



Role of Dipotassium phosphate on the physiology and metabolism of Black gram seeds treated with Arsenic

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Abstract : Role of di potassium phosphate and Effect of different concentration of Sodium Arsenate ($0\mu\text{m}$, $100\mu\text{m}$, $200\mu\text{m}$) on seed germination percentage, chlorophyll a, chlorophyll b length of root and shoot, protein, and Electrolyte Leakage Percentage in *Vigna mungo* were investigated in order to elucidate the toxicity of Arsenic in development stage. In present study, response of black gram (*Vigna mungo*) to arsenic with or without phosphate application was investigated with increase in Arsenic concentration at $200\mu\text{m}$, the germination % on 7th day was recorded as 30.4%. Decrease in pigment content at highest concentration of Arsenic was observed at 30th day using UV-VIS spectrophotometer, at $200\mu\text{m}$ concentration of Arsenic chlorophyll was recorded 0. Length of root and shoot decrease was recorded as 0cm. Assessment of protein content decrease at $200\mu\text{m}$. ELP was recorded as 14.24 in $100\mu\text{m}$. The physiological and metabolic

effect on seed of test sample compared with control of higher Arsenic concentration in soil. However, application of Dipotassium phosphate resulted in significant alteration in most parameters tested under preview of arsenic treatment alone which lead to better growth in black gram.

Keywords: UV-VIS spectrophotometer, Sodium Arsenate, Conductivity meter, Dipotassium phosphate, Black gram seeds, Seed germination.

Introduction :

Arsenic (As) is a toxic metalloid, (Rathinasabpathi et al., 2006) present in environment. Toxic effect of Arsenic sudden change the physiology and metabolism of plant (Asati et al., 2016). Present of Arsenic in irrigation water or in soft at high level obstruct normal growth in *Vigna mungo*. High Arsenic dose reduces length of root and shoot, germination % (Pandey and Bhatt 2016). Miteva and Merakchiyska (2005) have reported that high concentration of Arsenic decrease chlorophyll content affects plant photosynthesis rate. In the present research work, three concentration $0\mu\text{m}$, $100\mu\text{m}$, and $200\mu\text{m}$ Arsenic affect the morphological character, chlorophyll content, protein content and Electrolyte Leakage

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