

O-15**Native carotenoids, tocopherols and chlorophyll derivatives in raspberries: evolution during ripening and composition in ripe fruits of different varieties**

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Topic: Application of PNPs

Raspberry is one of the most important soft fruits cultivated in Europe, both in agronomical and economical terms. The consumer's interest in these fruits is increasing as they have high concentrations of chemically diverse antioxidant compounds, including polyphenols (Beekwilder *et al.* 2005). The carotenoid composition, their biosynthesis and catabolism in raspberry fruits has received little attention, with only a few studies reporting free lutein as the most abundant carotenoid (2.8 to 3.9 mg/kg fresh weight) (Beekwilder *et al.* 2008; Marinova & Ribarova 2007).

In this work, the composition of carotenoids, chlorophylls and tocopherols in raspberries of different varieties, including yellow and red genotypes have been determined in ripe fruit, and during fruit development and ripening.

The profile of pigments in ripening raspberries changes drastically, with a drastic decrease of beta carotene and chlorophyll, a reduction in lutein content and a concurrent increase in lutein esters. Lutein esters are for the first time reported in ripe raspberries, with amounts up to 49 mg/kg dry weight, but also lutein (20 mg/kg dry weight) can be found.

The different samples analysed show different amounts of carotenoids and tocopherols. Whether these different compositions reside from the variety or by other factors such as the environmental conditions needs to be ascertained. In conclusion the carotenoid pigments should not be neglected when considering raspberry antioxidant potential and composition in terms of beneficial and nutraceutical compounds.

References

Beekwilder J, Hall RD, de Vos CHR. 2005. *BioFactors (Oxford, England)*: 23(4).

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The results presented were obtained during a STSM in Royal Holloway within cost action FA1006.