

# 3<sup>rd</sup> International Summit on **Toxicology & Applied Pharmacology**

October 20-22, 2014 DoubleTree by Hilton Hotel Chicago-North Shore, USA



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### How plants cope with abiotic stress

Life of plants can be affected by abiotic stress, resulting from nonliving factors, such as extreme temperatures, drought, salinity and pollutants. Plants have to cope with the detrimental effects of these stresses that impact upon their reproduction and productivity, and, hence, agriculture and biodiversity.

In plant kingdom a commonly accepted stress concept is provided by the biomedical sciences and it is the 'General Adaptation Syndrome' (GAS) of the endocrinologist Hans Selye (1936). When a threat or stressor is identified or realized, a state of 'alarm' is created which elicits a rapid and appropriate response, that represents the key to survival for the organism. However, a plant's response to stress will vary according to increasing duration and severity of stress. The balance between tolerance and sensitivity may determine whether a stress factor has a positive or negative effect. The 'building blocks' of the species tolerance are: protection, repair, acclimation and adaptation. They are depending on the complex molecular response mainly based on the modulation of transcriptional activity of stress-related genes. Mechanisms involved in plant stress response will be considered and discussed together with possible biotechnological applications.

### Biography

Cinzia Forni is Professor of Botany and Group Leader of the Laboratory of Botany and Phytotechnologies of the Department of Biology at the University of Rome Tor Vergata. Her expertise is dealing with effects of abiotic and biotic stresses in plants and secondary metabolites production. She has published 63 papers in reputed journals and serving as referee in different journals. Current research projects are: a) phytoremediation; b) study on salt tolerant species; c) study on the production of flavonoids in crops and determination of their antitumor activity d) germplasm preservation.

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