

**Title** First report of brown rot caused by *Monilinia fructicola* in peach orchards in Ebro Valley, Spain

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### Abstract

*Monilinia fructicola* causes brown rot of stone fruit in India, Japan, the Republic of Korea, Oceania, and North and South America and is in the A2 list of quarantine organisms for Europe. *M. fructicola* was found in peach orchards for the first time in Europe in 2001 in France (4) and later in the Czech Republic (2). *M. fructicola* was not detected among 428 isolates of *Monilinia* spp. collected from Spanish peach orchards from 1998 to 2005. In March of 2006, *M. fructicola* was detected to be overwintering in three mummified peach fruit (cv. Autumn Free) trees in an orchard located in Sudanell (Lleida, Spain). Morphological and molecular identification of isolates were performed according to protocols previously described (1,3). The characteristics of these isolates were: i) colonies were entire and showing concentric rings of spores when grown on potato dextrose agar (PDA); ii) sporogenous tissues were gray to buff; iii) single and nearly straight germ tubes were at least 220  $\mu\text{m}$  long before branching; and iv) growth rates on PDA under long-wave UV/darkness were as much as  $20 \times 10 \text{ mm}^2$ . Isolates were further identified by a PCR test using primers developed with sequence-characterized amplification region markers obtained by random amplified polymorphic DNA for *M. fructicola*: IColaS (GAGACGCACACAGAGTCAG) and IColaAS (GAGACGCACATAGCATTGG) (3). The expected PCR product of 386 bp was produced only in *M. fructicola* isolates. Koch's postulates were fulfilled with the three isolates by inoculating five healthy fruit with a conidial suspension of each isolate ( $10^4$  conidia  $\text{ml}^{-1}$ ). Symptoms similar to those observed in the field were small brown spots, which rapidly showed brown rot. Noninoculated control fruit did not show symptoms. The fungus was reisolated on PDA from inoculated fruit after 4 days of incubation at 22°C, 80 to 100% relative humidity, and 16 h under fluorescent lighting,  $100 \mu\text{E}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ . To our knowledge, this is the first report of *M. fructicola* in peach orchards in Spain.