Title Fruit rot caused by *Penicillium italicum* on lemon (*Citrus aurantifolia*) in Colima, Mexico

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Abstract

Postharvest rotting caused by *Penicillium italicum* Wermer is responsible for significant economic losses of orange (*Citrus sinensis* (L.) Osbeck) and lemon (*C. limon* Burm. f.) worldwide, but until now was not described on lemons (*C. aurantifolia* (Chistm.) Swingle) in Mexico. During May 2002, we analyzed 400 fruits of lemon collected in the state of Colima, which is the most important lemon producer in Mexico. Rotting and softened areas covered with a white mycelium and blue conidia were observed on approximately 30% of the fruits. Affected tissue was plated onto potato dextrose agar (PDA) for fungal isolation and identification. Following the morphological criteria (1) and the internal transcribed spacer 1 (ITS1), 5.8S, and ITS2 region of the ribosomal DNA (2) (GenBank Accession No. DQ991463), the fungus was identified as *P. italicum* and deposited in the Colección Microbiana y de Cultivos Celulares CINVESTAV-IPN, México. For the pathogenicity test, the fungus was grown on PDA for 1 week. Four drops (15 µl each) of a sterile water suspension of 10^6 conidia per ml were placed in four wounds of 3 × 3 × 3 mm produced with a scalpel on the fruit surface. Five plastic boxes with six fruits each were placed in an environmental chamber at 12°C and 90% relative humidity. After 10 days, all fruit rotted in a similar way as naturally infected fruit on trees. Control fruits inoculated with sterile distilled water were symptomless. The test was repeated and the results were similar, confirming Koch's postulates. To our knowledge, this is the first report describing the isolation and pathogenicity of *P. italicum* on lemon (*C. aurantifolia*) in Colima, Mexico, which may have important implications in fruit quality and storage.