



Fomitopsis sp. causing brown rot in wood of living citrus trees reported for first time in southern Italy

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In the spring of 2008 a brown wood rot in 40-year-old orange trees (*Citrus sinensis* cv. Valencia late) was observed in an orchard in the province of Taranto, Apulia region, Southern Italy. Affected trees (about 20%), showed symptoms of leafchlorosis, twig dieback and branch breakdown. In the incipient stage of decay the wood showed a yellow-brown discoloration (Fig. 1), which progressed into a wood rot. The fungal mycelium, consistently isolated from decaying wood on potato dextrose agar (PDA), was white, slow growing, slightly raised and cottony-floccose (Fig. 2), with a distinct mushroom odour; hyphae were hyaline, thin-walled, nodose-septate and branched. Representative isolates had identical internal transcribed spacer (ITS) regions (GenBank Accession Nos. HM126455 to HM126460) and were identified as *Fomitopsis* sp. since their sequences showed 99-100% identity with available sequences in GenBank.

Pathogenicity of six representative isolates of *Fomitopsis* sp. was evaluated on twelve 30-year-old trees of lemon (*Citrus limon* cv. Femminello) (two trees per each isolate) and six of sour orange (*Citrus aurantium*) (one tree per each isolate). The inoculum consisted of sterilised wheat grains on which *Fomitopsis* sp. was grown for 20 days at 24°C. Isolates were inoculated on trees by inserting five wheat grains in 1.5 cm deep holes which were covered with wet gauze and mastic. Three branches were inoculated for each tree, while one branch, inoculated with five

sterile grains, served as a control. Brown discoloration of the wood and a crumbly rot extending 4-5 cm above and below from the inoculation hole were clearly observed eight months later in lengthwise sections of inoculated branches of lemon trees (Fig. 3). Less evident symptoms were also observed in sour orange wood, while control branches remained healthy. The causal agent was re-isolated and Koch's postulates were confirmed.

Fomitopsis spp. commonly attack both conifers and hardwoods (Ryvarden & Gilbertson, 1993), but also apple, pear, plum, cherry, and peach (Adaskaveg *et al.*, 1993). However, to our knowledge, this is the first report of *Fomitopsis* sp. causing disease on citrus. Sun-burning of branches and large wounds after heavy pruning, through which the pathogen gained entrance, could have been predisposing factors to such severe infections. The pathogen may represent a threat for bearing citrus orchards and surrounding woody plants since no control measure are available.

References

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Figure 1



Figure 2



Figure 3

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