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Development of value-added applications from wine grape pomace

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Abstract

Wine grape pomace (WGP) is underutilized bio waste from winemaking. There is a great need for developing new utilization of this bio-residual, especially in the area of converting pomace into value-added products. Several studies on WGP from US NW region were conducted for the goal of developing their new value-added applications. These included 1) determining bioactive compounds (dietary fiber and phenolics) and basic chemical compositions of different varieties of red and white WGP; 2) evaluating the effects of different drying methods for the retention of bioactive compounds in WGP and their applications as "antioxidant dietary fibers (ADF)" in different types of food products; 3) investigating the feasibility of developing WGP extracts based edible films and their antioxidant and antimicrobial functions; and 4) studying the internal bonding performance of WGP with binding materials, crosslinking agents, and other functional additives for producing WGP based bio composite boards using thermo-compression method and their application as biodegradable nursery pots. The studies quantified the dietary fiber and phenolics composition of different WGP which are critical for developing their potential applications, identified the optimal drying methods for processing the wet WGP, developed new applications of WGP as ADF in yogurt, salad dressings, and bakery goods, and optimized formulation for making WGP bio composite and edible films as packaging materials. The development of value-added products from WGP would benefit wine processors by adding values on the wine processing bio waste, and benefit the society by the reduction of waste, potentially lower cost and substitution of renewable, sustainable, and domestic materials.

Biography

Yanyun Zhao is a Professor in the Department of Food Science & Technology, Oregon State University (OSU), USA with combined research, Extension and education responsibilities in value-added food processing. As the author or co-author, Dr. Zhao has generated over 90 peer-reviewed publications, edited 2 books, hold/filed 5 patents, and provided over 30 workshops and/or short courses to the processed fruit and vegetable industry. Dr. Zhao is a 2012 Fellow of the Institute of Food Technologists (IFT), editorial board member of the Journal of Food Processing & Preservation, and Journal of Food processing & Technology.