



2nd Symposium on Medicinal Chemistry of University of Minho

8 May 2015

SCHOOL OF SCIENCE, CHEMISTRY DEPARTMENT

Campus de Gualtar

Herbal infusions for medicinal purposes: comparative study of the nutritional and energetic contribution of twenty-seven aromatic plantsC. Pereira^a, L. Barros^a, I. C. F. R. Ferreira^a

^a Mountain Research Centre (CIMO), ESA, Polytechnic Institute of Bragança, Campus de Santa Apolónia, apartado 1172, 5301-855 Bragança, Portugal; carlap@ipb.pt.

Aromatic plants have been used worldwide for centuries for nutritional and medicinal purposes. They are traditionally used as herbal infusions for their attractive aroma and specific taste but also in folk medicine as carminative agents against bronchitis and ulcers, as diuretics, depuratives and vermifuges, as also for their antiscorbutic, antispasmodic, tonic, antimicrobial, anti-inflammatory, antimutagenic and anti-carcinogenic properties [1,2]. Nevertheless, despite the increasing recognition of their beneficial effects, there is a growing loss of diversity of these herbs [3]. Furthermore, the majority of the studies with plants consumed as infusions that are available in literature do not include analyses in the infusion (which is the real consumed form), but in dry material. Thus, in the present work, we aimed to provide scientific information concerning the nutritional value and energetic contribution of infusions prepared from twenty-seven widely used plant species in order to systematize the results obtained for an easier comparison.

Most of the herbal infusions analysed presented fructose, glucose and sucrose in very low amounts, with concentrations ranging from 6.15 to 26.80 mg/100 mL, and eight of these infusions did not reveal the presence of any carbohydrate. *Chamaespartium tridentatum* (L.) P.E. Gibbs. subsp. *cantabricum* (Spach) and *Equisetum giganteum* L. revealed the highest content of fructose (13.60 mg/100 mL) and glucose (12.65 mg/100 mL), respectively. Regarding to sucrose, the highest concentration was found in *Cymbopogon citratus* (DC.) Stapf. (11.50 mg/100 mL). Among all the infusions, *Lavandula angustifolia* Miller gave the highest energetic contribution (107.20 cal/100 mL), whereas *Mentha x piperita* L. (25.20 cal/100 mL), *Thymus x citriodorus* (Pers.) Schreb. (24.60 cal/100 mL) and *Thymus mastichina* L. (33.60 cal/100 mL) presented the lowest energy, without significant statistical differences.

The results obtained in the present systematization study will allow the readers to perform easy and quick comparisons among these different aromatic plant infusions regarding nutritional purposes.

Acknowledgments:

The authors are grateful to "Cantinho das Aromáticas" for samples providing and to FCT (Portugal) for financial support (PEst-OE/AGR/UI0690/2014_BI/CIMO/14/dietsuppl).

References:

- [1] D. Horžić *et al.*, *Food Chem.*, **2009**, 115, 441-448.
- [2] M. Mueller, S. Hobiger and A. Jungbauer, *Food Chem.*, **2010**, 122, 987-996.
- [3] V. H. Heywood, *J. Ethnopharmacol.*, **2011**, 137, 1-15.