conferenceseries.com SciTechnol

Fakhriya M Kareem, J Plant Physiol Pathol 2017, 5:5
DOI: 10.4172/2329-955X-C1-012

3rd Global Summit on

Plant Science

August 07-09, 2017 | Rome, Italy

The effect of exogenous applications of salicylic acid at different growth stages to Iraqi wheat cv. Tamooz 2 on the up-regulation of the drought response regulon

Fakhriya M Kareem
Plymouth University, UK

Drought has been reported to be the main environmental stress factor limiting plant growth and crop productivity worldwide due to its adverse effects on the photosynthetic process and the development of harvestable components. The extent of negative effects of drought stress on plants results from many factors including the species and cultivar, the severity of the stress and the stage of plant development at which stress occurs. Salicylic acid (SA) has become recognised as an important signaling molecule in regulating metabolic and physiological mechanisms stimulating growth parameters and bio-productivity especially in plants that are exposed to abiotic stress. *DREB/CBF* is the most important group of the several families of transcription factors that are known to be induced by environmental constraints such as drought leading to the upregulation of drought protective compounds. Accordingly, the present study was conducted to assess the effect of applying SA (1.44 mM) at three different growth stages of Iraqi wheat (*Triticum aestivum* L.) cv Tamooz 2 under well-watered and drought conditions and monitoring the effect on drought tolerance and the up-regulation of *CBF/DREB* gene. The experimental design was a completely randomised block (RCBD) with sixteen treatments (2 watering x 8 SA spray treatments) in each of four replicate blocks. The results of this study indicate that SA treatments at both stem+flower as well as leaf+stem+flower significantly improved wheat plants exposed to drought stress conditions leading to increases in shoot dry weight and yield components (number of spikes/pot, grain dry weight and average 1000 grain dry weight). Also spraying the plants with SA had a positive effect on the up-regulation of *CBF/DREB* during stem extension and flowering in stressed plants.

Biography

Fakhriya M Kareem completed her BSc study in Biology from University of Salahaddin, Erbil, Iraq (2003-2004). She worked as Assistant Teacher for Biology students in the same university. She pursued her MSc degree during the year 2009-2010. She taught biology students the subject of Plant Sciences including Theoretical Botany, both theoretical and practical Plant Anatomy, as Assistant Lecturer in Iraq, Kurdistan, Soran University, College of Science from 2010-2012. Her research work entitled, "Effect of Salicylic Acid on Some Biomass and Biochemical Changes of Drought-Stressed Wheat (*Triticum aestivum* L. Var. Cham 6) Seedlings" was accepted by Duhok University Journal for publishing in Iraq/Kurdistan. Her subject of specialization is Plant Physiology of Wheat Plants. She is interested in researching Crop Stresses and Plant Molecular Biology.

Fakhriya.kareem@plymouth.ac.uk
fakhriyaalbarznjy@gmail.com

Notes: