International Journal of Biotechnology and Biomedical Sciences
p-ISSN 2454-4582, e-ISSN 2454-7808, Volume 5, Issue 2; July-December, 2019 pp. 118-118

http://www.krishisanskriti.org/Publication.html

Effect of different Priming Treatments of *Prosopis Cinereria* Aqueous Extract on Germination and Physical Parameters of Wheat Seedling in Salt Stress

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Abstract*—Priming is a valuable, facile and well established technique used to enhance seed quality to achieve rapid germination, establishment of stress resistance and improvement of crop yields. It also induces pre-germinative metabolism to various level in seeds depending upon their species, physiology and morphology. These specific metabolic changes results in: Trigger ATP production, de novo synthesis of proteins and nucleic acids, activation of antioxidant enzymes and DNA repair, accumulation of phospholipids and sterols. The activation of these cellular mechanisms protect genome integrity, ensure rapid germination with fast seedling emergence thus help to provide high crop yields. Different natural and synthetic priming agents have been used for better crop performance and abiotic stress management. Chemical priming induces significant tolerance against a wide range of abiotic stresses. Priming of different crops with ascorbic acid, H_2O_2, kinetin etc. have been reported to improve: aforementioned germination, seedling growth, non-enzymatic and enzymatic antioxidants leading to high grain yield.*

Prosopis cineraria, extensively planted as fast growing and drought tolerant fuel and fodder tree but in a large number of countries it spreads readily without control as invasive weed. It is commonly found in dry condition, sandy plains and found abundantly in habitat like wasteland, cultivated land and surrounding plain of hills was chosen for this study. Aqueous extract of leaf of Prosopis cineraria, four in different concentrations (1 % PE, 3% PE, 5% PE, 10% PE, along with Control), seeds were soaked differently in distilled water (Hydro priming), were tested on wheat seedlings. Physical parameters like root length, shoot length, wet weight and dry weight of wheat seedling were measured and found to have growth stimulating effect on wheat seedlings.(In leaf extract 3% and 10% shows maximum positive stimulatory effects than all other concentrations compared to control.) (3%>10%) Our study suggests that, seed priming with weed aqueous extract in the presence of abiotic (salt) stress, stimulate growth of wheat seedlings. Thus, it can be concluded that effect of weed plant extract has stimulatory effect on Wheat crops at concentration studied.

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Keywords: *priming, weed, aqueous extract, wheat seedling, salt stress.*