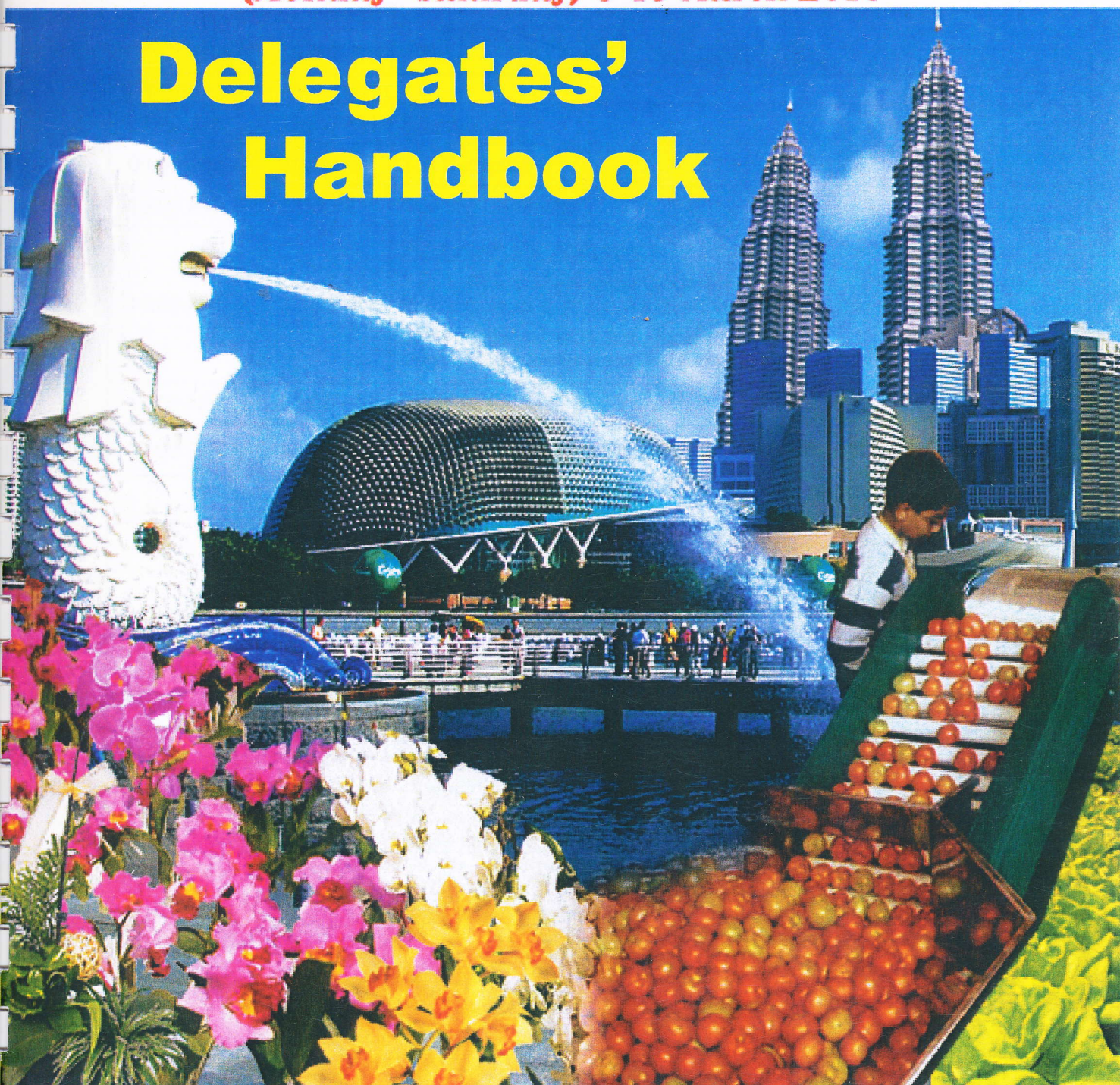


International Conference & Exhibition on Soilless Culture

Suntec Singapore International Convention & Exhibition Centre, Singapore

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Conference Program & Abstracts of Papers Submitted

PAL – 019

Fresh yield and Essential Oil yield of *Mentha x piperita* L. in Open Field Soilless Culture and Conventional Condition

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Abstract

In medicinal plants increasing both essential oil yield and herbs yield are important. For this purpose open field soilless culture can be used. In this method soilless culture and conventional culture advantages combined together to increase yields, especially in medicinal plants. In this research two systems: Trench culture and Bag culture designed.

These systems were different in sun light exposure. The treatments were three media included: coco peat 100%, perlite 100% and perlite-cocopeat 50-50 V/V used in each system. After system setting up, nutrient solution used for each plant equally. In conventional culture manure mixed with the soil before planting. Statistical design was split plot in randomized complete block design.

The main plot was systems (in two levels) and subplot was media (in three levels). Each treatments had 3 replicate. Generally in most growth factors, coco peat media had most values. Because of inability of Perlite media for water and nutrient adsorbing between irrigations, caused the plants growth limited.

Therefore, most growth factors in both were lowest in perlite. Water use per plants in conventional culture was 18.6 times more than soilless culture. Essential oil yield in conventional culture for growth limitation was lower than all media in soilless culture systems.

Key words: Open Field Soilless-culture, Media, Peppermint, Conventional Culture

Conference Program & Abstracts of Papers Submitted

PAL – 020

Comparison of Roots and Essential Oil Yield of Valerian Under Field and Hydroponic Conditions

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Abstract

During the last few years, the use of medicinal plants as an alternative to traditional medicine has soared considerably. The demand for some plant species largely exceeds the offer and supply for good quality products can be a serious problem.

Soil-less greenhouse cultivation of medicinal plants would thus allow growers to market very high quality products, year around, in a pesticide free environment. Valerian (*Valeriana officinalis*) plants were grown in Investigative Greenhouse and Field of Ferdowsi University of Mashhad in IRAN (59 N latitude), and evaluated for their response to the field and soilless culture conditions.

The main objectives of this study were to evaluate the potential growth of *Valeriana officinalis* using a NFT growing system and evaluate their profitability. The results showed that valerian studied was well adapted to the NFT system. After 50-120 days , root dry weight of *Valeriana officinalis*, was 4.4 times higher, in the NFT system compared to field growing plants.

Also, the shoot dry weight of hydroponic growing plants were 15.2 times higher than field-grown plants. Essential oil yield were 0.57% and 0.48% in NFT and field conditions , respectively.

Keywords Valerian, Essential Oil, Root Yield, Hydroponic

Conference Program & Abstracts of Papers Submitted

PAL – 021

Effects of Different Media on Valeriana officinalis L. Root and Essential Oil Yield Under Open Field Soilless Culture Conditions

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Abstract

In medicinal plants increasing both essential oil yield and herbs yield are important. In this study effects of different media were tested for valerian.

The treatments were applied included cocpeat 75: perlite 25, coco peat 25: perlite 75 and coco peat 50: perlite 50. Each treatments had three replicate Statistical design was Factorial in completely randomized.

The characteristics that measured were growth factors, root and essential oil yield and relation between essential oil with some of characteristics.

The results indicated that the highest roots and essential oil yields were in coco peat 75 : perlite 25 ratio.

Key words: Open Field, Soilless-Culture, Valerian, Media, Soilless Culture