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Angela Maria Coral Medina, Carole Camarasa, John Morrissey

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## **Contribution of the interaction between environment and genotype to flavour and aroma**

Angela Maria Coral Medina<sup>1,2</sup>, Carole Camarasa<sup>2</sup> & John Morrissey<sup>1</sup>

<sup>1</sup>Microbiology Department, University College Cork, Ireland; <sup>2</sup>INRA, SupAgro, Universite de Montpellier, France

*Saccharomyces uvarum* has interesting properties that can be exploited for products of fermented beverage. Particularly, the cryotolerance and capacity to produce high amounts of volatile compounds offers new opportunities for the fermentation industry. Besides the contribution of the nitrogen source to protein formation, some nitrogen compounds are precursors of volatile molecules that produce aroma. The nitrogen compounds assimilated by yeast are classified in rich, intermediate and poor nitrogen sources depending on how they affect the specific growth rate. In *S. cerevisiae*, the nitrogen metabolism is well understood but less is known about these pathways in *S. uvarum*, nor whether there are regulatory differences between the yeasts. The aim of the project is to understand how nitrogen metabolism is regulated in *S. uvarum* and what the effects of the nitrogen source are on the production of volatiles at low temperature. The focus is on temperatures below 20°C since is relevant for production of wine or cider. First, it was determined what nitrogen sources are preferred and non-preferred by *S. uvarum* MTF 3098 relative to *S. cerevisiae*. Next, we will determine how the nitrogen source affects the expression of key genes potentially involved in aroma production. Transcriptome analysis under particular nitrogen and temperature conditions will be performed. Future work includes the correlation of the transcriptome and volatile metabolome to understand links between temperature, nitrogen regulation and aroma production in *S. uvarum* MTF 3098.