



EVALUATION OF RHEOLOGICAL, SENSORY AND NUTRITIONAL QUALITIES IN GLUTEN-FREE BREAD FORMULATIONS

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ABSTRACT

The increase in the number of people suffering from celiac disease has also increased the demand for gluten-free breads, which are mainly of poor sensory quality and low nutritional value. Therefore, the purpose of this paper is to create new formulations using rice flour, chickpea flour, and beans and to study the rheological, nutritional, and sensory qualities of the bread.

The results showed that the gluten-free bread had different rheological qualities, and only mixes M5 and M6 had similar rheological qualities such as dough development, stability, and degree of softening to the control bread M1. Gluten-free bread from mixes M2 and M3 had higher contents of protein, fat, cellulose, and minerals, while breads from mixes M5 and M6 had medium contents. Bread M2 and M3 had acidity levels above the allowed limits. Sensory analyses showed that bread M5 and M6 have similar sensory qualities to the control bread M1 and fall into the same quality category, but bread from the M5 mixture has a much better taste and aroma. For consumption, we recommend using gluten-free bread from the M5 mix, which in its composition has 80% rice flour, 7.5% chickpea flour, 5% bean flour, and 7.5% egg powder.

Keywords: bean flour, sensory properties, nutritional value, gluten free bread.