Abstract

From 2002 to 2005, a previously unreported disease causing significant yield losses was observed on apple fruits (cv. Red Chief) in the region of Imathia in northern Greece. Almost all apple orchards in that area, cultivated with Red Chief, showed disease symptoms on 3 to 10% of the fruits. Diseased fruits showed irregularly shaped, water-soaked areas on the skin and extensive decay internally. In most of the fruits, decay appeared to initiate internally from the calyx tube. Infected fruits remained firm during the early stages of decay. Fungal isolates obtained from small pieces of decayed tissue on potato dextrose agar (PDA) medium were identified as *Phomopsis mali* Roberts on the basis of morphological characteristics (2). Cultures grew rapidly on PDA at 22°C in the dark. They were initially white, but approximately 30 days after inoculation they turned gray because of the formation of pycnidia that contained alpha- and beta-spores. alpha-Spores were short and elliptical in shape (8 to 10 × 2 to 3 µm) while beta-spores were long (22 to 25 × 1 to 2 µm). Pathogenicity of the isolated cultures was tested by wound inoculating five mature apple fruits (cv. Red Chief) after surface sterilization with 0.5% NaOCl. PDA plugs, 5 mm in diameter with actively growing mycelium, were transferred into the flesh of the fruits. Sterile PDA plugs were used to inoculate five control apple fruits. Inoculated fruits were kept at 23°C for 10 days in the growth chamber. Extensive decay, similar to that observed on diseased fruits in the field, was observed on the inoculated fruits, whereas control fruits showed no decay. *P. mali* was reisolated from the decayed tissues. Commercial losses due to fruit decay caused by the pathogen have previously been reported in the United States and Northern Ireland (1). To our knowledge, this is the first report of Phomopsis fruit decay on apples in Greece.