Gibberellins-a multifaceted hormone in plant growth regulatory network

ABSTRACT

Plants tend to acclimatize to unfavourable environs by integrating growth and development to environmentally activated signals. Phytohormones strongly regulate convergent developmental and stress adaptive procedures and synchronize cellular reaction to the exogenous and endogenous conditions within the adaptive signaling networks. Gibberellins (GA), a group of tetracyclic diterpenoids, being vital regulators of plant growth, are accountable for regulating several aspects of growth and development of higher plants. If the element of reproduction is considered as an absolute requisite then for a majority of the higher plants GA signaling is simply indispensable. Latest reports have revealed unique conflicting roles of GA and other phytohormones in amalgamating growth and development in plants through environmental signaling. Numerous physiological researches have detailed substantial crosstalk between GA and other hormones like abscisic acid, auxin, cytokinin, and jasmonic acid. In this review, a number of explanations and clarifications for this discrepancy are explored based on the crosstalk among GA and other phytohormones.

Keyword: Abiotic stress; Biosynthesis; Biotic stress; Crosstalk; DELLA; Plant development; Signaling pathway