Title Gray mold infection of *Actinidia arguta* in Italy

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Abstract

Gray mold is caused by *Botrytis cinerea* Pers.:Fr., a cosmopolitan and polyphagous fungus that is responsible for significant losses on several fruit crops, including kiwifruit (*Actinidia deliciosa*), in the field and during storage (2). *A. arguta*, the hardy kiwifruit, is grown in several countries (e.g., Japan, China, Korea, Russia, and the United States) (1,3) and regions of Italy (Apulia [southeastern], Basilicata [southern], Marche [central eastern], Tuscany [central western], and Piedmont, Friuli Venezia Giulia, and Trentino Alto Adige [northern]) (4). The oblong- to oval-shaped fruit is produced in clusters, has a smooth, edible, thin skin, bears tips with a persistent style, and weighs approximately 5 to 15 g (1,3,4). Several fruits of cv. Ananasnaya selection 'Anna red' harvested from September to October in 2007 and 2008 in the Apulia and Marche regions showed browning and depressions in the surface and a decay of the flesh. Disease affected approximately 5% of 420 examined fruits; symptoms mainly developed in the equatorial zone, eventually expanding through the entire fruit. Severely infected fruit showed deformation followed by drying. In the field or after storage in an environment with high relative humidity, fungal mycelia with sporulation appeared on the surface of the symptomatic areas of the fruit. Nineteen symptomatic fruit were surface disinfested by immersion in a 0.5% sodium hypochlorite solution for 2 min, then rinsed in sterile distilled water. Portions of the flesh were plated onto petri dishes containing potato dextrose agar (PDA) supplemented with 250 mg/liter of each ampicillin and streptomycin sulfate. Colonies that originated from symptomatic portions of the fruit were transferred to new PDA plates and identified as *B. cinerea* by the morphological features of conidiophores and conidia. Conidia were produced on dichotomously branched conidiophores, which had globose basal cells from mycelia. The conidia were hyaline or pigmented, ellipsoid-obovoid, globoid, and without septa (2). Conidia were collected from an isolate (Accession No. CBS 125087) of *B. cinerea* recovered from diseased *A. arguta* fruit grown in Monopoli (BA), Apulia in September 2007, and maintained in pure culture on PDA. A spore suspension was created by flooding plates with a small volume of sterile distilled water plus surfactant (0.05% Triton X-100). The suspension was filtered through four layers of

cheesecloth and diluted with sterile water to an absorbance of 0.25 at 425 nm as determined by a spectrophotometer. This suspension contained approximately 1.0×10^6 conidia/ml and was diluted with sterile water to 1×10^4 spores/ml. Twenty microliter droplets of spore suspension were deposited within the equatorial zone on each of 10 nonwounded fruits of cv. Ananasnaya selection 'Anna red'. All fruit developed typical gray mold symptoms after 4 to 5 days of incubation at 20 ± 2°C and 95 to 98% relative humidity. Reisolation from the decayed tissues on PDA produced pure colonies of *B. cinerea*. To our knowledge, this is the first report of *B. cinerea* infection on *A. arguta* in Italy.