Title Cultivar difference in peel blackening of banana fruit during low temperature storage

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Abstract

Banana fruits of cultivars 'Hom Thong' (*acuminata*, AAA group) and 'Namwa' (*x paradisiacal*, ABB group) were stored at 4°C and 12°C (and 85-90% RH). At 4°C, peel blackening was visible on day 2 in "Hom Thong' but two days later in 'Namwa'. Levels of total free phenolics, thiobarbaturic acid (TBA)-reactive compounds, and *in vitro* peroxidase (POD) activity in the peel were not correlated with blackening. A slight increase of *in vitro* catechol oxidase (polyphenol oxidase) activity occurred from day 0 onwards in 'Hom Thong', and could explain blackening in this cultivar, but such an increase was not found to accompany blackening in 'Namwa'. Low temperature storage resulted in rapid increase of *in vitro* lipoxygenase (LOX) activity in 'Hom Thong', which was correlated with blackening, but the later blackening in 'Namwa' was not accompanied with a rise in LOX activity. It is concluded that the early peel blackening in low temperature-stored fruit of 'Hom Thong' was correlated with increased LOX activity, which might be close to the cause of the blackening, and increased catechol oxidase activity, which is apparently involved in the blackening reaction. Peel blackening in 'Namwa', in contrast, was not correlated with any of the measured parameters.