

First report of *Botrytis cinerea* causing shoot blight of pistachio in Greece [title 12 pt bold]

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[body text 11 pt] In April and May 2002, blighted shoots of pistachio (*Pistacia vera* L.) were observed in commercial orchards in Thiva County (southern Greece). The total rainfall in April and May was 70 and 11 mm respectively (April rainfall was high compared to the 18 year average of 25.72 mm). The mean temperature ranged from 5.2-24.6°C in April (very low for the first 15 days) and 11.0-29.7°C in May. On affected trees, young shoots were wilted, with shrivelled leaves remaining on the shoots (Fig. 1). If the petiole was infected, single leaves or leaflets shrivelled and dried. On male trees, the disease was more severe than on female ones (Fig. 2). Infected catkins and racemes on female trees resulted in the production of dry nuts (Fig. 3). Diseased parts were covered with grey patches of mycelium and abundant conidia of *Botrytis cinerea* Pers.:Fr. The fungus was isolated and identified based on morphological characteristics. One isolate was deposited to the Benaki Phytopathological Institute Culture Collection as BPIC1993. In 2003, dead shoots that had been diseased in the previous year remained on the trees, while new attacks in the same area were observed, again occurring with more severity on male trees.

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Due to the difficulty of performing pathogenicity tests in the field, detached shoots of pistachio were inoculated in the lab. Mycelial and conidia plugs (5 mm diameter) were taken from a 6-day old culture of BPIC1993 growing on potato dextrose agar (PDA) and placed on current-season shoots, leaves and petioles from female and male pistachio trees. The inoculated shoots were kept in moistened plastic bags in the dark for two days and then in natural light at 20°C. Although the method of inoculation was somewhat artificial, the symptoms were similar to those observed in the field and the fungus was reisolated from infected parts. The control shoots, inoculated with PDA plugs, remained healthy. [body text 11 pt]

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This is the first report of *Botrytis cinerea* causing shoot blight on pistachio outside of California. The disease identified in Greece shares many characteristics with the previous reports: sharing the same symptoms, by being especially severe on male trees and being found after high rainfall and low temperatures (Bolkan *et al.*, 1984; Michailides, 1991; Michailides & Morgan, 1994). [body text 11 pt]

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Acknowledgements [acknowledgements 11 pt bold]

The authors would like to thank Ms Sofia Migardou for her excellent technical assistance.

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References [references 11 pt bold, formatted as for the journal Plant Pathology]

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Figure 1: Shoot blight of pistachio caused by *Botrytis cinerea*. Shrivelled, dry leaves remained on the shoot

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Figure 2: Dry leaves and racemes infected by *Botrytis cinerea* remained on the shoot of male pistachio

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Figure 3: Dry leaves and racemes infected by *Botrytis cinerea* remained on the shoot of female pistachio

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