

## DOUGH RHEOLOGY AND CAKE QUALITY OF WHEAT–LENTIL FLOUR BLENDS

H. Ben Haj Koubaier<sup>1,2\*</sup>, A. Snoussi<sup>1,2</sup>, M. Chabir<sup>1</sup>, N. Bouzouita<sup>1,2</sup>

<sup>1)</sup> High School of food Industries, Tunis, Tunisia

<sup>2)</sup> Laboratory of Organic and Structural Chemistry, Tunis, Tunisia

Legume flours, due to their amino acid balance and their demonstrated nutritional benefits, are ideal ingredients to improve the nutritional characteristics of bakery products. In the present study, we have investigated the influence of the partial substitution of wheat flour by lentil flour at the levels of 10; 15 and 20%, on the quality characteristics of the dough and the cake. Obtained results showed that lentil flour addition reduced the dough development time and dough elasticity. Moreover, with the increase of lentil flours levels, a decrease of tenacity, deformation energy and swelling index of dough was observed whereas extensibility increased. A significant difference in physical characteristic between cakes fortified with lentil flour and control was showed ( $P < 0.05$ ). With the increase of lentil flour levels in formulation, cakes density increased whereas water activity, L\* and b\* crust and crumb color values decreased. Increasing levels of lentil flour caused increases in total sensory scores. The overall acceptability rate showed that 15 and 20% lentil flour can be incorporated to prepare acceptable quality cakes.

Keywords: Legumes, lentil, flour, cake, rheological parameters

---

\* Corresponding author: h.kbaier@gmail.com