Relative stress Protein Profile of Wild edible legumes Using Sodium Dodecyl Sulfate-Polyacrylamide Gel Electrophoresis (SDS-PAGE) under salinity stress

Kavitha J. and *Mary Sujin R.

*Research Department of Botany, Pasumpon Thiru Muthuramalinga Thevar Memorial College (Affliated to Alagappa University), Kamuthi, Ramnad District-623 604, Tamilnadu, India

*Corresponding author: e-mail: sujiphd@gmail.com

Abstract

Leguminosae is one of the largest families of flowering plants that are rich in proteins, oils, and nutrients. In Ramanathapuram wild edible legumes particularly *Vigna* genus are the most promising genus which are grown in salinity soils influenced by excess salinity stress. In an attempt to understand the molecular basis of stress relative protein component of the six *vigna* species under salinity stress using SDS-PAGE. The six different *Vigna* species were collected and grown in pots exposed to 25 ppm, 50 ppm and 100 ppm of sodium bicarbonate ($NaHCO_3$) salt and extracted protein from leaf samples which were run in SDS-Polyacrylamide Gel Electrophoresis. Results showed that the relative stress proteins were expressed in specific regions of *Vigna* leaf samples adapted to salt stress. In *Vigna indica* there were 76 bands totally observed on 25 ppm, 65 bands in 50 ppm and 50 bands in 100 ppm concentration of salt stress compared to control which had 84 protein bands ranging from 217.6 to 367.20 KD with additional minor bands indicating a higher protein content. The rate of protein biosynthesis shows a general decline during salt stress conditions. Based on the study results SDS-PAGE can help to identify and selecting salt-tolerant varieties through the detection of specific stress-responsive proteins.

Keywords: *Vigna* species, Salt stress, Relative protein profile, SDS-PAGE