Diseases Caused by Fungi and Fungus-Like Organisms

First Report of *Colletotrichum truncatum* Causing Anthracnose in Cassava in Brazil

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Plant Dis. 105:3745, 2021; published online as <https://doi.org/10.1094/PDIS-03-21-0571-PDN>. Accepted for publication 23 May 2021.

Cassava (*Manihot esculenta* Crantz) presents significant economic importance in Brazil and other developing countries due to its use in human and animal feeding. In 2019, cassava plants sampled in Pará State (Brazil) presented necrotic and irregular leaf spots, characteristic symptoms of cassava anthracnose. About 90% of the plants were symptomatic, and disease severity was higher during months with high temperature and humidity. Fragments of symptomatic tissues were removed from the lesion transition area, surface disinfested (45 s in 70% ethanol, 1 min in 1% NaOCl, and rinsed twice in sterile water), and plated on potato dextrose agar. Cultures were incubated at 25°C under continuous light for 7 days. Among the obtained isolates, seven presented gray felt-like mycelium with white sectors, reverse grayish, and hyaline, aseptate, smooth-walled, falcate conidia with average size 20.7 to 30.7 (26.1 ± 2.1) $\times$ 2.4 to 4.8 (3.5 ± 0.5) μm . Phenotypical features were similar to *C. truncatum* (Damm et al. 2009). The representative isolate UFT/Coll87 was chosen for further assays. The identity of the isolate was determined by maximum likelihood analysis using sequences of actin (ACT, GenBank accession number MT321653), β -tubulin (TUB2, MT856673), and

glyceraldehyde-3-phosphate dehydrogenase (GAPDH, MT800857) partial regions. The *Colletotrichum* isolate from cassava nested with *C. truncatum* isolates in a clade with 100% support, being confidently assigned to this species. Koch's postulates were fulfilled to confirm the pathogenicity of UFT/Coll87. Inoculation was carried out in three cassava plants by spraying a conidial suspension (10^6 conidia ml^{-1}) on unwounded leaves (three leaves per plant). Plants sprayed with sterile water represented negative control. Inoculated plants were kept in a humid chamber for 48 h, 25°C, and a 12-h photoperiod. The experiment was repeated two times. Typical cassava anthracnose symptoms were observed 10 days after inoculation. No symptoms were observed in the negative control. The pathogen was reisolated from symptomatic leaves and was phenotypically identical to the original isolate UFT/Coll87, fulfilling Koch's postulates. *C. fruticola*, *C. karstii*, *C. plurivorum*, and *C. siamense* were reported causing cassava anthracnose in China (Liu et al. 2019). In Brazil, *C. chrysophilum*, *C. fruticola*, *C. siamense*, and *C. theobromicola* were reported in association with cassava (Bragança et al. 2016; Machado et al. 2021; Oliveira et al. 2018). To our knowledge, this is the first report of *C. truncatum* causing cassava anthracnose worldwide. Our finding is important for disease management due to the high host range of *C. truncatum*. The pathogen can reduce the cassava yield, and the crop may serve as a potential inoculum source since it is commonly cultivated near to other crops that are also infected by *C. truncatum*.

References:

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The author(s) declare no conflict of interest.

Keywords: cassava, *Colletotrichum truncatum*, phylogenetic analysis, variability

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