

**XX ENCONTRO
LUSO-GALEGO
DE QUÍMICA**

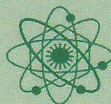
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Evaluation of some chemical properties of different flours

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The antinutritional factors in flours include phenol, tannin, oxalate, phytate and alkaloids [1]. Wheat is one of the most important food for the world population, in which about 35% of the total world population regularly consume wheat-based foods [2]”ISSN” : “1879-0003”, “PMID” : “24325856”, “abstract” : “The chemical composition, rheological and gelatinization characteristics of waxy wheat flour were investigated. Compared with wheat flour, waxy wheat flour has lower protein (9.52%. In recent times, there has been growing interest in using chestnut flour for use in bakery because its chemical composition is close to many cereals [3]. The acorn is the fruit with an edible oval that grows on trees called by oaks, and contains in its composition a high starch content. There are available on the market a great variety of industrial products made from acorn flour or starch, including breads, cakes, soups, jelly, among others range [4]. The lupine flour is of enormous importance, being widely used in the food industry to improve the nutritional value of other foods [5].

In this work, five types of flours made were evaluated in relation to some chemical properties (oxalate, phenolic compounds and antioxidant activity).

At the chemical level the results show some variability between samples by type of flour, and the sample of chestnut flour presented higher value of oxalate (3.48 g/100g) when compared to the other samples in the study. With respect to the content of phenolic compounds the sample that stood out was the acorn flour, having a value of 0.812 g EAG/100 g. Regarding the determination of antioxidant activity the sample that showed a slightly higher value than the other samples was the sample of wheat flour with a value of 0.746 mM TE/g sample.

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REFERENCES

- [1] A. Olufunmilola and A. Rahman, “Effect of delayed harvesting and pre-treatment methods.PDF” Food Chemistry, 2014.
- [2] H. Zhang, W. Zhang, C. Xu, and X. Zhou, “Studies on the rheological and gelatinization characteristics of waxy wheat flour,” *International journal of biological macromolecules*, vol. 64, pp. 123–9, Mar. 2014.
- [3] M. Aponte, F. Boscaino, A. Sorrentino, R. Coppola, P. Masi, and A. Romano, “Effects of fermentation and rye flour on microstructure and volatile compounds of chestnut flour based sourdoughs,” *LWT - Food Science and Technology*, vol. 58, no. 2, pp. 387–395, Oct. 2014.
- [4] W. W. Kim and B. Yoo, “Rheological and thermal effects of galactomannan addition to acorn starch paste,” *LWT - Food Science and Technology*, vol. 44, no. 3, pp. 759–764, Apr. 2011.
- [5] J. F. Crespo, J. Rodríguez, R. Vives, J. M. James, M. Reaño, P. Daroca, C. Burbano, and M. Muzquiz, “Occupational IgE-mediated allergy after exposure to lupine seed flour,” *Journal of Allergy and Clinical Immunology*, vol. 108, no. 2, pp. 295–297, Aug. 2001.