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**PRELIMINARY STUDY OF SULFUR-CONTAINING COMPOUNDS
PRODUCED BY *SACCHAROMYCES* AND NON-*SACCHAROMYCES*
YEAST STRAINS IN DIFFERENT FERMENTATION MEDIA**

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The growth of non-*Saccharomyces* yeasts, mainly belonging to the genera *Hanseniaspora*, characterize the first stages of grape juice fermentation; these strains disappear during the later fermentation stages, when prevailing *Saccharomyces cerevisiae* strains complete the process. The combined action of these yeasts species determines the type and concentration of many compounds that may contribute to the aroma and flavour of wine.

In this work, the production of sulfur-containing compounds by the yeasts *Hanseniaspora uvarum*, *Hanseniaspora guilliermondii* and *Saccharomyces cerevisiae* has been studied. Some of the sulfur compounds quantified were dimethylsulfide, 2-mercaptoethanol, 2-methyltetrahydro-thiophen-3-one, 2-(methylthio)ethanol, 3-(methylthio)-1-propanol, 2-acetyl-5-methylthiophene, 3-(ethylthio)propanol, ethyl 3-(methylthio)propionate, benzothiazole, 3-(methylthio)propionic acid, acetic acid-3-(methylthio)-propyl ester and dimethylsulfon.

The alcoholic fermentations were carried out using different commercial culture media and grape musts from the Douro region. The supplementation of the media with aminoacids, such as methionine and cysteine, as well as diammonium phosphate was also performed.

The results showed that, according to the fermentation medium, yeasts produce different levels of the same compound and, in addition, they can produce different molecules. *Hanseniaspora guilliermondii* produces the highest amount of 3-(methylthio)-1-propanol in all tested culture media. Wines elaborated with *Saccharomyces cerevisiae* present an unidentified sulfur compound which is not found in the other wines produced by *Hanseniaspora*. *Hanseniaspora uvarum* produces wine with the lowest content in sulfur compounds. The supplementation of the medium with nitrogen sources increases the production of some sulfur compounds by the yeasts, such as 3-(methylthio)-1-propanol, 2-mercaptoethanol, dimethylsulfon and 3-(methylthio)propionic acid.