

# Reinventing the Food & Beverage Industry

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## Physicochemical Characteristics of Beverage Emulsions Containing Crocetin as a Functional Ingredient of Saffron

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The objective of this study was investigation of physicochemical properties of beverage emulsions containing crocetin as a functional ingredient. The effect of different percent of gum arabic (GA; 1-4%) and kinds of oil (10% of sunflower or sesame oil containing 0.04% of crocetin) in the presence of xanthan gum (XG; 0.1%) were studied using a full  $2^4$  experimental design. The dependent variables were pH, opacity, size index, stability index (determined in accelerated and storage condition), particle size analysis, and steady shear rheological measurement. Increasing of GA had more effect on physicochemical characteristics of beverage emulsions than kinds of oil. Beverage emulsions prepared with sunflower oil showed lower particle size and size index than sesame oil, although, opacity did not effect by kinds of oil. In respect of pH value and stability, only the effect of GA was significant. However, in size index, sesame oil and its interaction with GA showed higher amount mainly due to its bigger particle size. According to the steady shear measurements, in Power law model parameters, the effect of GA, kinds of oil and their interaction were significant and sesame oil showed higher consistency coefficient (K) and lower flow behavior index (n), respectively. However, in respect of flow behavior index (n), only the effect of GA was significant. Finally, sunflower oil may be more suitable for formulation of a beverage emulsion containing crocetin because of smaller particle size and lower size index.

### Biography

Kooshan Nayebzadeh has completed his PhD in Food Technology from Tehran University and he had a research course for a fixed term in Procter Department of Food Science, University of Leeds, UK. He is now an Assistant Pofessor at Shahid Beheshti University of Medical Sciences, Tehran, Iran.

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