

**Title** A tomato fruit rot caused by *Trichothecium roseum* in Brazil  
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#### Abstract

Fruit rots caused by distinct fungal pathogens are commonly observed on tomatoes (*Solanum lycopersicum* L.) throughout all major production areas in Brazil. Samples of fruits displaying white mycelial growth associated with a profuse salmon-color sporulation were collected in greenhouse-grown tomatoes in Brasília-DF in February 2011. The isolated fungus displayed pink-to-white colonies containing several conidiophores with conidia. Mycelia displayed hyaline hyphae as much as 4  $\mu\text{m}$  in diameter; conidiophores were simple or branched, 112 to 300 (360)  $\mu\text{m}$  long, and 2 to 4  $\mu\text{m}$  wide. Conidia were produced in basipetal chains (frequently clustered), were ellipsoidal to pyriform with oblique and prominent truncate basal scars, two-celled, hyaline, and (14-) 16 to 26 (-28)  $\times$  (6-) 7 to 10 (-12)  $\mu\text{m}$ . These characteristics allocated the specimen to *Trichothecium roseum* (Pers.). Koch's postulates were fulfilled for one fungal isolate by either spraying 10 intact fruits or by placing a drop of a spore suspension (adjusted to  $10^5$  conidia/ml) into three to five wounds created on 10 mature fruits of each of two tomato cultivars (Santa Clara and Dominador) by puncturing each fruit with a sterile needle. Five fruits of each cultivar were treated with sterile water as the mock-inoculated control treatment. Identical symptoms to those of the original fruit were observed only in the *T. roseum*-inoculated samples 5 to 7 days after using both inoculation procedures. Total DNA was extracted from a pure colony of the fungus growing on potato dextrose agar medium and used as template in PCR assays with the internal transcribed spacer (ITS)-4 (5'-TCCTCCGCTTATTGATATGC-3') and ITS-5 (5'-GGAAGTAAAAGTCGTAACAAGG-3') primer pair (2). A single amplicon of approximately 630 bp was observed and directly sequenced. Sequence analysis of the Brazilian isolate (GenBank No. JN081877) indicated identity levels of 99% with *T. roseum* isolates reported on *Leucadendron xanthoconus* in South Africa (GenBank No. EU552162) and isolates from strawberry fruits in South Korea (GenBank No. HM355750). However, phylogenetic analysis was unable to discriminate isolates of *T. roseum* from *Passalora* (GenBank No. EF432764) and *Fusarium* (GenBank No. GU183369) isolates, confirming the low genetic variability of the ITS region in Hypocreales (3). *T. roseum* has been reported to be infecting greenhouse

tomatoes in the United States (4) and causing postharvest disease of tomatoes in Argentina (1). To our knowledge, this is the first report of *T. roseum* infecting greenhouse tomatoes in Brazil.