

REACTIVE OXYGEN SPECIES IN PLANTS – FAR MORE THAN JUST A POISON

Summary

Reactive oxygen species (ROS) play a number of important roles in plants, not only as a toxic byproducts of oxygen metabolism, but also as regulators of development and stress responses. In the present review, types of ROS, their chemical reactivity, sites of their generation and detoxification in plant cells are described. Recently, signaling function of ROS has been intensively examined. It was shown, that ROS participate in the regulation of responses to various types of abiotic stress, like high light, high or low temperature or salt stress. Moreover, ROS

are important in response to pathogen attack, acting as signaling molecules, but also as toxic agents to pathogens. It is also known, that ROS participate in the regulation of development processes, such as growth of roots, leaves and pollen tubes. Molecular mechanism of ROS action is still poorly known. Up to date, some elements of signaling cascades were identified, like kinases, phosphatases and transcription factors. In this paper, signaling functions of ROS been described in the light of recent literature data.