Diseases Caused by Fungi and Fungus-Like Organisms

First Report of Target Spot on Tomato Caused by *Corynespora cassiicola* in Mauritius

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Tomatoes (*Solanum lycopersicum*) represent one of the most frequently consumed vegetables in Mauritius after potatoes and onions. The value of the tomato industry is estimated to be around Rs 300 M in Mauritius, with an annual production of 18,376 t over an area of 1,365 ha (Cheung Kai Suet 2019). In August 2019, disease surveillance was conducted in the tomato cultivar ‘Elipida’ grown in the greenhouse situated at Camp Thorel (eastern part of Mauritius), a superhumid zone where the prevailing temperature and humidity were 30°C and 70%, respectively. The symptoms included numerous circular to irregular, dark brown, target-like lesions on the leaves, followed by the occurrence of a yellow halo and occasional defoliation. Disease incidence was estimated to be 80% in the entire greenhouse. From sampled symptomatic leaves, small pieces of infected tissue were surface disinfected with 1% sodium hypochlorite, air dried, and placed on PDA. After 7 days of incubation at 23°C under 12 h of natural light regime, isolates with fast-growing gray-brown, velvety colonies were recovered. In colonies, singly borne or in short chains, pale brown, cylindrical, straight or slightly curved conidia with two to 14 pseudosepta (34 × 2 µm) were numerous. Based on morphological features, the isolates were identified as *Corynespora cassiicola* (Berk. and M.A. Curtis) C.T. Wei (Dixon et al.

2009). Morphological identification was confirmed by amplifying and sequencing of the ITS region (ITS1, 5.8S rDNA, and ITS2 regions) of the rDNA. Total DNA was extracted directly from fungal mycelium using a DNeasy Plant Mini Kit (Qiagen, Hilden, Germany), following the manufacturer’s instructions. PCR amplification and sequencing were performed with primers ITS1F and ITS4 (Takamatsu et al. 2010). The nucleotide sequence of the representative isolate 408G-19/M (575 bp) (accession no. MN860167) was compared with those available in GenBank and shared 98 to 99.82% identity with over 100 *C. cassiicola* isolates (99.65% with FJ852578 from *Solanum melongena*; Dixon et al. 2009). Koch’s postulates were confirmed by spraying 10 healthy tomato plants (four-leaf phenophase) with spore suspension (1 × 10³ conidia/ml) prepared from 10-day-old colonies of isolate 408G-19/M in sterile water. Healthy tomato plants inoculated with sterile water served as a negative control. Plants were maintained in greenhouse conditions. On all inoculated plants, characteristic target-like necrotic spots were visible 7 days postinoculation. No symptoms were recorded in the negative control after 15 days. From all symptomatic tomato leaves, the original isolate was successfully recovered. So far in Mauritius, *C. cassiicola* has been reported on *Molucella* (Anonymous [Director of Agriculture] 1961) and *Bignonia* spp. (Orieux and Felix 1968) and also as an endophyte associated with *Jatropha* spp. (Rampadarath et al. 2018). Although symptoms resembling target spot were previously observed on field-grown tomatoes (Vally, *personal communication*), to our knowledge, this is the first study confirming *C. cassiicola* as a tomato pathogen in Mauritius. Because *C. cassiicola* affects a wide range of hosts (Lopez et al. 2018), including tomato, cucumber, zucchini, and banana, which are all important for Mauritius, the occurrence of this pathogen is a potential threat. Additionally, the results will help in developing efficient disease control strategies, thus minimizing yield loss of tomatoes produced locally.

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