

## Grape pomace phenolics: Microencapsulation and potential ingredient for functional foods

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Phenolic compounds obtained from fruits have recently gained a great attention due to their bioactive roles. Grape is one of the world's largest fruit crops and red grape pomace contains a large amount of phenolic compounds exhibiting wide range of biological effects. Polyphenols can neutralize free radicals turning them into less dangerous, thereby, stopping side reactions. They have positive effects on human health by reducing the risk of cardiovascular diseases and acting as potential cancer chemopreventives. However, polyphenols are sensitive and they can be easily affected by physicochemical factors that create a great challenge to be incorporated into food products. Hence, microencapsulation was aimed to investigate in this study to provide a solution for this problem as it offers individual micro-packages consisting of core (phenolics) and coating material for sensitive ingredients to improve their stability and protect them against oxidation, light, moisture and temperature by acting as barrier. The effect of different coating materials, core/coating material ratio and various drying temperatures on the physicochemical properties of microcapsules obtained from grape pomace extract were evaluated. A lab scale spray-dryer was chosen to produce microcapsules of polyphenols using different dextrose equivalents of maltodextrin and gum arabic as alternative coating materials. Two different core/coating material ratios, three different maltodextrin/gum arabic ratios and five different inlet temperatures were investigated. When all parameters including yields, hygroscopicity, total phenolic content, antioxidant activity, individual phenolic compounds were evaluated, the most efficient microcapsules were obtained with a 8:2 ratio of maltodextrin:gum arabic at 140°C inlet temperature.

### Biography

Aysu Tolun has received her BSc and MSc degrees from Food Engineering Department of Ankara University in 2000 and 2005, respectively. She worked at Quality Control Department of several food industries for 10 years and Ankara University Project Information and Support Unit for 3 years as an expert. She have been pursuing her PhD for four years in the field of Microencapsulation. Zeynep Altintas has worked in Cranfield University (UK) as a faculty member of School of Engineering since 2012 and moved to Berlin Technical University (Germany) in May 2016 upon receiving a very good offer to continue her academic career in Berlin. Nevzat Artik has completed his Doctorate in Ankara University in 1983. From 1994 until now he has been serving as a Professor besides his administrative duties in several institutions including Minister of Agriculture and Rural Affairs, a member of the National Codex Alimentarius. He served as a Leader in EU project carried out by EFSA. He has a total of 165 publications in the field of Food Science and Technology.

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