

Identification of Salt Responsive Proteins in Rice Leaf Sheath (*Oryza sativa* L.) with Nanoliquid Chromatography-Tandem Mass Spectrometry

Authors : Kanlaya Kong-Ngern, Chutima Homwonk, Sittiruk Roytrakul

Abstract : In this research, we compared the proteomic profile of two rice leaf sheaths under salt stress, Thai moderately salt tolerant rice (Leaung Anan), and high salt tolerant rice (Pokkali). Seeds were grown in hydroponic culture for 21 days before NaCl was introduced initially at the level of 12 dS m⁻¹ for 10 days. Then the leaf sheath proteomes were analyzed by 1D-SDS-PAGE and NanoLC-MS/MS. In this study, 873 proteins were detected. Among these proteins, 219 proteins were known proteins and the other proteins were unnamed and unknown proteins. By using Mev software, we found that only 31 proteins in treated plants of both rice cultivars significantly expressed, 21 proteins were up-regulated and 10 proteins were down-regulated. Interestingly, the intensity of the 3 proteins in the Leaung Anan more expressed than in the Pokkali. The results indicate that the up-regulated proteins were more expressed in less tolerant rice may play an important role in helping rice to survive under salt stress.

Keywords : mass spectrometry, proteomics, rice leaf sheaths, salt stress

Conference Title : ICACC 2020 : International Conference on Agriculture and Climate Change

Conference Location : London, United Kingdom

Conference Dates : June 29-30, 2020