

Effect of nanopriming for enhancing germination and seedling growth of *Dorema aucheri* L.

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Abstract:

Application of nanomaterials for agriculture is relatively new as compared to their use in biomedical and industrial sectors. Among different nanoparticles (NPs), inorganic NPs of metals like Ag, Au, Ce, Fe, Se, Ti and Zn possess a significant place owing to their unique bioactivities in nanoforms. Selenium has a toxicity margins are very delicate whereas the nanoparticles of Se (SeNPs) contain remarkably reduced toxicity. The aim of this study was to determine the effects of SeNPs on the germination and seedling growth of *Dorema aucheri* plant at 4 °C. The experimental was a completely randomized design with five SeNPs concentrations (0, 2, 5, 10, and 30 mg L⁻¹). Use of SeNPs at low concentration showed a positive effect on two different parameters (root growth and germination index) however seeds exposed to 30 mg.L⁻¹ of nanoSe showed a decrease of 20% of seed germination index compared to the control treatment. It was concluded that Priming with selenium nanoparticles influence of seed nitrogen (N) content on seedling growth, which affect hypocotyl elongation and N aslo is a component of many essential compounds, including acids, proteins and nucleic acids, and plays an important role in the formation of protoplasm and new cells. So it causes an increase in root length therefore this treatment can have a significant effect on drought and salinity stress.

Biography

Elham Abedi has studied in plant physiology. She received her B.S. and M.S. degrees in plant physiology from the Department of basic science, Isfahan University, and Science and Research Branch, Islamic Azad University, Tehran, Iran, respectively. In 2015, she started her Ph.D. in the same department where her thesis is about the

Effect of different concentrations of Nanoparticles on germination, physiological and biochemical parameters of *Dorema ammoniacum* D. Don. She has worked in evaluation of some physiological parameters in several poaceae family plants under in vitro stresses, such as heavy metal and salt. Now she has focused on selenium supplement on endemic species plants.

Speaker Publications:

“Effect of nanopriming for enhancing germination and seedling growth of *Dorema aucheri* L.”

“Effect of lead and zinc on germination and seedling growth of soybean (*Glycine max* L.)”

“Cadmium stress in rice plants: The effect of cadmium on seed germination and seedling growth of rice plant (*Oriza sativa* L.)”

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