

# BOOK OF ABSTRATCS

6TH MEETING  
OF YOUNG RESEARCHERS OF UNIVERSITY OF PORTO



# CREDITS

Livro de Resumos IJUP'13

6º Encontro  
de Investigação  
Jovem da U.Porto

© Universidade do Porto  
AA ID+i  
t.22 040 81 46  
secidi@reit.up.pt

## **Design**

Ana Fernandes & Daniel Martins  
Rui Mendonça

## **Impressão e acabamentos**

Invulgar – artes gráficas

## **Tiragem**

1000 **exemplares**

## **Depósito Legal**

## **ISBN**

978-989-746-006-7

# Portuguese autochthonous *Laurus* sp.: nutritional and phytochemical composition of leaves

**L.C. Pereira<sup>1,2</sup>, A.F. Vinha<sup>1,3</sup>, R. Alves<sup>1,4</sup>, A.Costa<sup>1</sup>, M.B.P.P. Oliveira<sup>1</sup>**

<sup>1</sup> REQUIMTE, Faculty of Pharmacy, University of Porto, Portugal.

<sup>2</sup> Faculty of Pharmacy, University of Coimbra, Portugal.

<sup>3</sup> Faculty of Health Science, University Fernando Pessoa, Portugal.

<sup>4</sup> REQUIMTE, School of Engineering, Polytechnic of Porto, Portugal.

Medicinal plants have been used for centuries as remedies for human diseases due to their chemical components of therapeutic value. *Laurus* sp. belongs to the family Lauraceae, which grows in the Mediterranean region. Their leaves have been used to treat neurological disorders, while the essential oil is useful in pain relief and presents antibacterial activity [1]. In Portugal, there are only three species of *Laurus*: *L. nobilis*, native to mainland Portugal, *L. azorica* (Seub.) Franco and *L. novocanriensis*, two autochthonous species from Azores and Madeira archipelagos, respectively. Scarce information exist about autochthonous *Laurus* sp. collected in Portugal, especially those usually consumed in the Portuguese diet [3,4]. Therefore, in this work, we studied the nutritional value and some phytochemicals content of fresh and dried plants collected in the North of Portugal (*L. nobilis*), Azores (*L. azorica*), and Madeira archipelagos (*L. novocanriensis*), where people frequently use them for traditional medicine and gastronomy.

Moisture, ash, protein and fat contents were evaluated according to AOAC methodologies [5]. Total carbohydrates were determined by difference. Fatty acid profiles were obtained by GC-FID analyzing fatty acid methyl esters which were prepared by transmethylation using BF<sub>3</sub>. Total phenolics, flavonoids, and tannins were also isolated and their contents determined by spectrophotometric measurements.

Qualitative and quantitative chemical differences were observed between *Laurus* sp. collected from the three different regions of Portugal. Samples also showed different morphologic properties. The results suggest that species discrimination could be possible based on their leaves characteristics.

Acknowledgments: R. Alves is grateful to FCT for a post-doctoral grant (SFRH/BPD/68883/2010) financed by POPH-QREN-Tipologia 4.1-Formação Avançada, subsidized by FSE and MCTES. This work has been supported by FCT through grant no. PEst-C/EQB/LA0006/2011.

## References:

- [1] Derwich, E., Benziane, Z., Boukir, A. (2009) *Chemical composition and antibacterial activity of leaves essential oil of Laurus nobilis from Morocco*. Australian Journal of Basic and Applied Sciences, 3(4), 3818-3824.
- [3] Ramos, C., Teixeira, B., Batista, I., Matos, O., Serrano, C., Neng, N. R., Nogueira, J. M.F., Nunes, M.L. and Marques, A. (2012). *Antioxidant and antibacterial activity of essential oil and extracts of bay laurel Laurus nobilis Linnaeus (Lauraceae) from Portugal*. Natural Product Research. 26: 518-529.
- [4] Castilho, P. C., Costa, M. C., Branco, P. C. and Costa, M. (2004). *Characterization of Triacylglycerols in Madeira Laurel Oil by HPLC-Atmospheric Pressure Chemical Ionization-MS*. Journal of the American Oil Chemists Society. 81: 913-919.
- [5] AOAC International (2000). *Official methods of analysis of AOAC International. 17th edition*. Association of Analytical Communities, Gaithersburg, MD, USA.