

## 2<sup>nd</sup> International Conference on **Agricultural & Horticultural Sciences**

Radisson Blu Plaza Hotel, Hyderabad, India February 03-05, 2014

### **Molecular characterization of phytoplasma associated with proliferation and virescence disease of periwinkle (*Catharanthus roseus*) in India**

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Periwinkle (*Catharanthus roseus*) is important ornamental and medicinal plant of India. The plants flower is of great importance to Indian system of medicine and pharmaceutical industries. During December 2007, phytoplasma infected sample was received from Karnataka (India). Typical diseases include phyllody, little leaf, dense clusters of highly proliferating branches with shortened internodes. Plant samples were collected and stored at -80°C. Symptomatic leaf midrib were used for extraction of DNA using DNeasy Plant Mini kit (Qiagen, GmbH, Hilden, Germany) and Healthy leaf midrib also used for DNA extraction. Polymerase chain reaction (PCR) was performed using universal primer P1 and P7, for amplification of 16s, 16/23s intergenic spacer of phytoplasma spp. An amplicon of approximately 1800 bp was obtained. The size of the PCR product is similar to that amplified from *candidatus* phytoplasma. However, no amplification was found in healthy samples. The PCR product was purified PCR purification kit and the PCR purified product was sequenced and sequence was BLAST, in NCBI. Sequence analysis showed that the phytoplasma associated with the phyllody disease on periwinkle occurring in India, confirmed the presence of a phytoplasma belonging to aster yellow 16SrI group of phytoplasma. The presence of phytoplasma disease poses a new threat to the Periwinkle in Karnataka.

#### **Biography**

Kailash N. Gupta has completed his Ph.D. at the age of 35 years from JMI, A Central University, New Delhi. He is the Assistant Professor cum Scientist of Plant Pathology in Jawaharlal Nehru Krishi Vishwa Vidyalyaya, India. He has published more than 20 papers in reputed national and international journals and 25 abstracts, 10 technical bulletin and 25 popular articles.

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### **A synergy approach combining *in situ* measurements, modeling and remote sensing data for estimating crop water requirements in the semi-arid region of Tensift Al Haouz, Morocco**

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Regions classified as semi-arid or arid constitute roughly one third of the total global land cover. In these regions, water consumption has significantly increased over the last decades, while available water resources are becoming increasingly scarce. Water scarcity is one of the main factors limiting agricultural development and yield. The impact of such water scarcity is amplified by inefficient irrigation practices, especially since the irrigation consumes more than 85% of the available water in these regions. Therefore, the first step toward sound management of the scarce water resources in these regions requires an accurate estimation of the water needs and consumption of irrigated agriculture. The crop water need is defined as the amount of water needed to meet the amount of water lost to the atmosphere through evapotranspiration.

Over the last decades, several techniques and models have been developed for measuring and estimating crop evapotranspiration (ET). However, these methods estimate ET only at local scale. For regional application, satellite remote sensing data have been widely used to initialize, to force or to control hydrological model simulations and so to estimate spatial ET.

This work, which is part of the activities of the SudMed program and the International Joint Laboratory TREMA, aims to estimate ET by using a synergy approach combining *in situ* measurements, modeling and remote sensing data. Current applications of this approach in the semi-arid region of Tensift Al Haouz (center of Morocco) have been presented.

#### **Biography**

Salah Er-Raki holds a Ph.D. in agricultural water management from the Cadi Ayyad University. He was actually Assistant Professor at the Faculty of Sciences and Techniques, Cadi Ayyad University. His main research interests include the application of remotely sensed data in land-surface atmosphere models especially in arid semi-arid regions. He worked in several Funded European research projects (SUDMED, WATERMED, IRRIMED, Pleiades). He is an author and co-author of more than 35 peer review publications and more than 100 papers in conferences and workshops. He also serves as an editorial board member and reviewer of several international scientific journals.

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