

In berry distribution and extraction of thiol precursors in Gewürztraminer

DISTRIBUZIONE ED ESTRAZIONE DALLA BACCA DEI PRECURSORI TIOLICI IN GEWÜRZTRAMINER

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INTRODUCTION

The so-called varietal thiols are an interesting technological class of compounds that contributes to the "tropical" notes of wine. The factors governing the formation of their precursors and the conversion to the corresponding free forms are still discussed (Thibon et al. 2016) but, technologically speaking, the precursor availability is a prerequisite. Several data are present in the literature regarding Sauvignon Blanc (SB), while fewer deal with Gewürztraminer (GWT; Dubordieu and Tominaga 2009; Roland 2010a & b; Concejero et al., 2014), a variety native to Tramin, in South-Tyrol (Italy).

For this reason, we investigated the concentration of 3-S-glutathionylhexan-1-ol (GSH-3MH) and 3-S-cysteinylhexan-1-ol (Cys-3MH) in GWT as regards:

- (1) the **distribution between marcs and juice** in samples processed at a semi-industrial scale, in comparison with SB samples having similar °Brix and pressing yield;
- (2) the **effect of pre-fermentation skin-contact (Mac)**, also used along with two **commercial enzymes (EA and EB)** to favour extractions from skin;
- (3) the **fractioning during pressing** on industrial-scale.

Thiol precursors were analysed according to Larcher et al. (2013).

(1) DISTRIBUTION IN THE BERRY

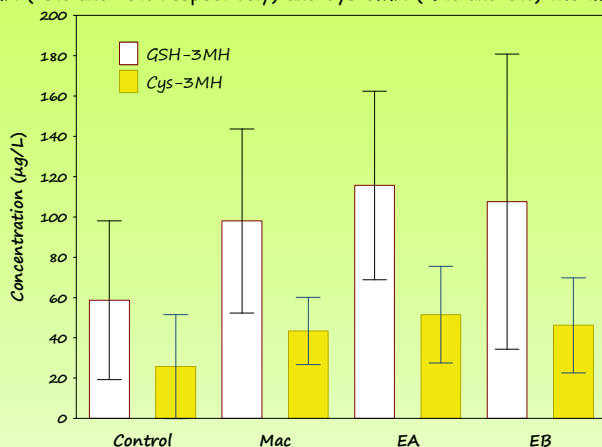
GWT juices are poorer in 3MH precursors (157±59 nmol/Kg) than SB's (477±145 nmol/Kg), however GWT marcs are richer in these precursors (10352±4317 and 6824±2609 nmol/Kg respectively).

Among precursors, GSH-3MH is the main in GWT and SB juice, so as in SB marcs. GWT marcs are instead characterized by a higher content in Cys-3MH, precursor that characterizes the whole berry composition of this variety (>73% of total 3MH precursors)

(2) EFFECT OF PRE-FERMENTATION SKIN-CONTACT PROTOCOLS

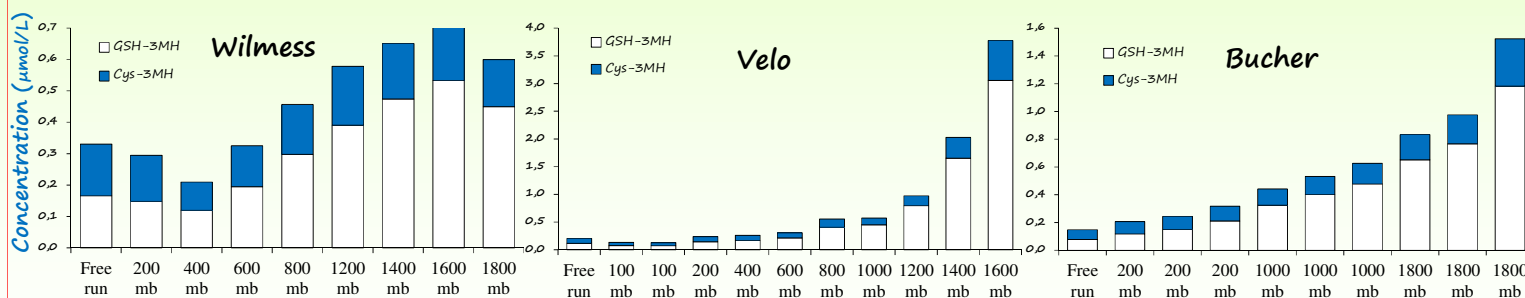
Every maceration protocol augmented statistically the content of GSH-3MH and Cys-3MH respect to the non macerated control.

No statistical differences were found among maceration protocols, although EA and EB increased both GSH-3MH (18% and 10% respectively) and Cys-3MH (19% and 6%) the macerated untreated samples.



(3) FRACTIONING DURING INDUSTRIAL PRESSING

Under the industrial conditions studied, 50% of the total content is contained in the high pressure fractions, (over 800 mbars), corresponding to approximately to 5% of the total juice)



Concejero et al. (2014). *Analytica chimica acta*, 812, 250-257.

Dubordieu, & Tominaga (2009). In: *Wine chemistry and biochemistry* (pp. 275-293). Springer New York.

Larcher et al. (2013). *Australian journal of grape and wine research*, 19(3), 342-348.

Roland et al. (2010a). *Journal of Chromatography A*, 1217, 1626-1635.

Roland et al. (2010b). *Food Chemistry*, 121(3), 847-855.

Thibon et al. (2016). *Food chemistry*, 199, 711-719

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