



First report of fusarium rot caused by *Fusarium circinatum* on sweet potato (*Ipomoea batatas*)

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A new rot disease was observed on sweet potato storage roots during a disease monitoring survey in 2015 and 2016 in Korea. The symptoms consisted of brownish discolouration on the surface of the storage roots. Surface sterilized (1% NaOCl for 5 min) storage root was cut into small pieces and transferred to PDA for 5–7 days at 25 °C. The pathogen was isolated, a pure culture was prepared and stored at the Sweet Potato Research Laboratory, Bioenergy Crop Research Institute, RDA, Muan (SPL15022 and SPL15044), Korea. After 10 days of incubation on PDA at 25 °C, the pathogen produced oval and single-celled microconidia with 3.3–(6.6)–10.1 × 1.3–(1.7)–2.6 μm in size. Macroconidia were usually 3 septate with no significant curvature, difficult to find and size ranged from 16.4–(21.1)–34.7 × 1.3–(3.7)–3.3 μm. Morphologically the pathogen was identified as *Fusarium circinatum* (Nirenberg and O'Donnell 1998). Identification was confirmed by amplifying and sequencing of the ITS

region (KY508367, KY508364) and EF-1α genes (KY508355, KY508352) by using ITS5/ITS4 (White et al. 1990) and EF1/EF2 (O'Donnell 2000) primers. Combined phylogenetic analysis (maximum parsimony) of the sequences showed they grouped in a clade with type strain of *F. circinatum* CBS 405.97 and a high bootstrap value (83%). Pathogenicity was tested with the representative isolate by inoculating spore suspension (1 × 10⁵ spore/ml) on healthy sweet potato storage roots, maintained in moistened clean boxes at 25 °C. Controls were inoculated with sterilized distilled water. After 10 days, symptoms on storage roots developed similar to those observed in the original storage roots and the control remained uninfected. Pathogen was reisolated from artificially inoculated storage roots to fulfill Koch's postulates. Interestingly a common pine tree pathogen *Fusarium circinatum* was found in sweet potato and to the best of our knowledge this is the first report from sweet potato.

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