

**CHARACTERIZATION OF MOLECULAR DIVERSITY AND
PHYSIOLOGICAL PROPERTIES OF RHIZOBIAL POPULATIONS IN
*Crotalaria juncea***

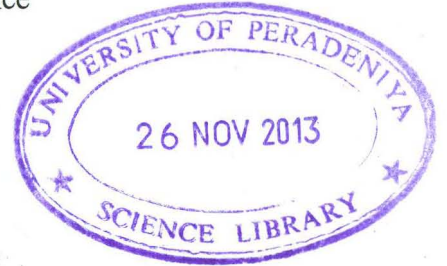
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Crotalaria juncea is a legume plant which is grown as a cover crop in Sri Lanka. This plant provides high quality food for cattle and goat and grows well under the harsh edaphic and climatic conditions of Sri Lanka. This study was conducted mainly to investigate the molecular diversity of rhizobial population nodulating *Crotalaria juncea* in different agro-ecological regions of Sri Lanka. The secondary objective of this study was to determine the pH, salinity, and temperature and drought tolerance level of rhizobial populations.

Thirty seven isolates were obtained from nodules on *Crotalaria juncea* growing in the field of Nelliady, Vaddukoddai, Kaddudai, Paranthan, Ranamadu, Trincomalee, Angunakolapalessa, Bathalagoda and Peradeniya. DNA fingerprinting with ERIC primers revealed that banding pattern of thirty seven isolates were genetically different from each other.

Physiological experiments to test the tolerance level of these 37 isolates for pH, salinity, temperature and drought revealed that most of the isolates showed tolerance to these adverse conditions. And some of the isolates did not show any growth for some conditions. The five elite strains were identified. They are KdN5P, PaN5P, PaN2P, VN5P and AN5P. But they genetically differ from each other. These five isolates belong to the Dry zone regions.

The results of physiological conditions and DNA fingerprinting with ERIC primers did not show any correlation with each other. Therefore, all 37 isolates are different from each other and have to be considered as different strains.