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Yue He et al., J Exp Food Chem 2017, 3:2 (Suppl)
DOI: 10.4172/2472-0542-C1-008

2nd International Conference on

FOOD CHEMISTRY & NUTRITION

July 24-26, 2017 Vancouver, Canada

Aquafaba replaces egg white in sponge cake

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Aquafaba, the viscous liquid resulting from cooking chickpeas in water has been widely used by vegan community as an egg replacement that adds texture to food products, such as mayonnaise, pudding, ice cream, and baked goods. Furthermore, aquafaba is easily accessible and inexpensive. It is obtained by the consumer by simply straining seeds from the canning liquid. Thousands of webpages and YouTube videos have described the incorporation of aquafaba in recipes but many report failures in using aquafaba. There are many factors influencing aquafaba foaming capacity and stability. These need to be standardized to assure the final quality in aquafaba based foods. The purpose of this study is to investigate aquafaba as an egg white replacement in a sponge cake in which the typical major ingredients include egg white, sugar, and cake flour. Sponge cake is used in our study as a model system for investigating foam formation and stability of aquafaba from commercial canned chickpea. Texture properties and color of sponge cake made with aquafaba were compared to the properties of a similar cake recipe that included egg white. To our knowledge, this is the first research which describes the functional properties of the aquafaba and its application as egg replacer to make a sponge cake. The aquafaba obtained from each chickpea brand produced different foam properties and foam stability. In addition, aquafaba from some brands provided comparable foam volume and stability to that achieved with egg white. Sponge cake made with both eggs and aquafaba were similar in colour and had acceptable texture but aquafaba cake was harder, less springy, and less chewy than cake that included eggs. Based on our results, it appears that aquafaba has potential to replace egg white and produce eggless cakes. Further study about the factors affecting foam capacity and stability of aquafaba is needed to provide consumers more information so that this homemade egg replacer can be incorporated in homemade food products.

Biography

Yue He obtained her bachelor of Food Engineering degree from Jinan University in Guangzhou, China. She is currently a Master's student and majors in Biological Engineering in the Department of Chemical and Biological Engineering at the University of Saskatchewan. Her interests include utilizing traditional oilseeds and pulses to produce novel and healthy food products. Previously, she conducted research into production of food oil with no trans-fat acid using lipase-catalyzed interesterification in a packed bed reactor. Her research attention now focuses on formulation of new eggless food products with chickpea liquid (aquafaba) as an egg replacer.

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