Abstract

During November of 2003, Chinese radishes (*Raphanus sativus* cv. Taibai) harvested in St. Catharines, Ontario and stored in less than 1°C with 98% relative humidity (RH) and 5°C with 96% RH showed symptoms of black and dark brown, irregular patches, with or without decay. The symptoms were closely associated with skin wounds and damaged root hairs. Fungal DNA was extracted from discolored skin samples peeled from a radish, and 18S rRNA genes were amplified with fungal-specific PCR primers (1) EF4f (5(prime)-ggaagggrtgtatttattag-3(prime)) and EF3r (5 (prime)-tcctctaaatgaccagtttg-3(prime)). The cloned genes were sequenced using the primer EF4f and compared directly with nonredundant nucleotides in GenBank with BLAST. The results indicated that more than 75% of the fungal microflora on the diseased radish were *Alternaria* spp. *Alternaria* sp. was successfully isolated from discolored and decayed radish tissues. Morphological and molecular identification indicated that the isolated *Alternaria* sp. cultures belong to *A. raphani*, which was previously reported to cause leaf and pod blight on radish (2). For pathogenicity studies, a spore suspension (1×10^5 conidia/ml) obtained from a 4-week-old *A. raphani* culture was used to inoculate 'Taibai' Chinese radish tissues, including inner tissues and wounded and nonwounded skin. All tests were carried out at room temperature (22 to 24°C). On inner tissue and wounded skin, symptoms of dark brown-to-black patches appeared 2 days after inoculation and progressed with time. No symptoms developed on the noninoculated control or the nonwounded, inoculated treatment. *A. raphani* was reisolated from symptomatic tissue. Further evidence of pathogenicity was obtained by an additional inoculation and observation of symptoms. The results indicated that *A. raphani* was the causal agent of the black patches observed on Chinese radish, and to our knowledge, this is the first report that *A. raphani* could cause a postharvest disease on Chinese radish in storage.