

EFFECT OF OKRA GUM ON PASTING AND RHEOLOGICAL PROPERTIES OF CAKE BATTER

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Okra gum extract (OE) was obtained by blending seedless okra pods in 0.05 M NaOH solution and the extract was freeze-dried at pH 7. The present study was aimed to evaluate the effect of alkaline soluble OE on density, pasting, rheological and textural properties of cake batter using at 0, 2, 4, 6 and 8% flour weight basis. A decreasing trend in batter density (g/cm^3) was observed with increasing the OE concentrations. Rapid Viscosity Analyzer (RVA) profiles indicated significant ($p < 0.05$) difference in viscosity by replacing OE. However, more pronounced effect was depicted by 8% with a viscosity of 2607cP. Shearing effect on the cooked batters, obtained from RVA (50°C), was studied by Brookfield rotational viscometer. Profiles signified an increase in shear stress as a function of shear rate, confirming a pseudo-plastic behaviour of the blends ($n < 1$). Consistency coefficient (K) and flow behaviour index (n) was evaluated using Power-Law model. The highest K (3.6) presented by the 8% OE batter strengthening the viscosity data, while the least flow behaviour index ($n = 0.466$) justified highest pseudo-plasticity of batter. The activation energy (E_a) calculated by Arrhenius equation was between 2-8 kJ/mol, depicting massive impact on batter thermal stability. Texture of cooked batters was measured using Brookfield texture analyser using TPA profile where decreased hardness was seen with higher OE levels. In summary, addition of OE greatly manipulated viscometric and thermal stabilities of cake batters.

Keywords: Okra gum, rheology, cake batter

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