabica* from Thailand (Weir *et al.*, 2012; Lima *et al.*, 2013). To the best of our knowledge this is the first report of anthracnose caused by *Colletotrichum asianum* on mangoes in Sri Lanka.

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