Title Changes in colour and antioxidants during vine and postharvest ripening of tomato fruit

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Abstract

Tomato fruit ripening is a complex, genetically programmed process that culminates in dramatic changes in texture, colour, flavour, and aroma of the fruit flesh. The characteristic pigmentation of red ripe tomato fruit is due to the deposition of lycopene, the predominant carotenoid found in tomatoes, and of ß-carotene, which are both associated with the change from green to red as chloroplasts are transformed to chromoplasts. Detached tomato fruit stored at 15°C and 30°C, and vine ripened fruit were studied to characterise ripening by Hue (°) index of the CIELab colour system, which is strongly influenced by ripening. Colour changes of fruit stored at 15°C and vine ripened fruit showed significant differences compared to fruit stored at 30°C. Polyphenols, vitamin C and lycopene content of tomatoes were analysed at the end of the experiment. Storage temperature influences vitamin C and lycopene content, while polyphenols did not show significant differences among the different storage conditions.