

Evaluating Effect of Fat, Sugar and Flour Substitutes on Properties of White Slice Dairy Bread

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Abstract

White slice dairy bread (WSDB) is the most important industrial bread consumed in Argentina, it results an interesting target for developing a reduced calorie bread as it contains fat and sugar in its formulation. However, substitutions of ingredients should be carefully studied to keep original properties of the bread. The aim of this study was to evaluate the effects of three commercial products, Toler Fat Less Saladas (TFLS) as fat substitute, Granofiber Sweet (GS) as sugar substitute and Granofiber Sym 200 (GS200) as flour substitute, in order to improve nutritional profile of WSDB. The rheological properties, evaluated by Rheofermentograph and Mixolab, were studied on flour and on white slice dairy bread formulation. Additionally, texture profile analysis was applied on baked bread. TFLS caused a similar effect to fat. GS showed less gas production than sugar during fermentation stage, however baked bread presented similar loaf specific volume. Substitution of flour with GS200 revealed significant decrease of fermentation capacity and dough development. Otherwise, bread loaf specific volume showed satisfactory results when GS200 was applied, allowing to formulate a high fiber bread with similar end-product texture properties to original bread. We conclude that substitutes evaluated in this work can be used for breadmaking to improve nutritious quality of bread for health benefits.

Keywords: White bread, fat substitute, sugar substitute, flour substitute, dough rheology, bread texture