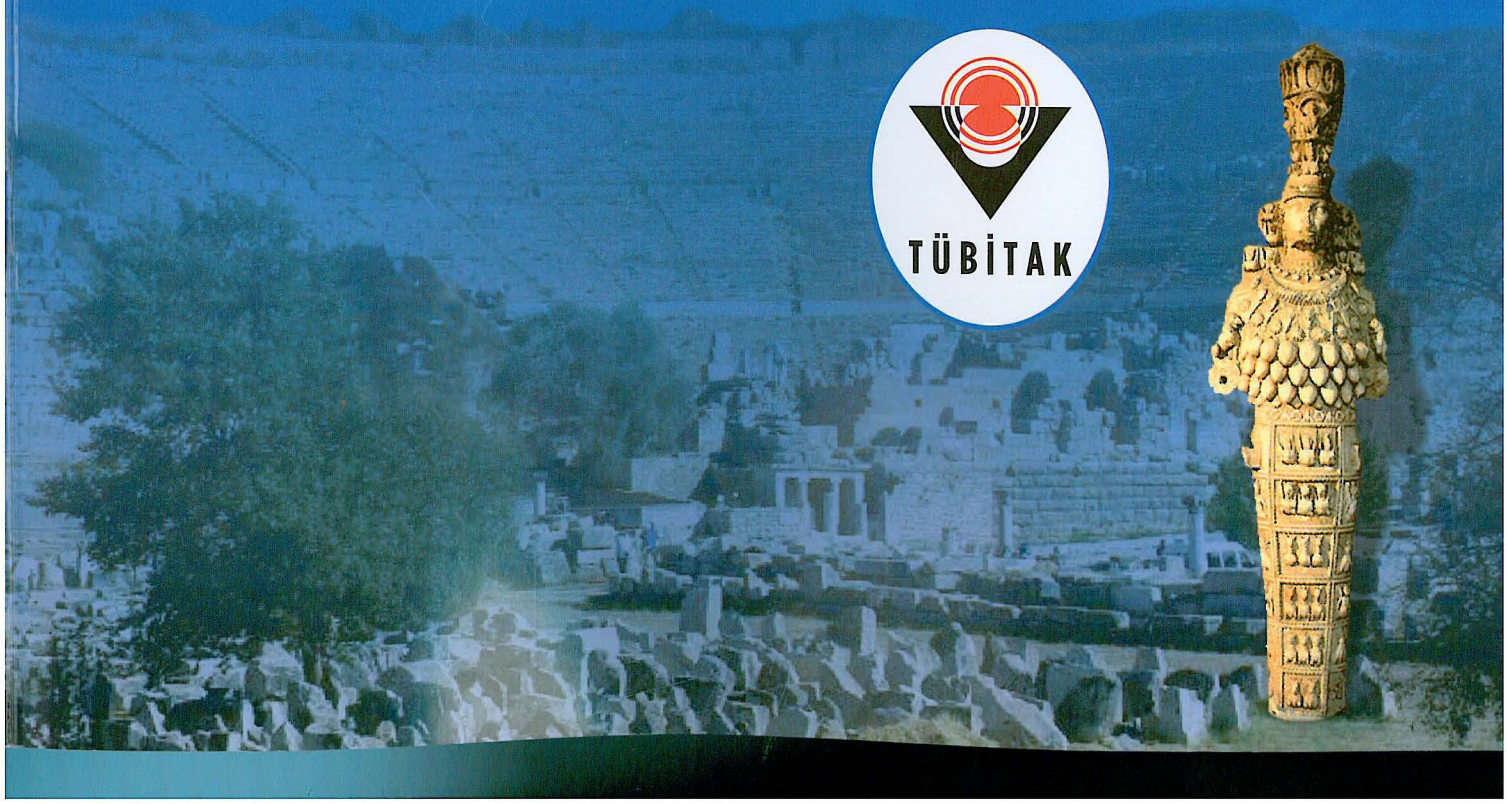
Organised by
Ege University Engineering Faculty
Food Engineering Department

INTERNATIONAL FOOD CONGRESS
Novel Approaches in Food Industry
NAFI 2014

26 - 29 MAY 2014

PINE BAY HOLIDAY RESORT, KUSADASI / TURKEY

ABSTRACT BOOK



KEYNOTE SPEAKERS

Prof. Dr. Syed Rizvi
Cornell University
Department of Food Science
366 Stocking Hall
Phone:(607) 255-7913
EML: ssr3@cornell.edu
Lecture: "Food Extrusion-Why it Matters and What is New?"

Prof. Dr. Ahmed Yousef
Ohio State University
Food Science and Technology Department
2015 Fyffe Ct
Columbus, OH 43210
Phone: (614) 292-7814
EML: yousef.1@osu.edu
Lecture: "Emerging natural antimicrobial peptides for food applications and beyond"

Prof. Dr. Giovanna Ferrari
Dept of Chemical and Food Engineering
University of Salerno
Phone:+39.089.964134
EML: gferrari@unisa.it
Lecture: "Non thermal technologies in the food industry: current applications and future challenges"

Prof. Dr. Gustavo V. Barbosa-Cánovas
LJ Smith 220
Biological Systems Engineering
Washington State University
Pullman, WA 99164-6120
Phone: (509) 335 – 6188
EML: Barbosa@wsu.edu
Lecture: "Advanced Methods for the Sterilization of Food"

ISBN: 978-605338-069-6

Basım Yeri: Üniversiteliler Ofset
Bornova, İZMİR
Tel : 0232 388 86 86
e-mail : universiteliler@universiteliler.com.tr

Lipid composition of seed oils of nine Spanish pomegranate (*Punica granatum* L.) cultivars

Luana Fernandes[1], José Alberto Pereira[1], Isabel Lopéz-Cortés[2], Domingo M. Salazar[2], Susana Casal[3] and Elsa Ramalhosa[1]

[1]Mountain Research Centre (CIMO) - School of Agriculture, Polytechnic Institute of Bragança, Campus de Stª Apolónia, Apartado 1172, 5301-855 Bragança, Portugal
[2]Departamento de Producción Vegetal. Universidad Politécnica de Valencia. Camino de Vera s/n, 46022 Valencia, Spain
[3]REQUIMTE/Laboratory of Bromatology and Hydrology, Faculty of Pharmacy, Porto University, Rua Jorge Viterbo Ferreira, 228, 4050-313 Porto, Portugal
elsa@ipb.pt

Abstract

Pomegranate (*Punica granatum* L.) is an ancient fruit tree traditionally cultivated in the Near and Middle East. Presently, it's most important growing regions include Afghanistan, Iran, Israel, USA, Italy and Spain, being the last country the largest European exporter. Pomegranate fruit can be divided into several anatomical compartments: outside peel, inside peel, and arils (pulp and seeds), being the last usually used for fresh consumption, juice, jams and jellies production. Even though pomegranate seeds are an industrial byproduct, recent reports have highlighted their potential use as a source of oil with beneficial chemical attributes. In spite of this the main objective of the present work was to characterize the seed oils of nine pomegranate varieties of European origin, collected in Spain, including their fatty acid and vitamin E compositions, to assess their potential to be used as nutraceuticals or functional food ingredients. All seed lipid fraction consisted mainly on punicic acid (*c*9,*t*11,*c*13 C-18:3) (ranging between 77.3% and 83.6% of total fatty acids), followed by small amounts of linoleic acid (C18:2n6), oleic acid (C18:1n9) and palmitic acid (C16:0). Regarding vitamin E composition, α-, γ-, δ-tocopherols were found in all pomegranate seed oils, mainly γ-tocopherol, with total tocopherols ranging from 174.5 to 627.3 mg/100g oil. Conversely, tocotrienols were not detected.
In conclusion, these results indicate that pomegranate seed oils are rich in punicic acid, a conjugated linolenic acid with interesting anti-carcinogenic activity, being simultaneously rich in tocopherols, of technological and nutritionally relevance.

Keywords: Pomegranate; seed oils; fatty acids; tocopherols; Spanish cultivars.