Title First report of stem-end rot of mango caused by *Phomopsis mangiferae* in Taiwan

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Abstract

Mango (*Mangifera indica* L.) is grown on approximately 20,000 ha in Taiwan. It is an economically important crop and the income of many fruit farmers comes primarily from mango production. During 2006 and 2007, a stem-end rot disease was observed 1 week after harvest on 28 to 36% of stored mangoes picked from six orchards in the Pingtung, Tainan, and Kaoshiung regions. Two popular mango cultivars, Keitt and Irwin, showed greater susceptibility to this disease, while 'Haden' was found to be moderately susceptible. In storage, symptoms initially appeared as light-to-dark brown lesions surrounding peduncles. Rot symptoms advanced slowly but eventually penetrated the mesocarp, which consequently reduced the commercial value of fruits. The fungus formed abundant pycnidia (0.1 to 0.6 mm in diameter) on infected fruits in advanced stages of symptom development. Pieces of symptomatic fruits plated on acidified potato dextrose agar (PDA) and incubated at 25 ± 1°C consistently yielded the same fungus. A single conidial isolate was cultured. Pycnidia developed on PDA after continuous exposure to light for 9 to 14 days. On the basis of morphological characteristics, the fungus was identified as *Phomopsis mangiferae* L. (2,3). Pycnidia released two types of conidia: α-conidia (5 to 10 × 2.3 to 4.0 μm) were hyaline and oval to fusoid; and β-conidia (15.0 to 37.5 × 1.3 to 2.5 μm) were hyaline and filiform with characteristic curves. Conidiophores were hyaline, filiform, simple or branched, septate, and 15 to 75 μm long. Cultures incubated under continuous fluorescent light (185 ± 35 $\mu E \cdot m^{-2} \cdot s^{-1}$) at 25°C for 3 days were used as inoculum for pathogenicity tests. Five fruits from 'Keitt' were wounded with a sterilized scalpel and each wound (2 × 2 × 2 mm) was inoculated with either a 5-mm mycelium agar plug or a 0.5-ml spore suspension (10^5 conidia per ml) of the fungus. Five wounded fruits inoculated with 5-mm PDA plugs or sterile water alone served as controls. Inoculated areas were covered with moist, sterile cotton. Fruits were enclosed in plastic bags and incubated at 24°C for 3 days. The test was performed three times. The same symptoms were observed on all inoculated fruits, whereas no decay was observed on control fruits. Reisolations from the inoculated fruits consistently yielded *P. mangiferae*, thus fulfilling Koch's postulates. This disease has previously been reported in Australia, Brazil, China, Cuba, India,

Malaysia, and the United States (1). To our knowledge, this is the first report of *P. mangiferae* causing stem-end rot disease on mangoes in Taiwan. Our report necessitates taking preventive strategies in the field, prior to or after harvest, to contain postharvest losses in mangoes.