

Postharvest effects of sodium nitroprusside treatment on membrane fatty acids of blueberry (*Vaccinium corymbosum*, cv. Bluecrop) fruit

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Scientia Horticulturae 288: 110307. (2021)

Abstract

Fatty acid plays an important role in maintaining membrane structural integrity. This study was conducted to evaluate the effects of postharvest sodium nitroprusside (SNP) treatment on fatty acid metabolism of blueberry fruit. The fruit harvested from a blueberry plantation were immersed in 0.10 mmol L⁻¹ SNP aqueous solution at 20 °C for 10 min used for research (20 ± 0.5 °C and 80% RH for 8 d). SNP-treated fruit maintained a higher relative content of unsaturated fatty acids, exhibited higher fruit firmness and lower decay incidence than control. The SNP treatment increased fruit nitric oxide content, acetyl CoA carboxylase activity and the expression levels of the key genes for fatty acid synthesis. In contrast, SNP treatment decreased lipoxygenase activity and malondialdehyde content. Therefore, the postharvest SNP treatment maintain the fruit quality during shelf life by its positive effect on fatty acids metabolism.