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Abstract

Effect of Pomelo Albedo Dietary Fiber on the Quality of Bread

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Abstract: This research aimed to investigate the effect of dietary fiber from pomelo albedo (PF) to improve the nutritional quality of bread. The PF was extracted from pomelo albedo and dried at 65 °C for 24 h. Dried PF was milled and then sieved through an 80-mesh screen. The physicochemical properties demonstrated that the total dietary fiber of PF was approximately 72.74% wb. The water and oil absorptions of PF were 18.26 and 4.28 g/g dry sample, respectively. The emulsion activity and emulsion stability of PF were about 47 and 46%, respectively. The experiment was designed to investigate the effect of PF content (1–5%) on the quality of wheat bread. The sample with no PF was used as a control. Due to the high-water absorption of PF, the amount of water was measured using a Farinograph as required to reach 500 BU of consistency. The addition of PF in wheat bread for up to 1% did not show a significant difference in loaf-specific volume. The increase of PF significantly increased ($p < 0.05$) crumb firmness and Relative elasticity but had no effect on crumb porosity. The total dietary fiber of bread increased from 3.96 to 9.02% db when the PF was added up to 5%. Overall, PF has the potential usage in bread-making to increase daily fiber intake. The output of this research suggests that PF can also be used as a source of dietary fiber in other food products and food industrial applications.

Keywords: bread; pomelo albedo; textural property; dietary fiber; specific volume

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