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Revista de Fitoterapia

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LIBRO DE RESÚMENES · LIVRO DE RESUMOS · BOOK OF ABSTRACTS



ISE 2010

11th Congress of the International Society
of Ethnopharmacology.

*Continuity and change in ethnopharmacology:
Transdisciplinary science for our future*



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Los desafíos de la Etnobiología en España y Portugal

I Encontro Hispano-Português de Etnobiologia:
Os desafios da Etnobiologia em Espanha e Portugal

Albacete, Castilla - La Mancha (España). 20-25/Sept/2010

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ISE3-P64	Immune regulation effects of Abnormal Savda Muziq granules on mice A. Yusup, G. Imam, N. Rozi, A. Aikemu, B. Berke, N. Moore, H. Upur	
ISE3-P65	Quality control of <i>Verbascum thapsus</i> L. product in the market M.T. Barquero, J. Güemes, I. Martínez-Solís, P. Soriano Guarinos	
ISE3-P66	Essential oils of <i>Salvia blancoana</i> ssp. <i>mariolensis</i> and <i>S. microphylla</i> : two taxa from the north of Alicante (Spain) used in traditional herbal liquors V. Martínez-Francés, R. Vila, S. Ríos, J. Juan, S. Cañigueral	
ISE3-P67	Epicatechin stimulates gastric mucus production and protects the stomach against ethanol and indomethacin. A. Tanimoto, A.L. Rozza, B.B. Gregorio, T.M. Moraes, H. Kushima, C.A. Hiruma-Lima, C.H. Pellizzon	
ISE3-P68	The biologically active substances of <i>Barbarea vulgaris</i> R. Br. M. Marenich	
ISE3-P69	Ethnopharmacology of ethnic Kichwa and Shuar in the Ecuadorian Amazon M. Alessandrini Díaz, M. Lorena Cadme, Y. Betancourt Figueras, M. Torres Morocho, P. Aragón	
ISE-5		151
ISE5-001	German Renaissance herbals from a pharmacological perspective M. Adams, M. Kessler, M. Klugea, M. Hamburger	
ISE5-002	Prevalence of Materia Medica in European medicine along the last third of nineteenth century: the French case J.L. Fresquet-Febrer, C.P. Aguirre-Marco	
ISE5-003	Western herbal practice in Australia and the US: medicinal plants, colonisation and the transfer of knowledge S. Evans	
ISE5-004	<i>Cannabis</i> spp. and Ethnopharmacology: historical and anthropological perspectives on plants, consciousness and healing A. Waldstein	
ISE5-005	Five centuries in the Spanish Ethnobotany: from Laguna to Font Quer R. Morales, M. Pardo de Santayana, J. Tardío	
ISE5-006	Observations on Ethnobotany as a support for archaeobotanical reconstructions: <i>Citrullus colocynthis</i> (L) Schrader, use in Saharan Areas I. Massamba N'siala, A.M. Mercuri, S. Biagetti	
ISE5-P01	Using traditional pesticides by Iranian and Moslem physicians in Combat against harmful animals Nasser Mahdavi Shahri, Baharara J.	
ISE5-P02	Migration, nutrition and aging across the life-course of Bangladeshi families: Exploring food and medicinal uses of plants across transnational and generational landscapes H. Jennings	
ISE5-P03	History, custom and the use of medicinal insects. Blister beetles from the Mediterranean World to Americas E. Motte-Florac	
ISE-6		156
ISE6-001	Mazatecs ethnopharmacy 70 years after Schultes: an historical comparison P. Giovannini, M. Heinrich	
ISE6-P01	Presencia y distribución de polifenoles en la frutilla chilena (<i>Fragaria chiloensis</i> ssp. <i>chiloensis</i>): un estudio mediante HPLC-DAD y HPLC-MS/MS G. Schmeda-Hirschmann, M.J. Simirgiotis, J. Cheel	
ISE6-P02	A feast of yellow: Notes on safflower use in Alentejo (Portugal) H. Sapeta, A.S. Dias	
ISE6-P03	Brain acetylcholinesterase inhibition by <i>Plectranthus barbatus</i> herbal tea P.L. Falé, L. Ascensão, M.L. Serralheiro	
ISE6-P04	Enrichment study of virgin olive oil with antioxidants phenolic acid from natural food plants. J.J. Berzas Nevado, V. Rodríguez Robledo, C. Sánchez-Carnerero Callado	
ISE6-P05	Nutritional and nutraceutical composition of two Lamiaceae traditionally used in Portugal as spices, flavours or medicines A.S.F. Fernandes, L. Barros, A.M. Carvalho, I.C.F.R. Ferreira	
ISE6-P06	Ethnobotany and foraging behaviour: a new approach for an emerging problem. <i>Lactuca alpina</i> (L.) A. Gray and unrelated toxic plants consumed as food M.L. Colombo, S. Perego, C. Vender, F. Davanzo	
ISE6-P07	Plants Used as Food and Medicine by Polish Immigrants in Misiones, Argentina M. Kujawska	
ISE6-P08	Wild Food Plants used by the Walser ethnic minority in the Alps D. Rivera, C. Obón, F. Alcaraz	
WORKSHOPS (W)		161
W1		163
W1-01	Ethnobiology and ethnopharmacology: challenges for junior researchers S. Cristians	
W2		163
W2-01	Use of ethnobotanical results in outreach and education: from community workshops to curriculum development and cultural sensitivity training I. Vandebroek	
W2-02	Missouri Botanical Garden: partnership and capacity building in ethnobotanical research in Northern Peru R.W. Bussmann	
W2-03	School kids as Ethnobotanists - Knowledge transmission in the Biosphere Reserve Großes Walsertal (Austria) S. Grassler, C. Schunko, C.R. Vogl	

ISE6-P04 Enrichment study of virgin olive oil with antioxidants phenolic acid from natural food plants.

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Background: Virgin olive oil (VOO), mainly produced in Spain, is the basis of "Mediterranean Diet" and provides a rich source of natural antioxidants which are directly linked to a reduced degenerative diseases such as, coronary heart disease and cancers of the breast, skin and colon ^(1, 2). In the same way, food plants (spices and herbs) are often used for their medical and antiseptic properties since show high antioxidant activity.

Objectives: The aim of this work is enrich VOO using some natural food plants such as thyme, rosemary and garlic and determine if these spices to be able to transfer some of their characteristic antioxidants to VOO. The main antioxidants found in the selected food plants were rosmarinic, caffeic and gallic acids bellowing all them, to phenolic acids.

Methods: A rapid, simple and reliable method for determination of phenolic compounds in VOO previously enriched with food plants using off-line solid phase extraction (SPE) and capillary electrophoresis (CE) with UV detector was optimized and validated.

The enrichment study was carried out steeping VOO with food plants a) over time (more than 30 days), b) stirring at room temperature and c) stirring using temperatures higher 25°C.

Results and conclusions: The results confirmed the presence of rosmarinic acid, caffeic acid and gallic acid, when the enrichment was carried out both stirring and stirring over temperature.

Keywords: antioxidants, capillary electrophoresis, enrichment, food plants, phenolic acids, VOO.

References: 1. Keys A, et al. The diet and 15 year death rate in the Seven Countries Study. *Am J Epidemiol* 1986;124:903-915. 2. Owen RW, et al. Olives and olive oil in cancer prevention. *Eur J Cancer Prev* 2004;13:319-326.

ISE6-P05 Nutritional and nutraceutical composition of two Lamiaceae traditionally used in Portugal as spices, flavours or medicines

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Background: Medicinal and aromatic plants are highly prized in Portugal. They are a good source of natural preparations containing effective bioactive compounds, including antioxidants which can be used for different applications, particularly as food additives and health promoting ingredients in the formulations of functional foods and nutraceuticals.

Objectives: To study the nutritional and nutraceutical composition and antioxidant properties of aerial parts from two Lamiaceae species (*Mentha pulegium* and *Thymus pulegioides*), often used.

Methods: Determination of proteins, fat, ash, and carbohydrates, and individual profiles in sugars and fatty acids by chromatographic techniques. Phytochemicals such as phenolics, flavonoids, vitamins and carotenoids were also determined. The antioxidant activity was accessed by four in vitro chemical and biochemical assays using animal cells.

Results and conclusions: *M. pulegium* revealed the highest contents of moisture, ash, proteins, fat, energy and sugars, while *T. pulegioides* revealed the highest contents of carbohydrates (89.35 g/100 g). *M. pulegium* have the best antioxidant properties ($EC_{50} < 0.56$ mg/mL), which is in agreement with its highest content in phenolics and in other antioxidants such as reducing sugars (7.99 g/100 g), ascorbic acid (7.90 mg/100 g) and tocopherols, particularly α -tocopherol (69.54 mg/100 g). These compounds could explain its uses as antiseptic, anti-inflammatory and as food preservative and special sauce. Moreover could have great potential in food and in pharmaceutical industries because of its flavouring properties and composition.

Keywords: Lamiaceae, phytochemicals, oxidative stress, Portuguese pharmacopoeia.

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