

Title Absciscic acid hastens mango fruit ripening
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Abstract

The role of abscisic acid (ABA) in modulating ripening of mango (*Mangifera indica* L. cv Kensington Pride) fruit was investigated by applying 0, 0.5 mM, 1.0 mM or 2.0 mM ABA [S-(+)-cis, *trans*-abscisic acid] and 0.05 mM, 0.1 mM and 0.2 mM of inhibitor of its biosynthesis [nordihydroguaiaretic acid (NDGA)]. The effects of these treatments on respiration rate, fruit softening, skin colour development were determined daily during 8 days ripening period at ambient temperature ($21 \pm 1^\circ\text{C}$), while the concentration of soluble solids (SSC), titratable acidity (TA), individual sugars and organic acids as well as SSC:TA ratio were determined at fully ripe stage. The exogenous application of ABA (1.0 mM) accelerated the respiration rate, enhanced fruit softening, improved colour, chromaticity L^* , a^* , b^* , C^* and reduced h° than control. The respiration, fruit softening, skin colour developments were significantly delayed and/or suppressed in NDGA-treated fruit. The ABA-treated (1 mM ABA) fruit showed lower levels of total organic acids, tartaric acid and shikimic acid as well as higher SSC:TA ratio than control and NDGA-treated fruit. These results suggest that ABA promotes mango fruit ripening and its effects are, at least in part, mediated by changes in respiration, fruit softening, skin colour development and the concentration of organic acids.