

Abstract

The increasing demand of gluten free products has prompted the launching of numerous bakery gluten free products with similar quality to their wheat containing counterparts. Nevertheless, those products are mainly design focused on the technological quality and without considering the nutritional quality. The objective of this research was the scientific design of baked gluten free products (breads and muffins) based on rice flour, from technological, sensorial and nutritional point of view. The study included the evaluation of commercial gluten free breads and the design of new formulations to establish the correlations between the dough properties and the technological parameters of the baked products. In the muffins design, special emphasis was put on determining the role of proteins on the rheological properties of the formulated doughs and the product characteristics. Commercial gluten free breads showed great variation in the nutritional profile; in general they had low protein content and high content in fats. The formulated products, gluten free both breads and muffins, had adequate protein content and great variability in the technological characteristics. The rheological analysis of the gluten free doughs and the technological and sensorial parameters of the baked goods, allowed establishing positive correlations between the hydration properties of the crumb and some textural parameters and also between the TPA-hardness and the dough rheological parameters obtained with the Mixolab, which can be used as quality predictors for gluten free breads. The rheology of the formulated doughs for making muffins based on rice flour confirmed that the rheological properties of the batters are governed by the type of protein added. In general, the egg white protein conferred to the batter the necessary viscoelastic properties for obtaining the best quality muffins.