

One Health Meets Food Microbiology



food

19-22 July
2016

micro

Dublin
Ireland

ABSTRACTS BOOK



www.foodmicro2016.com

Poster Abstracts

Food Biotechnology

PO1-FB-070

MODELING FERMENTATION BEHAVIOR OF STARMERELLA BACILLARISK. Rantsiou^{1*}, V. Englezos¹, P.-A. Risse¹, F. Cravero¹, F. Torchio², L. Rolle¹, L. Coccolin¹

¹Agricultural, Forestry and Food Sciences, University of Torino, Grugliasco, ²Institute of Enology, Food and Agricultural Engineering, Cattolica del Sacro Cuore, Piacenza, Italy

Abstract Content: Renewed interest towards non-*Saccharomyces* species has prompted in-depth investigation of the physiology, metabolism and fermentation behavior of wild wine yeasts. Their role in alcoholic fermentation for wine production has long been recognized but their presence has been associated with fermentations difficult to control and final products with unpredictable sensorial characteristics. There is therefore a need to better understand their behavior during alcoholic fermentation. This study concerns *Starmerella bacillaris* (synonym *Candida zemplinina*), a yeast species recently described that possesses a strong fructophilic character. *S. bacillaris* preferentially consumes fructose and thus reduces the amount of sugars available to *S. cerevisiae* and could therefore be used to reduce ethanol content in wines. We sought to model the fermentation behavior of *S. bacillaris* by employing a Response Surface Methodology (RSM) approach. Two independent experimental variables were tested; sugar concentration and time of fermentation. The data of some important enological (chemical) parameters were then fitted into polynomial equations that described the behavior of *S. bacillaris*. Fructose consumption was independent from the initial sugar concentration while glucose consumption was dependent on the initial sugar concentration and was inhibited at high sugar concentrations. Ethanol and glycerol production were time dependent. All strains tested produced relatively high amounts of glycerol and low amount of acetic acid. Production of these two compounds was not dependent on the initial sugar concentration. Finally an interesting attribute common to all strains was the consumption of malic acid, which however resulted to be influenced by the sugar concentration. The results suggest a rather common fermentation behavior for the 6 strains tested and prove the potential of using this yeast, in combination with *S. cerevisiae*, for the fermentation of medium to high sugar content musts since no negative fermentation attributes were observed.

Disclosure of Interest: None Declared

Keywords: Alcoholic fermentation, *Starmerella bacillaris*, Wine, yeasts