OMICS Group Conferences
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International Conference and Exhibition on
Traditional & Alternative Medicine
December 09-11, 2013 Radisson Blu Plaza Hotel, Hyderabad, India

Gluten free diet as an alternative treatment for celiac disease

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Celiac disease (CD) which is a gluten sensitive inflammatory disorder of the small intestine, also known as gluten intolerance, results due to an intolerance to gliadin and glutenin proteins. The only effective treatment for celiac disease is a life-long gluten-free diet, a recommendation updated by American Dietetic Association in 2006. Gluten-free breads and cookies are principally based on flour from rice or maize with low content and poor-quality proteins. However, Quinoa flour fortified with freeze dried blueberry powder was found more nutritious because of the higher protein, iron, calcium and fiber contents in Quinoa flour. Two products muffins and cookies were tried, considering an important part of a daily breakfast. Products were fortified with freeze dried blueberry powder, which contains vitamin C and E, phenolics and anthocyanins. Shelf life expected to be high compared with traditional muffins/cookies, hypothesized because of the antioxidative properties of Blueberry without disturbing the nutritive value. Quinoa itself also has excellent antioxidant properties. A study was conducted to know the changes in texture, due to fortification of freeze dried blueberry powder for both the products. Studies were also made to observe the changes in antioxidant properties due to fortification, although, baking reduces antioxidant properties for both the products. A 9-point Hedonic scale was used to perform Sensory analysis. Microbiological growth as well as moisture content and water activity recorded after three months of storage. No microbial growth was observed for the products as expected.

Keywords: Gluten free flour, antioxidant properties, muffins and cookies

Biography

Sikha Bhaduri is presently in CUNY School of Public Health in Hunter College, NY. She received her Ph.D. in Food Technology and Biochemical Engineering from Jadavpur University of India followed by Post-Ph.D. training in Cell and Molecular Biology, Physiology from SUNY Downstate and SUNY Stonybrook.

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