## Screening of Nickel-Tolerant Genotype of Mung Bean (Vigna radiata) Based on Photosynthesis and Antioxidant System

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**Abstract :** The main aim of this study was to explore the different cultivars of Vigna radiata on basis of photosynthesis, antioxidants and proline to assess Ni-sensitive and Ni-tolerant cultivar. Seeds of five different cultivars were sown in soil amended with different levels of Ni (0, 50, 100, or 150 mg kg 1). At 30 d stage, plants were harvested to assess the various parameters. The Ni treatment diminished growth, leaf water potential, chlorophyll content and net photosynthesis along with nitrate reductase and carbonic anhydrase activities in the concentration dependent manner whereas, it enhanced proline content and various antioxidant enzymes. The varieties T-44 found least affected, whereas PDM-139 experienced maximum damage at 150 mg kg-1 of Ni. Moreover, T-44 possessed maximum activity of antioxidant enzymes and proline content at all the levels of metal whereas PDM-139 possessed minimum values. Therefore, T-44 and PDM-139 were established as the most resistant and sensitive varieties, respectively.

1

Keywords : Vigna radiata, antioxidants, nickel, photosynthesis, proline

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