Title Effect of ethylene treatment on ethylene production, EFE activity and ACC levels in peel and pulp of banana fruit

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Abstract

Exogenous ethylene treatment (100 ppm) induces preclimacteric bananas (*Musa acuminata* Collar. cv. Dwarf Cavendish) to ripen with increased respiration and endogenous ethylene production; 12 h treatment was slightly more effective than 6 h. In transverse sections of bananas the contribution of the peel to respiratory and ethylene increases after induction by exogenous ethylene was negligible and the pulp provided all the output. Increases in respiratory CO_2 and ethylene by banana slices were generally in line with the inductive period of ethylene treatment. Banana slices treated with ethylene show an increase in EFE activity in both peel and pulp, with that in the peel being shown earlier. The effect is related to the duration of treatment. Ethylene-treated slices contained higher levels of conjugated ACC, but not free ACC, than control slices, but there was no clear link with the length of exposure to exogenous ethylene. The increase in ACC conjugation activity could explain the initial lower ethylene production shown by slices treated with exogenous ethylene.