

# EFFECTS OF HEAVY METAL (Cd) STRESS ON ENZYME ACTIVITY OF *VIGNA RADIATA* L. SEEDLINGS

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**Abstract:** An experiment was conducted to see the impacts of heavy metal stress as it is main cause in soil and water disorders in agricultural field crops, specially *Vigna radiata* L. cv. MH98-6 on enzyme activity and yield attributes. Surface sterilized seeds of *Vigna radiata* L. cv. MH98-6 L. were exposed to various concentrations of cadmium chloride solution ( $10^{-2}$  M,  $10^{-4}$  M,  $10^{-5}$  M,  $10^{-8}$  M and control) at room temperature and these seeds were transferred to petriplates and polythene bags in triplicate. Increase in heavy metal stress ( $10^{-2}$  M) conc. was found to have deleterious effects on pollen growth, plant height, phytomass, number of branches, leaf area, chlorophyll contents and yield attributes while  $10^{-8}$  M revealed slightly promotory effects. Nitrate and nitrite reductase activity was markedly inhibited at higher conc. and same trend was observed in amylase activity. Low dose of cadmium ( $10^{-8}$  M) did not affect soluble sugar contents of seeds but it induced a significant increase at higher conc ( $10^{-2}$  M). It however, did not affect protein contents of seeds, catalase (CAT) and peroxidase(POD) activity of 15 days old seedlings except at higher concentration.

**Keywords:** *Vigna radiata*, Cadmium, enzyme activity, sugar, yield attributes

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