

Effect of carbonic maceration and pectolytic enzymes on the polyphenolic composition and foam parameters of red base and sparkling wines

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Red sparkling wines constitute an attractive product for the consumers. The main problem to produce them is to obtain a base wine with the adequate characteristics, i.e., moderate alcohol content and good color intensity and mouthfeel. Phenolic compounds are considered quality parameters because they are related to the wine organoleptic characteristics, mainly color, bitterness and astringency. In addition, polyphenols are related with foamability, an important parameter for the quality of sparkling wines. Therefore, the aim of this work was to evaluate the effect of two different winemaking techniques on the polyphenolic composition of red base and sparkling wines: (i) carbonic maceration (PM-CM); (ii) traditional winemaking with addition of pectolytic enzymes (PM-E). Two control wines were also made by traditional red winemaking with ripe (M-C) and pre-mature grapes (PM-C). PM-E and PM-CM red base wines showed significant lower contents of total anthocyanins, proanthocyanidins and flavonols than the control red base wines. M-C red base wine showed the highest concentration of esterified acids followed by PM-CM while PM-E and PM-C red base wines showed a significant lower concentration. Ageing on yeast lees produced a generalized decrease in all phenolic compounds and the differences showed on red base wines were maintained. Foam parameters were measured by Mosalux method [1]. The values of HM (foamability) and HS (persistence of foam) measured on red sparkling wines were in agreement with those described for white and rosè sparkling wines [2].

References

- [1] Maujean, A. et al. (1990). Bulletin de l'O.I.V., 63, 405–427.
[2] Pérez-Magariño, S., et al. (2015). LWT-Food Science and Technology, 61, 47-55.

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