Effect of grape variety on the evolution of sugars, hydroxymethylfurfural, polyphenols and antioxidant activity during grape must cooking

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Abstract

Grape must cooking is a traditional practice used for the production of foodstuff worldwide such as traditional balsamic vinegar. The aim of this work was to reveal the effect of grape variety on the evolution of the main chemical components in grape must during cooking. To this end, two grape must varieties (red Lambrusco and white Trebbiano grapes) were cooked and analysed. The monosaccharide concentration decreased because cooking resulting in the formation of 5-hydroxymethylfurfural. At the end of cooking, the antioxidant activity and polyphenol concentration were higher and the 5-hydroxymethylfurfural was lower in Lambrusco than in Trebbiano must. Additional changes involved degradation of monomeric
anthocyanins resulting in the formation of the corresponding phenolic acids. From a health point of view, the high antioxidant activity and polyphenol concentration and the low 5-hydroxymethylfurfural concentration make cooked red Lambrusco must a safer raw starting material for making traditional balsamic vinegar.

**Keywords**: 5-Hydroxymethylfurfural, anthocyanins, antioxidant activity, cooking, phenolic acids, sugar degradation, traditional balsamic vinegar.

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