Jianmei Yu, J Exp Food Chem 2017, 3:2 (Suppl)
DOI: 10.4172/2472-0542-C1-008



# Grape Pomace: Chemical composition and effects on food quality and nutrition

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**Statement of the Problem**: Grape Pomace (GP) is the residue of grapes after wine making. It accounts for 25-30% of grapes crushed for wine making. The GP is rich in polyphenol and the health promoting and disease preventing benefits of different classes/groups of grape polyphenols are well documented. In addition to polyphenols, grape seeds contain 13-19% oil about 11% protein, 60-70% of non-digestible carbohydrates, and non-phenolic antioxidants such alpha-tocopherol in oils. Therefore, grape pomace has great potential to be a functional food ingredient. We investigated nutritional and polyphenol compositions of pomace from Muscadine grapes, the native grapes of North America, their applications in bread, cookies and extruded product. Addition of GP flour in the formula of bread, cookies and extruded product resulted in significant changes in physiochemical properties in dose dependent-manner. Sensory properties of bread and cookies containing grape pomace flour varied with dose and particle size of GP, and there was no significant reduction in consumer acceptability of bread and cookies at GP content up to 5%. *In vitro* study showed that, GP polyphenol extract reduced the digestibility of food starch and lipid, but the effect on the digestibility of food protein varied with type of protein. Under simulated digestion condition, the digestibility of bread starch and protein were significantly reduced in the presence of GP. *In vivo* study using rat model found that consuming feed containing GP modulated the blood lipid profile of rat blood plasma and absorption of macronutrients. Therefore, long term consumption of products containing GP may reduce energy intake and help with obesity prevention.

## Biography

Jianmei Yu received her PhD in Food Science from Louisiana State University (USA) in 1998. She is currently a Research Scientist in Food and Nutritional Sciences, North Carolina A&T State University. Her research areas are analysis of food composition, value added utilization of agricultural by-product and all food allergen reduction. She has published more than 30 articles in peer journals and her publications were highly cited by other researchers in food science and nutrition.

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