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Effect of soya flour, carrageenan and glyceryl monostearate as egg replacer on cake quality

Ibrahim Najjar and Setarehnejad A
Cardiff Metropolitan University, UK

A new formula of Soya flour (SF), Carrageenan (CG) and Glyceryl Monostearate (GMS) has been proposed to replace eggs in Madeira cake. The effect of the new formula was investigated by replacing egg at 25%, 50%, 75% and 100% with additional water, trialled against the standard cake containing 100% egg and no SF, CG or GMS. The quality characteristic of cakes were analysed by Volscan, Texture Analyser and bake loss to measure the volume, texture of the fresh and old cake and water loss during baking respectively. Results showed that an increase in egg replacement caused a decrease in cake volume, specific volume and height. Volume and specific volume were the most dependant cake properties and cake with 25% egg replacement showed no significant difference ($p < 0.05$) to standard cake in terms of volume. All cake samples showed similar texture in day one after baking compared to the standard cake. Ambient storage for a week led to a significant increase ($p < 0.05$) in firmness of all experimental samples compare to standard cake. However, there was an inverse relationship between increasing levels of egg replacer and the firmness, which could be attributed to the effects of the egg replacers combining with the additional water. Finally, by increasing the amount of egg replacer at levels over 50% bake loss increased significantly ($p < 0.05$), which could be due to differences in the bonding of water within the cake batter during baking.

Biography

Ibrahim Najjar has been awarded a Distinction in MSc (Food Science and Technology) from Cardiff Metropolitan University. He is a keen Researcher and has a great interest in Food Chemistry and Sustainability. He is working on publishing a paper out of his MSc dissertation topic and seeking to enroll on a PhD degree in Food Science related topic.

asetarehnejad@cardiffmet.ac.uk

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