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Disease Notes

First Report of Pitch Canker Caused by *Fusarium circinatum* on *Pinus halepensis* and *P. pinea* in Apulia (Southern Italy)

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Since 2005, pitch canker symptoms have been observed in Apulia (southern Italy, 41°27′42.84″N, 15°33′0.36″E) on numerous trees of *Pinus halepensis* and *P. pinea* in urban parks and gardens. Trees showed crown decline as a consequence of dieback of twigs and branches and withering of needles. Bleeding cankers with abundant resin were visible on twigs and branches. The needles of affected twigs and branches wilted, faded, turned yellow, then red, and were discarded. Isolations from symptomatic needles, twigs, and branches were performed on water agar, potato dextrose agar (PDA), and pentachloronitrobenzene medium. A species of *Fusarium* was consistently isolated from all infected tissues, and pure cultures were obtained by single hyphal tip transfers on PDA and synthetic nutrient agar medium (2). Colonies were incubated at 22 ± 3°C for 7 to 10 days. They produced white aerial mycelia, violet pigment, typically 3-septate macroconidia with slightly curved walls, single-celled microconidia, and characteristic sterile hyphal coils. Microconidia were ovoid or allantoid and born in false heads on aerial polyphialides. The species was identified as *Fusarium circinatum* Nirenberg & O'Donnell (= *F. subglutinans* Wollenweb & Reinking) on the basis of morphological and cultural characteristics (3). The identification was confirmed by PCR with specific primers CIRC1A/CIRC4A. The specific primer pair amplified a 360-bp DNA fragment of the two nuclear ribosomal IGS region (4). The pathogenicity of three Italian isolates of *F. circinatum* from *Pinus* spp. (Fc1640, Fc1642, and Fc1643 stored in the collection of Dipartimento Scienze Agroambientali, Chimica and Difesa Vegetale, University of Foggia) was evaluated by artificial inoculations on 2-year-old potted seedlings of *P. halepensis*, *P. pinea*, *P. nigra*, *P. sylvestris*, *P. domestica*, *P. pinaster*, *P. excelsa*, *P. radiate*, and *Pseudotsuga menziesii* (10 seedlings for each species and fungal isolate). Small PDA plugs from actively growing colonies of *F. circinatum* were introduced into a U-shaped cut on the stem of the seedlings and wrapped with moist sterile cottonwool. An equal number of control plants of each *Pinus* spp. was inoculated with sterile agar. All plants were grown in a nursery at ambient temperature (20 to 28°C). Within 30 days after inoculation, resinous cankers appeared on the stem of the seedlings of *P. halepensis*, *P. pinea*, *P. domestica*, *P. pinaster*, and *P. radiata*. Basal needles began to wilt, turn yellow, then red, and were discarded. *F. circinatum* was reisolated from stems of symptomatic seedlings. No symptoms were observed on seedlings of *Pseudotsuga menziesii*, *P. sylvestris*, *P. excelsa*, and *P. nigra* or on control seedlings. In Europe, pitch canker caused by *F. circinatum* previously has been reported only in Spain on *P. radiata* and *P. pinaster* (1). There was an unconfirmed report of this disease in Italy (http://www.eppo.org), but to our knowledge, this is the first definite conclusive evidence of the presence of pitch canker of pine in Italy.

References: (1) E. Landeras et al. Plant Dis. 89:1015, 2005. (2) H. I. Niremberg. Mitt. Biol. Bundesanst. Land-Forstwirtsch. Berl.-Dahl, 169:1, 1976. (3) H. I. Niremberg and K. O'Donnell. Mycologia 90:434, 1998. (4) W. Schweigkofler et al. Appl. Environ. Microbiol. 70:3512, 2004.