Title First report of fruit rot of strawberry caused by an *Alternaria* sp. in Taiwan

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Abstract

In March 2005, a fruit rot disease was found in several commercial strawberry (*Fragaria* × *ananassa* Duchesne) fields at Fongyuan, 24.25°N, 120.72°E, in Taichung County in central Taiwan. The disease was rare and was negligible in most cultivated areas. However, disease incidence has increased by 4 to 5% over the last 2 years and causes significant postharvest losses. In storage, symptoms on berries include light brown-to-black, sunken, irregularly shaped lesions. The lesions gradually enlarge and become firm with a dark green-to-black, velvety surface composed of mycelia, conidiophores, and conidia. Twelve single conidial isolates (*A*F-1 to *A*F-12) of a fungus were isolated by placing portions of symptomatic fruit from four locations onto acidified potato dextrose agar (PDA) and incubating at 24 ± 1°C. One isolate from each of the four locations, *A*F-2, 6, 9, and 12, was selected for identification and pathogenicity studies. The fungus was identified as an *Alternaria* sp. according to the morphological descriptions of *A. tenuissima* (2,3). Conidiophores were simple or branched, straight or flexuous, septate, pale to light brown, 3.0 to 5.0 µm in diameter, and bore two to six conidia in a chain. Conidia were dark brown, obclavate or oval, and multicellular with seven transverse (in most cases) and numerous longitudinal septa. Conidia were 15.5 to 56.5 µm (average 35.0 µm) long × 6.0 to 15.0 µm (average 11.0 µm) wide at the broadest point. The pathogen was consistently isolated from berries in the field or in storage. Pathogenicity tests were conducted by inoculating 12 surface-sterilized berries with each of the four isolates. Approximately 300 µl of a spore suspension (2×10^5 conidia per ml) was placed at two points on the uninjured surface of each fruit and allowed to dry for 5 min. Control fruits were treated with sterile water. The berries were then enclosed in a plastic bag and incubated at 24 ± 1°C for 2 days. Disease symptoms similar to those described above were observed on 95% of inoculated berries 3 days after inoculation, while no symptoms developed in control berries. Reisolation from the inoculated berries consistently yielded the *Alternaria* sp. described above. Pathogenicity tests were performed three times. Previously, strawberry fruit rot caused by *A. tenuissima* was reported from Florida (2) and Malaysia (1),

however, to our knowledge, this is the first report of fruit rot of strawberry caused by a species of *Alternaria* in Taiwan.