

Title The progression of ethylene production and respiration in the tissues of ripening 'Fuji' apple fruit.
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Citation HortScience Vol: 35 (2000); 1300-1303

Abstract

'Fuji' apple fruits were harvested periodically prior to and during fruit ripening. Ethylene evolution and respiration rates of skin, hypanthial, and carpellary tissue was determined in each fruit. Additionally, whole fruits were used for analyses of internal ethylene concentration, volatile evolution, starch content, flesh firmness, and soluble solids content. Ethylene production was greatest in the carpellary tissue at all sampling dates except the one occurring just before the rise in whole fruit internal ethylene concentration, when production in the skin and carpellary tissue was similar. Respiration was always highest in the skin, in which the climacteric rise was most drastic. Higher ethylene production in the carpellary tissue of pre- and post-climacteric fruit and higher respiration in the skin tissue, including a noticeable climacteric rise, is indicative of a ripening initiation signal originating and/or transduced through the carpels to the rest of the fruit.