



Effect of artichoke (*Cynara scolymus L.*) by-product on the quality and total phenol content of bread

Maroua Boubaker^{1,2}, Chokri Damergi³, Chaima Ben Marzouk¹, Christophe Blecker⁴ and Nabih Bouzouita^{1,2,*}

¹ University of Carthage, High School of Food Industries of Tunis, Avenue Alain Savary 58, 1003 Tunis, Tunisia

² Faculty of Sciences of Tunis El Manar, Laboratory of Organic and Structural Chemistry, Campus Universitaire, 2092, Tunis, Tunisia

³ Institut National Agronomique de Tunisie (INAT), 43 Avenue Charles Nicole, 1083 Tunis, Tunisia

⁴ Department of Food Technology, Gembloux Agricultural University, Passage des Déportés 2, B-5030 Gembloux, Belgium

Abstract: Legume flours, due to their phenol and fibre content, are ideal ingredients for improving the nutritional value of bakery products. In this study, artichoke stem powder (ASP) was used to substitute 0%, 2.5%, 5%, 7.5% and 10% of wheat flour for making breads. Proximate composition of wheat flour and ASP were determined. Bread qualities and total phenols content were analyzed and compared with those of wheat bread. Results show that ASP contained 10.37% moisture, 10.28% ash, 11.53% protein, 0.86% fat, 51.29% fibre and 1350 mg EAG/100g d.m. ASP addition considerably modified the bread quality: altered appearance and texture, darker crumb and more intense odour were observed. From the sensory evaluation, tastes of bread with higher content of ASP (7.5 and 10%) were the most acceptable for assessors. Total phenol contents of breads significantly increased with the addition of ASP. Therefore ASP may be considered as valuable ingredients for industrial manufacture of functional foods.