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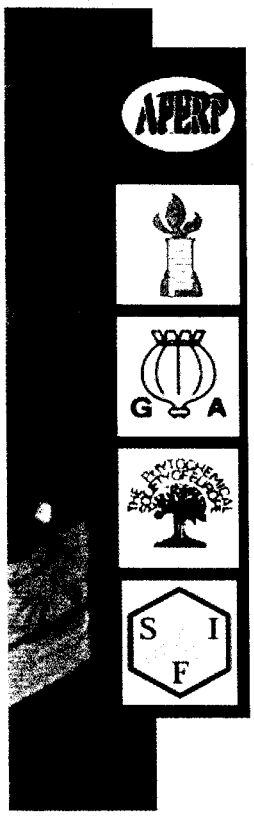

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Abstracts

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PE9 Effect of *Olea europaea* L. and *Salvia officinalis* leaves phenolics extracts on potato tubers soft rot disease

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Potato pest management has been until now largely based on chemical treatment but social demand for a more environment-friendly agriculture urges to reduce the use of pesticides. The use of medicinal plants as antimicrobial properties constitutes one of the most interesting and efficient control strategies to fight against soft rot *Pectobacterium* on potato. Recently, some natural essential oils and/or their major components used and proved efficient sprout suppressive and anti-microbial actions [1,2,3]. In this study we assessed the antimicrobial effect of methanol and acetone extracts of these plants against *Pectobacterium atrosepticum* using the agar diffusion methods [4] and half tuber test on potato [5]. Both acetone and methanol extracts tested show an antimicrobial activity at the concentration of 200 mg/mL with variables inhibition zones. The highest inhibitor effect was observed with acetone olive leaves extract wish exhibit inhibition zones of about 16 mm followed by methanol extract of *Salvia officinalis* (13 mm). The concentration of plants extract used on half tubers ranged from 25 to 400 µg. A significant decrease of the amount of tuber rotting treated with the four phenolics extracts was observed and varied from one extract to another. A pronounced inhibition (nearly 96% of the disease), was obtained by acetone extracts of *Olea europaea* L. leaves and methanol extracts of *Salvia officinalis* and *Olea europaea* L. leaves with 400 mg/ml. The results are very encouraging and suggesting that these two plants contains compounds having important antimicrobial properties and should be investigated to better understand their effect. References: 1. Pereira, A.P. et al. (2007). Molecules 12: 1153 – 1162.2. Taguri, T. et al. (2004). Biol. Pharm. Bull 27: 1965 – 1969. 3. Markin, D, et al. (2003) Mycoses 46: 132 – 136 4. Bartner, A. et al. (1994) Pharmazie 49: 512 – 516 5. Ibrahim, M. et al. (1978) Proceeding. 4thI PICPPB. Angers, 591 – 602.

PE10 Identification of *Frangula azorica* bark a Portuguese Medicinal Drug

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Frangula azorica V. Grubow is a medicinal plant of Macaronesia flora, endemic from Azores islands inscribed on IUCN Red List of Threatened Species [1]. Although belonging to Rhamnaceae family, known by two well known laxative herbal drugs present in Western Pharmacopoeia (*Rhamnus frangula* and *Rhamnus purshiana*) morphological and chemical studies are scarce about *F. azorica*. In sequence of our work on medicinal plants from Azores hereby, we present results of chemical and botanical studies conducted in order to identify significant markers for diagnosis of this herbal drug. Methodology used includes macroscopic and microscopic analysis of whole, fragmentised and powdered bark. Additionally, scanning electron microscopy was used. TLC profile of the bark methanol extract was compared with a similar extract of alder buckthorn bark. The most useful *F. azorica* macroscopic and microscopic characters observed include: A channelled external surface with frequent lenticels and inner surface orange-reddish; transverse section show flattened cork cells with red content and a collenchymatous cortex; parenchyma with mucilaginous glands; groups of sclereids; frequent cluster crystals and scarce prisms crystals of calcium oxalate scattered in the parenchymatous tissues; uni or biseriate medullary rays; scarce fibres. Quantification of major features was performed. Obtained results of the botanical study together with TLC profile permit the establishment of distinct characteristics for identification of *F. azorica* bark as herbal drug. References: 1. http://www.iucn.org/en/news/archive/2006/05/02 pr red list en.htm

PE11 Allelopathic potential of *Avena sativa* L. (oat) var. *Argentina*: bioassay-guided isolation of allelochemicals

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The term allelopathy, first introduced by Molisch in 1937, refers to chemical interactions among plants, including those mediated by microorganisms [1]. Allelopathy may be further defined as an important mechanism of plant interference mediated by the addition of plant-produced secondary products to the rhizosphere [2]. During the last 30 years, the potential implications of allelopathy for agriculture, like insect, pest and weed management, have been described and discussed in detail [3]. Chemicals with allelopathic potential are present in nearly all plants and their respective tissues, including leaves, stems, roots, flowers, seeds, bark, and buds. These phytotoxins may be released into the environment in sufficient quantities to affect the growth of neighboring plants [4]. Nearly every class of secondary products or metabolites has been implicated in allelopathic interference [3]. In the literature is reported that oats are resistant to a number of important crop diseases and are grown in crop rotation to limit build up of pathogens [5]. In this work we investigated the allelopathic potential of *Avena sativa* L. (oat) var. *Argentina* by bioassay-guided isolation of allelochemicals, after field experiments. They indicated the allelophatic activity of this plant against several weed species. Aerial parts of oat were extracted and fractionated on the basis of phytotoxic activity on lettuce seeds. The active fraction was successively analyzed by LC-PDA-ESI-MS/MS analysis leading to identification of compounds with allelophatic propriety, corresponding to a flavonoid mixture of isoorientin 2-*O*-glucoside, vitexin 2"-*O*-arabinoside and isovitexin 2"-*O*-arabinoside. References: 1. Inderjit (2001) Agron. J. 93: 79. 2. Inderjit (2005) Plant Soil 274: 227. 3. Weston, L.A., Duke, S.O. (2003) Crit. Rev. Plant Sci. 22: 367. 4. Weston, L.A. (1996) Agron. J. 88: 860. 5. Soriano, I.R. et al. (2004) Phytopathology 94: 1207.

PE12 Evaluation of several cultivars (*Tagetes* sp.) as a proper source for bioactive products

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The aim of this study was to identify the marigold varieties with the higher yield capacity, quality and economical results in order to use them for phytopharmaceutical and ecological protection purposes. In order to comply this goals the experiment used eight cultivars of African and French marigold organized in a collection field – six cultivars of *Tagetes patula* and two cultivars of *T. erecta*. During the testing period we registered the flowering period, the color, the diameter and the weight of inflorescences, the yield, the rated capacity of dried material and the percent of carotenoids for the fresh and dried material. The necessary work was also evaluated to harvest the inflorescences because we use handwork for that. ANOVA was computed for yield differences. From all varieties tested, we can strongly recommend the "Focul" cultivar, wich was created in 2006 at the Research and Development Station for Vegetables in Bacau, Romania. The color of the inflorescences at that cultivar are bright orange, the average diameter is 6 cm and the weight of 100 inflorescences is 79 g. The "Focul" cultivar presents a very good yield – 5240 kg/ha of dried inflorescences and is rich in carotenoids – 240.25 mg carotenoids/100 g dried material. When the comparison was made with "Flacăra", a cultivar *of Tagetes patula*, considered as control, "Focul" cultivar presented higher significance of difference regarding yielding capacity. *Acknowledgements: Authors would like to thank for financial support to the Ministry of Education and Research of Romania, represented by the National Center of Programme Management.*