



Role of Proteomics in Mitigating Biotic and Abiotic Stresses of Crop Plants

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Abstract

Proteomics is investigation of protein in a genome comprehensive manner. In the extensive ground of functional OMICS, proteomics has turned to be an advantageous technique. The accomplishment of various genome sequencing projects, besides the advancement of protein characterization approaches rushes this technique accelerative. Currently, proteomics use has been stretched to know the diverse protein's properties comprising the actions, structures, and protein-protein interfaces. Thus, it is important to recognize the functions of proteins in growth of the plant and in counter to biotic and abiotic stresses. In this article, we have focused the role of plant proteomics studies to mitigate the varied stresses in agricultural crops.

Keywords: Proteome, Transcription, Omics, ROS, QTL, *Bradyrhizobium*

Proteomics are certainly developing and intensifying area of learning which deals with the comprehensive and systematic study of the protein community in the cell (Sarkar *et al.* 2014). Term "proteome" is derivative of protein, which is expressed by a gene. Post-translational modifications (PTMs) provides the information significant to know the biological phenomenon. Post-translational modifications perform a chief part in plants growth and development against different stress circumstances which cannot be explored via genome sequence or transcript only (Eldakak *et al.* 2013). It includes functional proteomics, structural proteomics of any organism and comparative proteomics of different phenomenon (Katam *et al.* 2015). In the last decade use of proteomics has enhanced for exploring agricultural crops. In spite of need of laboratories for

proteomics techniques, there is a huge opportunity for its expansion. Particularly, portion of plant proteome distinguished utilizing current tactics is noticeably lesser compared to other "Omics" techniques and thus providing an incomplete illustration of the cellular proteins. For protein separation mostly study is carried out using two-dimensional electrophoresis gel technique where modification and degradation of proteins could be quickly envisioned. But nowadays protein analysis is grounded on the use of liquid chromatography are increasing in varied workrooms as it requires less quantities of initial material compare to another technique. But its application in agriculture

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