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DISEASE NOTES



# First Report of *Geotrichum candidum* Causing Sour-Rot of Melon in Brazil

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Melon (*Cucumis melo*) is the most exported fruit in Brazil (224,000 tonnes), and the production increased by 10% in the past growing season. Currently, 22,000 ha are devoted to its cultivation in the country, and production has reached above 500,000 tonnes. The production is concentrated on the northeast semiarid area, particularly in Chapada do Apodi, between Rio Grande do Norte and Ceará States. Rio Grande do Norte State is responsible for 70% of Brazilian production of melon (**Brazilian Fruit Yearbook 2018**). In 2017, an incidence of a little over 50% of rotten fruits in a highly representative commercial field was detected in Canary melons from Mossoró municipality, Rio Grande do Norte. Sour-rot symptoms were observed mainly on the top of the fruit, at the floral insertion site. The lesions were dark and eventually progressed to epidermal cracks. The associated fungus was consistently isolated from symptomatic fruits and grown on potato dextrose agar (PDA), presenting white, flat smooth colonies with pale yellow reverse side. Mycelia were hyaline, with dichotomously branched septate hyphae. Arthroconidia were in long chains, hyaline, 1-celled, cylindrical to subglobose (1.1 to 4.5 × 6.6 to 4.3 μm). Morphological features were consistent with *Geotrichum candidum* (de Hoog et al. 1986). The genomic DNA was extracted with UltraClean Microbial DNA Isolation Kit (Mobio, Carlsbad, CA) and the internal transcribed spacer (ITS) was amplified

using the pair of primers ITS1 and ITS4 (Gardes and Bruns 1993). The obtained ITS sequence (GenBank accession no. MH185953) showed 100% identity with *G. candidum* (KF112070.1 and LC054542.1), corroborating the morphological identification. The isolate was deposited at the Collection of Microorganisms of Agricultural and Environmental Importance at Embrapa Meio Ambiente in Jaguariúna, São Paulo, Brazil (CMAA) as *G. candidum* CMAA-1616. To fulfill Koch's postulates, Canary melon fruit were disinfected with 1% sodium hypochlorite solution and rinsed in sterile distilled water. Thereafter, 5  $\mu$ l of pure conidia suspension of *Geotrichum candidum* ( $5 \times 10^7$  conidia  $\text{ml}^{-1}$ ) was deposited on a 3-mm diameter, 2-mm depth wound previously made on the melon fruit peel using a sterile nail. Eight fruits with four wounds per fruit were used. After inoculation, fruits were placed in a humid chamber at  $23 \pm 2^\circ\text{C}$  for 12 h, and thereafter maintained at room temperature ( $22 \pm 2^\circ\text{C}$  and  $70 \pm 2\%$  relative humidity). The development of symptoms was observed for 5 days. The causal agent was reisolated from the rotten peel and the pure culture of *G. candidum* was obtained. This is the first report of *G. candidum* on melon in Brazil. Sour-rot is a well-known disease of melon in other countries (Ceponis 1966) and can be listed as a potential postharvest disease for melon fruit in Brazil.

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