

Volume 65 | Supplement 1 | 2019

ACTA MEDICA MARISIENSIS

OFFICIAL PUBLICATION OF THE
UNIVERSITY OF MEDICINE, PHARMACY, SCIENCES AND TECHNOLOGY OF TÂRGU MUREȘ



International Congress for Students, Young Doctors and Pharmacists MARISIENSIS

Tîrgu Mureș, Romania

27th of March – 31st of March 2019

BOOK OF ABSTRACTS

INFLUENCE OF SENSORY BOUQUET – TASTE, SMELL AND COLOR ON FOOD INTAKE AND METABOLISM

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Background: Food flavor perception is the result of a combination between senses, olfactory, gustatory, visual, and even the auditory and tactile ones. The ensemble created by these senses has a strong impact on the appetite and a direct influence on food digestion, a decisive factor in the metabolism. **Objective:** The aim of this paper is to emphasize the influence of organoleptic characteristics of food, like smell, taste and color on the appetite and food consumption, as well as highlighting the effects of different flavors on the metabolism. **Material and methods:** The analysis of scientific literature available on Pub Med, Medline, Toxnet, using as key words "flavor perception", "food color", "food taste", "food smell", "metabolism". **Results:** Data from medical literature demonstrate that the central nervous system has an essential role in assimilating the sensory interactions and in the perception of flavors. Senses have a defining role in food preference, human species tending to associate the smell, taste and color with previous culinary experiences, creating food patterns in food consumption. Also, food flavor is important in the absorption and metabolism of nutrients, involving the brain, the oropharyngeal region and the parasympathetic nervous system, releasing saliva, gastric acid, pancreatic enzymes and hormones. **Conclusions:** Color, smell and taste create expectations in consumer, depending on previous experiences, the perceived flavor being able to influence the physiological phenomenon of absorption and metabolism of nutrients in human organism.

Keywords: flavor perception, food smell, food taste, metabolism

THE EFFECT OF ARBUSCULAR MYCORRHIZAL FUNGI ON THE ARTEMISIA ANNUA MEDICINAL PLANT UNDER DIFFERENT SOIL TYPE CONDITIONS

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Background: *Artemisia annua* (Asteraceae) is an annual herb used for centuries as traditional Chinese medicine for cerebral fever. Since the discovery of artemisinin, the plant has been used in medicine for its cytotoxic and inhibitory effect. Arbuscular mycorrhizae can be used to increase the concentration of artemisinin, essential oil and guaiacol peroxidase in plant as well as plant biomass, growth, phosphatase activity, nutrient status and leaf chlorophyll content. **Objective:** The aim of this study was to investigate the effect of arbuscular mycorrhizae on biomass, glandular trichome density and artemisinin content in case of *Artemisia annua* plants cultivated on different soil types. **Material and methods:** *Artemisia annua* seeds were germinated on coconut fiber peat disks. The seedlings were transplanted in pots with three different soil types (Gleysol, Luvisol, Anthrosol) and sterile peat. Half of the plants were inoculated with *Glomus intraradices* and *G. mosseae* spores. The plants were moved outside in May and were separated into 16 blocks (20 plant/block) using a double nested block design. The fresh and dry weight of root, leaf and stem were measured periodically. Scanning electron microscope was used to evaluate glandular trichome density of the leaf. Artemisinin concentrations were determined by HPLC analysis. **Results:** Overall, treated plants presented a significantly higher fresh biomass in case of root and stem only in August, while leaf fresh biomass remained higher (with 25.98%) also in September. Significant differences in biomasses were found in case of Luvisol in August and Anthrosol in September. Dry biomasses presented the same trends. Glandular trichome density increased in treated plants with 25.63% on soil, and 33.30% on sterile peats. Inoculated plants had a significantly higher artemisinin concentration than control plants. **Conclusions:** The treatment was not effective in all of the applied soil types. Significant improvements on pharmaceutically important properties of the plants were observed in case of Luvisol and Anthrosol.

Keywords: *Artemisia annua*, artemisinin, arbuscular mycorrhiza, glandular trichome density



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THE EFFECT OF ARBUSCULAR MYCORRHIZAL FUNGI ON THE ARTEMISIA ANNUA MEDICINAL
PLANT UNDER DIFFERENT SOIL TYPE CONDITIONS

at the International Congress for Students, Young Physicians
and Pharmacists

“MARISIENSIS”

27th March - 31st March 2019
23rd edition

University of Medicine, Pharmacy,
Science and Technology of
TÂRGU MUREȘ
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