

Production of salted biscuits with mushroom flour

Paula M. R. Correia^{1,2*}, Sabrina A. Esteves², Raquel P. F. Guiné^{1,2}

¹CI&DETS, Polytechnic Institute of Viseu, Campus Politécnico, Repeses, Viseu, Portugal

²Dep. Food Industry, Agrarian school of Viseu, Quinta da Alagoa, Ranhados, Viseu, Portugal

*raquelguine@esav.ipv.pt

ABSTRACT:

The purpose of this work was the development of an innovative salted biscuit produced with partial replacement of wheat flour by Shiitake mushroom flour, to be used as a snack food or a food starter. The mushroom flour was produced by drying the mushrooms at 40, 50, and 60°C, with the evaluation of moisture content, water activity and color parameters. Then, salted biscuits were prepared with these flours in the proportions of 5%, 10% and 15%. The produced biscuits presented low moisture content and water activity, meaning that they were within the estimate limits for these products to be considered stable, since they have values below 4% and 0.6 respectively. The color analysis revealed that the products tend to be darker, lower L* values, with the increase of the mushroom flour proportion, and were also darker for flour produced at higher drying temperatures. The same tendencies were also observed for a*, being redder as the proportion of mushroom flour and temperatures increased. Regarding b*, small differences were observed for yellowness. Generally, the hardness of the biscuits increased with the increasing of the introduced mushroom flours and the dry temperature used for mushroom flours production, ranging from 40 N to 58 N. However, the results of sensorial evaluation indicated that the panellists were not able to differentiate this property. The major differences between the produced biscuits were the taste, aroma and color, being the textural properties considered by the panellists as very closed. The most appreciated salted biscuit was the one produced with 15% of mushroom flour, independent of the drying temperature used for mushroom flour production. This biscuit presented good nutritional properties, with high carbohydrate and moderate content in protein (6.4%) and fibre (1.6%), with high energy (1854.75 kJ/ 100 g of product), but on the other hand it also presented high content of salt (0.97%).

Keywords: Shiitake, flour, salt biscuit, physicochemical properties, sensorial evaluation.