

Abstract

The influence of brief immersion of grape berries in water or ethanol at ambient or higher temperatures on the postharvest incidence of gray mold (caused by *Botrytis cinerea*) was evaluated. The incidence of gray mold among grape berries that were untreated, or immersed for 1 min in ethanol (35% vol/vol) at 25 or 50°C, was 78.7, 26.2, and 3.4 berries/kg, respectively, after 1 month of storage at 0.5°C and 2 days at 25°C. Heated ethanol was effective up to 24 h after inoculation, but less effective when berry pedicels were removed before inoculation. Rachis appearance, epicuticular wax content and appearance, and berry shatter were unchanged by heated ethanol treatments, whereas berry color changed slightly and treated grape berries were more susceptible to subsequent infection. Ethanol and acetaldehyde contents of grape berries were determined 1, 7, and 14 days after storage at 0.5°C following treatment for 30 or 90 s at 30, 40, or 50°C with water, or 35% ethanol. Highest residues (377 µg/g of ethanol and 13.3 µg/g of acetaldehyde) were in berries immersed for 90 s at 50°C in ethanol. Among ethanol-treated grape berries, the ethanol content declined during storage, whereas acetaldehyde content was unchanged or increased. Untreated grape berries initially contained ethanol at 62 µg/g, which then declined. Acetaldehyde content was 0.6 µg/g initially and changed little during storage.