

3rd International FOOD SCIENCE, PROBIOTICS, NUTRITION & MICROBIOME CONFERENCE November 28-29, 2019 | Kuala Lumpur, Malaysia

Dealcoholization of Wine: Study of Processes and Consumer Acceptability

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The high alcohol content in wine has several disadvantages from the point of view of consumer health as well as higher taxes in some countries for alcoholic products. Let's not forget that many molecules such as polyphenols and anthocyanins in wine bring a lot of health benefits. The objective of this study is the total dealcoholization of wine according to two different techniques tested for the first time, which are vacuum evaporation carried out at three different temperatures (40°C, 50°C and 60°C) and lyophilization, with the preservation as much as possible of the quality of our product. For the results, several factors such as alcohol concentration, IPT, IC, total polyphenols, total tannins and antioxidant activity were analyzed according to the different dealcoholization techniques. All the processes made it possible to obtain totally dealcoholized wines (alcohol content less than 0.5%). Concerning phenolic compounds, the dealcoholization techniques did not result in a significant decrease of these compounds compared to the initial wine. The analysis by GC-MS of the aromas showed a high decrease in the aromas' concentrations. A questionnaire was conducted among 200 people to analyze the acceptability of the consumer vis-à-vis non-alcoholic wines. The results showed that a significant portion of the population is interested in this type of product.

Biography

Joyce Kheir is an assistant professor and chairperson of the Chemical and Petrochemical Engineering Department at the Faculty of Engineering one of the Lebanese University which is the only public university in Lebanon with more than 80,000 students. She graduated from Institut National Polytechnique de Toulouse - France, with a PhD degree in Processes and environmental engineering in 2012 and from Université Saint-Joseph de Beyrouth – Liban, with a joint PhD degree in Chemistry. She is currently teaching main chemical engineering courses. Her research areas are food processes technology and chemical processes related to the environmental treatments and solutions.

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