

Abstract

Blue mold caused by *Penicillium* spp. is the most important postharvest disease of apple in Uruguay. Fourteen isolates of *Penicillium* were recovered from rotten apple and pear fruit with blue mold symptoms, and from water from flotation tanks in commercial apple juice facilities. Phenotypic identification to species level was performed, and the isolates were tested for sensitivity to commonly used postharvest fungicides. Genetic characterization of the isolates was performed with restriction fragment length polymorphism of the region including the internal transcribed spacer (ITS) ITS1 and ITS2 and the 5.8SrRNA gene (ITS1-5.8SrRNA gene-ITS2) ribosomal DNA region and with random amplified polymorphic DNA (RAPD) primers. Both techniques were able to differentiate these isolates at the species level. RAPD analysis proved to be an objective, rapid, and reliable tool to identify *Penicillium* spp. involved in blue mold of apple. In all, 11 isolates were identified as *Penicillium expansum* and 3 as *P. solitum*. This is the first report of *P. solitum* as an apple pathogen in Uruguay.