Title Effect of natural products on decay and antioxidants in berry fruits

Author Chien Y. Wang

Citation Abstracts Book, 6th International Postharvest symposium, 8-12 April 2009, Antalya, Turkey. 256 pages.

Keyword Berry fruits; antioxidants; natural products

Abstract

A number of natural products including several essential oils, volatile compounds and other naturally occurring substances were evaluated for their effectiveness in reducing decay and enhancing antioxidants in berry fruits. Linalool, p-cymene, carvacrol, anethole, perillaldehyde, cinnarnic acid, and cinnamaldehyde were effective in suppressing mold growth in blueberries during storage at 10°C. Thymol, menthol, and eugenol were also found to substantially reduce fungal spoilage of strawberries during the postharvest period. Treatment of blackberries with methyl jasmonate and allyl isothiocyanate also resulted in significantly less microbial decay after harvest. Combinations of carvacrol and p-cymene or linalool and p-cymene, as well as allyl isothiocyanate alone strongly retarded decay in raspberries. Higher free radical scavenging capacities were found against DPPH· and HO· in strawberries treated with thymol, menthol, and eugenol compared to untreated fruit as shown by electron spin resonance measurements. These treated strawberries as well as blackberries treated with methyl jasmonate showed higher antioxidant capacities compared to controls as measured by oxygen radical absorbance capacity. Flavonoid levels increased in blueberries after treatment with carvacrol, anethole, or perillaldehyde. Natural products which retard decay while enhancing antioxidant capacity deserve to be evaluated further for their effects on the organoleptic quality of the berry fruits.