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RESEARCH PAPER

Proximate composition and nutritional evaluation of gluten-free pasta

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Abstract : Celiac disease is a chronic inflammatory disorder of the intestine which being asymptomatic to causing severe malnutrition (Stoven*et al*., 2012). A gluten free diet (GFD) is the mainstay of celiac disease treatment (Volta *et al*., 2013). The objective of this study was to optimize the proximate composition and sensory properties of pasta samples prepared from different blends of gluten-free maize, quinova and ragi flours. Response surface methodology was used to formulate the composite blends, which gave 32 samples. Developed pasta samples were analyzed for proximate composition using AOAC and AACC methods and sensory evaluation using Hedonic scale. Results of the proximate compositionrevealed that pasta samples with higher content of quinova flour indicated higher protein contents in them while the samples with higher ragi flour were high in ash content. Optimized combination for development of gluten-free pasta consisted of 50g maize flour, 17.311g ragi flour and 32.689g quinova flour with overall desirability as 0.781. Pasta sample prepared following optimized formulation provided 14.165% protein content,2.636% ash content and overall sensory acceptability scores 8.661. This result therefore indicates that the use of these underutilized crops has the potential to increase the nutritional intake of consumers of this product and at the same time can satisfy the nutritional need of the peoples who having the gluten related diseases or disorders.

Key Words : Celiac, Gluten-free, Maize, Ragi, Quinova, Proximate, Sensory

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