

Title Control of degreening by sucrose laurate ester in *Citrus nagato-yuzukichi* fruit.
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Abstract

Green Nagato-yuzukichi (*Citrus nagato-yuzukichi*) fruits, which belong to the Yuzu group, are a highly flavoured, acidic citrus. For the maintenance of postharvest quality, it is necessary to retain the green peel as long as possible. In this study, the control of degreening by sucrose laurate ester (SLE) in fruits was determined. The fruits, which were treated with hot water at 50 deg C for 3 minutes or with 2% SLE at ambient temperature or at 50 deg C for 3 minutes, were stored at 20 deg C for 2 weeks. A decrease in chlorophyll (Chl) content in the flavedo of the fruits treated with SLE at 50 deg C was suppressed greater than any other treatment. Internal carbon dioxide and oxygen levels of the fruits treated with SLE at 50 deg C markedly increased and decreased during storage, respectively. Laurate, which is a component of SLE, strongly inhibited Chl-degrading enzyme activities. SLE was also decomposed to form laurate in extracts and tissue of the flavedo. Additionally, degreening in the fruits treated with laurate was inhibited during storage. We suggest that the degreening control by SLE treatment at 50 deg C could be due to the formation of modified atmosphere conditions by coating the fruits and the effective inhibition of Chl-degrading enzyme activities by laurate, which might be formed from SLE by flavedo esterase.