

Influence of Frozen Storage On Physical and Sensorial Properties of Partially-Baked Gluten-Free Bread

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Abstract- In this study it was aimed to determine the influence of frozen storage at -18 °C during 0, 5, 10, 15, 30 and 45 days on physical and sensorial properties of partially baked gluten free bread (GFB). Potato starch, corn starch, corn flour, chickpea flour and rice flour were used for GFB formulation. A standard wheat dough frozen stored and rebaked bread (CB) was taken as control. Specific loaf volume, width, length and height of CB were found higher than GFB. Loaf volume of the CB were began to decrease at fifth days frozen storage while declined at the loaf volume of GFB were observed after 15 days storage. GFB bread crusts were showed higher brightness, lower redness and yellowness than CB. Frozen storage was not statistically affect the color values of breads. Apart from the symmetry and crumb color sensorial properties such as loaf volume, crust color, textural structure, chewiness, taste, aroma, odor, overall acceptability and purchasing intent of CB was scored higher than GFB. Lower sensorial scores may be arisen from the unfamiliarity of non-celiac patients to GFB. Frozen storage up to 45 days were showed no significant differences among sensorial characteristics of part baked GFB. When sensorial and physical properties were evaluated together, fresh bread need of celiac patients can be met in on a large scale partially baking and frozen storage.

Keywords- Celiac, freezing and part baking, sensorial properties