Available online at www.sciencedirect.com
ScienceDirect
Food Chemistry 107 (2008) 853–860
Food Chemistry
www.elsevier.com/locate/foodchem

Biogenic amines in wines: Influence of oenological factors

Ana P. Marques [a,b], Maria C. Leitão [a,b], Maria V. San Romão [a,b,c,*]

[a] *Instituto de Biologia Experimental e Tecnológica, Apt 12, 2781-901 Oeiras, Portugal*
[b] *Instituto de Tecnologia Química e Biológica, Universidade Nova de Lisboa, Av. da República (EAN) 2781-901 Oeiras, Portugal*
[c] *Estação Vitivinícola Nacional, 2565-191 Dois Portos, Portugal*

Received 8 March 2007; received in revised form 3 August 2007; accepted 3 September 2007

Abstract

Biogenic amines formation results from the decarboxylation of the corresponding amino acids by action of microorganisms. The presence of these compounds is considered by some authors a fundamental parameter for detriment of alcoholic beverages. The aim of this work was to assay the effect of some oenological factors (viticulture region, grape variety, anti-fungi treatment of grapes, fermentation activators, malolactic starters and storage on lees) from the point of view of their influence on the biogenic amines content of wines. According to our results, it was possible to show that the viticulture region affects the amounts of amines, since wines of some regions present higher contents of amines than wines from other regions. Grape varieties appear to influence the wine amines content. Commercial malolactic starters, after careful selection, should be added to the vinification process in order to decrease the formation of biogenic amines, since in our assays the wines that were inoculated with starters present lower amounts of biogenic amines. The wine storage on lees contributes for a biogenic amines increase.

Keywords: Wine; Biogenic amines; Viticulture region; Grape variety; Anti-fungi treatment of grapes; Fermentation activators; Commercial malolactic starters; Storage on lees

* Corresponding author. Address: Instituto de Biologia Experimental e Tecnológica/Instituto de Tecnologia Quimica e Biológica, Universidade Nova de Lisboa Apt, 12, 2781-901 Oeiras, Portugal. Tel.: +351 21 446 95 54; fax: +351 21 442 11 61.
E-mail address: vsr@itqb.unl.pt (M.V. San Romão).

0308-8146/$ - see front matter © 2007 Elsevier Ltd. All rights reserved.
doi:10.1016/j.foodchem.2007.09.004