

International Conference on

Food Chemistry & Hydrocolloids

August 11-12, 2016 Toronto, Canada

Analysis of red grape skin anthocyanins extracted using sonication

Harmit Singh, Carol Pow Sang, Yee Teng Moo and Lauren Chuman
California State Polytechnic University, USA

Anthocyanins (ACNs) are naturally derived pigments. Their use in foods is limited due to their high cost and instability. The ability to extract more acylated ACNs than non-acylated can be beneficial for the food industry since acylated ACNs are more stable. Red grapes skins after wine production are used to extract ACNs color. About 240 ton (US tons) of red grapes are crushed every years to produce color. The more applications of natural food colors will add significant value to the crops and help boost the economic benefits to the growers and processors directly and indirectly. The use of ultrasound for extraction purposes can facilitate the diffusion of solvents by breaking the grape skin cell walls. During this study sonication and homogenization methods were compared using methanol, ethanol and water under acidic and non-acidic conditions at different temperatures. Spectrometric pH differential method and Reverse-phase HPLC method were used to compare extraction yield of total and individual ACNs respectively. Samples homogenized in methanol pre-heated to 60°C extracted the highest amount of ACNs where as sonication at power 6 in acidified water extracted the highest amount of ACNs. HPLC analysis indicated that in all samples cyanidin 3-glucoside, peonidin 3-glucoside, and malvidin 3-glucoside were the most common extracted monomeric ACNs. Interestingly acylated ACNs were not extracted and non-acylated ACNs group was predominant as indicated by the HPLC.

Biography

Harmit Singh has completed his PhD in Organic Chemistry from Guru Nanak Dev University, Amritsar, India. He is an Associate Professor in the Department of Human Nutrition and Food Science and Director of research and graduate studies in the College of Agriculture at California State Polytechnic University, Pomona CA, USA. His research work is focused on extraction, purification and application of natural food colors. He has published more than 27 papers in reputed journals.

harmitsingh@cpp.edu

Notes: