

# Effect of 2-Benzoxazolinone (BOA) on Seedling Growth and Associated Biochemical Changes in Mung Bean (*Phaseolus aureus*)

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BOA (2-benzoxazolinone) is a potent phytotoxin present in several graminaceous crops such as rye, maize and wheat. Due to its wide range of phytotoxicity, it is considered as a potential pesticide. A study was conducted to explore the impact of BOA on the radicle and plumule elongation of mung bean (*Phaseolus aureus*) and associated changes in the macromolecular content – proteins and carbohydrates – and activities of enzymes like amylases, proteases, polyphenol oxidases and peroxidases. BOA significantly reduced the radicle and plumule length of *P. aureus*, and the contents of proteins and carbohydrates in both root and leaf tissue. On the other hand, activities of hydrolytic enzymes – proteases, amylases, polyphenol oxidases and peroxidases – increased substantially in both root and leaf tissue of *P. aureus* upon BOA exposure. This indicated that BOA treatment induced stress in *P. aureus* and enhanced enzyme activities to counter the induced stress and continue the growth. In other words, BOA-induced stress altered the plant biochemical status and related enzyme activities resulting in increased metabolism that serves to provide protection against cellular injury. Such studies providing information about the biomolecular content and enzymatic activities in response to natural products serve as clues for furtherance of knowledge about the modes of action of natural compounds of commercial interest.

**Key words:** Radicle Growth, Protein and Carbohydrate Content, Enzyme Activities