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### **Estimation of free proline in the leaf, stem, root and breathing roots of *Avicennia marina* (mangrove) and its medicinal uses**

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Mangrove plants represented by *Avicennia marina* in UAE grow in range of substrate soils; organics, sandy, hard substrates and are exposed to high temperatures up to 50°C. Plants under abiotic stress accumulate proline in their tissues; estimation of free proline is a useful assay to monitor the stress tolerance in such plants. The aim of the present work is to estimate free proline in stem, leaf, root and breathing root of *Avicennia marina* and also to detect proline synthetase gene (delta Pyrroline-5-carboxylate synthetase P5CS) responsible for proline synthesis. The estimated proline levels among the different frozen tissues in the mangrove ranged from 15 to 18 µmol/g, with roots containing the maximum. Free proline levels were also estimated in three cultivars of pearl millet (*Pennisetum glaucum*), which were stressed against similar environmental conditions and salinity up to 150 mM. The evaluation of proline levels in the leaves of salt stressed cultivars ranged 1.3 and 2.5 µmol/g which is much lesser than their respective controls and the mangrove tissues. Large scale extraction of proline from mangrove leaves for commercial purposes may be interesting. The medicinal importance of proline rich mangrove leaves as a folklore medicine is discussed.

#### **Biography**

T V Rajya Lakshmi completed her PhD Degree from Andhra University and Post-doctorate from Indian Institute of Sciences, India. She has worked in different institutes- Andhra University, Indian Institute of sciences, Directorate of Rice Research, India and Shalimar Biotech Industries, Dubai. She is working as Assistant Professor in University of Modern Sciences, Dubai. She has published 15 research papers in international and national journals and 20 research papers in international symposia and conferences.

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