

NITRIC OXIDE IS A VERSATILE SIGNAL MOLECULE THAT POSSESSES MULTIPLE TARGETS IN PLANTS.

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Nitric Oxide (NO) is an intra- and intercellular signal molecule that acts in the regulation of growth, developmental and stress physiology processes in plants (Lamattina et al, 2003). Because of its lipophilic nature, small size and uncharged chemical structure NO can diffuse rapidly across biological membranes. NO is a free radical that reacts with almost every biological target. Thus, the mobility and reactivity of NO distinguish it as a potent signal molecule in biological systems probably synchronizing multiple metabolic responses to endogenous and exogenous stimuli. In plants, NO has been demonstrated to be an active component in the signaling cascades that mediate hormone-regulated physiological processes as stomatal closure (Garcia-Mata and Lamattina 2003, 2007); root growth and development (Pagnussat et al, 2004; Correa-Aragunde et al. 2006; Lombardo et al 2006) and root responses to iron deficiency (Graziano and Lamattina, 2005, 2007). In this presentation, it will be described the role of the intermediate molecules cyclic GMP, calcium, MAPKs, phospholipids, as well others, that are required for NO functions in some auxin- and ABA-regulated processes in plants.