"NO way"! Says the plant to abiotic stress

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"NO way"! Says the plant to abiotic stress

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Abstract:

Nitric oxide (NO), a small sized, short lived, highly diffusible natured, gaseous, diatomic and bioactive molecule, has now gained an important position in plant science research, due to its multifunctional roles in physiological as well as pathological responses in plants. A detailed understanding of the molecular mechanisms of plants against various stresses revealed that production of NO and other reactive oxygen species (ROS) are known to interplay an essential role to counter those challenges. NO can directly or indirectly help in the modulation of different protein functions and the reprogramming of defense gene expression by interacting with certain targets. NO might act as a signal in activating ROS-scavenging enzyme activities under various abiotic stresses including drought, salinity, temperature, heavy metal and radiations stress. Furthermore, application of NO donor has tremendous potential to counteract damages in different segments of plants caused by various stresses. This review aims to discuss the overall role of NO in higher plants in response to abiotic stresses.

Key words: abiotic stress, nitric oxide, reactive oxygen species