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## **3rd SESSION - ECONOMY, MARKETING, HARVEST AND FRUIT PROCESSING**

### **3ª SESSÃO – Economia, Mercado, Colheita e Processamento Da Castanha**

#### **Development and characterization of wheat breads with chestnut flour**

#### **Desenvolvimento e caracterização de pães de trigo com farinha de castanha**

MARTA GONZAGA<sup>1</sup>, RAQUEL GUINÉ<sup>2</sup>, LUÍS BATISTA<sup>3</sup>, LUÍSA BEIRÃO-COSTA<sup>4</sup> & PAULA CORREIA<sup>2\*</sup>

<sup>1</sup>*Escola Superior Agrária de Viseu, Quinta da Alagoa, Estrada de Nelas, Ranhados, Viseu, Portugal.*

<sup>2</sup>*CI&DETS, Instituto Politécnico de Viseu, Av. Coronel Vale de Andrade, Viseu, Portugal*

<sup>3</sup>*Fabrica do Pão. Seia, Portugal.*

<sup>4</sup>*LEAF, Instituto Superior de Agronomia, Tapada da Ajuda, 1349-017 Lisboa, Portugal.*

\* *paulacorreia@esav.ipv.pt*

#### **ABSTRACT**

The use of wheat and acorn flours in the production of breads was studied, in order to develop an innovative food product with good textural and sensorial characteristics. Flours were characterized considering their rheological properties. The farinographic experiences showed that the water absorption of wheat doughs with 10% of chestnut was generally similar. The energy, the resistance to extension and the extensibility of doughs increased with the addition of chestnut flour and with the proving time. Wheat bread with 10% of chestnut flour was produced and



characterized considering the physical-chemical, textural and sensorial properties. The breads presented low moisture but a considerable water activity, and maintained the values during storage time. Breads with chestnut flour showed less density, which was maintained or decreased during the storage time. The breads were quite white, even the breads with chestnut flour, and during storage the colour parameters changes differently, mainly the  $a^*$  parameter, becoming the bread more reddish. The addition of chestnut flour produced breads with high alveolar number, total area, and low mean size. The elasticity of breads did not vary significantly, but the hardness, cohesiveness and chewiness were different for breads produced with chestnut. The addition of chestnut flour influenced significantly the appearance of bread, also becoming sweeter and presenting a higher score in the global appreciation.

**Keywords:** Wheat, chestnut, bread, rheological properties; physicochemical properties, sensorial analysis.