

Title Varietal differences in catabolic intermediates of chlorophylls in *Olea europaea* (L.) fruit cvs. Arbequina and Blanqueta

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Abstract

A comparative study of the chlorophyll catabolism in fruit of *Olea europaea*, cvs. Arbequina and Blanqueta during the ripening, has demonstrated a temporal disparity in chlorophyll disappearance between varieties. In 'Blanqueta' fruit, the early cleavage of the macro-ring of the chlorophyll molecule implies a fast loss of chlorophylls before the synthesis of anthocyanins. The displacement in the time of this process agrees in each variety with the maximum levels of *in vivo* chlorophyllide and chlorophyllase activity (EC 3.1.1.14). The temporary difference in the activation of chlorophyllase and the rest of enzymes implied in the pheophorbide *a* oxygenase pathway is responsible for the step to colorless products. In addition, the different involvement of minor oxidized chlorophylls in the varieties implies a different participation of chlorophyll catabolic oxidatives enzymes. The greater oxidative activity in the fruit of the 'Blanqueta' variety can indirectly have an influence on the lower oxidative stability of corresponding oils.