CA28: Changes in the aroma profile of three Vitis vinifera cultivars – Gran Negro, Mouratón and Brancellao – depending on ripening and the position of the berries into the bunch

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The interest of the wine industry for producing wines of quality with differentiated characteristics in its aromatic composition has led Galician growers (N.W. Spain) to restore old traditional *Vitis vinifera* L. cultivars like Brancellao and Mouratón or the wellknown teinturier Morrastrel Bouschet (cultivated under the local name Gran Negro).

Aroma compounds arising from berry metabolism (terpenes, norisoprenoids, benzene compounds and C_6 alcohols) are present in free and bound glycoside forms. Free forms are volatile compounds directly involved in aroma flavor, while bound glycoside forms should be transformed in volatile compounds by hydrolysis to increase varietal aromatic characteristics [1]. Free and bound glycoside forms are not uniformly distributed between the berry flesh and skin [2]. Skins have been found to contain more than half the volatile compounds present in grape berries [3].

Berry composition varies during ripening because both free and glycosylated forms of varietal compounds are accumulated in this period of time [4]so it is useful to follow the evolution of these volatiles during the maturation process to determine the best moment for harvesting. Changes in the aroma profile depend not only on the variety but also of certain cultural and climate-related factors [5]as well as the position of the berries into the bunch [6]. In this sense, some wineries separated the shoulders (basal zone) and the tips (apical zone) of the bunches to produce wines of different qualities.

In this work, grape berries of *Vitis vinifera* L. Brancellao, Gran Negro (Morrastrel Bouschet) and Mouratón were collected from apical and basal positions within the bunch at different states of ripening. Free and bound glycoside forms from flesh and skin of grapes were evaluated separately in order to contribute to the characterization of these cultivars and to determine which period of time and which part of the bunch exhibit the maximum potential, for each cultivar.

[1] Z. Y. Günata, C. L. Bayonove, R. L.Baumes, R. E. Cordonnier, Am. J. Enol. Vitic. 37 (1986) 112.
[2] B. Wilson, C. Strauss, P. Williams, Am. J. Enol. Vitic. 37 (1986) 107.
[3] R. Cordonnier, C. Bayonove, Connaisance de la Vigne et du Vin 15 (1981) 269.
[4] Bayonove, C. (1993). Les composés terpeniques. In B. Doneche (Ed.), *Les acquisitions récentes en chromatographie du vin. Applications á l'analyse sensorialle des vins* (pp. 99-119). Paris, France: Lavoisier.
[5] S. M. Bureau, A. L. Razungles, R. L. Baumes, J. Sci. of Food Agric. 80 (2000) 2012.
[6] M.E.Tarter, S.E. Keuter, Am. J. Enol. Vitic. 56 (2005) 86.