Effect of Nanoparticles of selenium (Nano Se) and Rice Bran Extract on Germination and Some Morphophysiological Characteristics of 

(Astragalus adscendens Boissier)

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Abstract

In order to investigate the effect of seeds priming of Astragalus adscendens with Rice bran extract and potassium nitrate (Nano Se) solution in the early stages of germination, a factorial experiment was conducted in a completely randomized design (CRD) with four replications conducted at the botany Lab of the Department of Biotechnology, University of Kashan, in 2017. Experimental treatments consisted of priming with Rice bran extract solution at 4 levels (zero as control, 0.1, 0.2 and 0.5 (percentage of weight - Volume: w/v)), and Nano-Se in 4 levels (zero as control, 0.04, 0.08 and 0.1) w/v for 2 hours at 25 °C. The results of the experiments showed that Rice bran extract, Nano-Se solution, and interaction of treatments were significant at the 1 % level on all studied traits, including germination percentage, root length, stem length, germination coefficient, relative content of water, chlorophyll a, b and total chlorophyll content. Also, the use of rice bran extract 0.1% increased the 15% of root length but with Increasing the concentrations of bran extract root and shoot length decreased compared to control. Also, seeds priming with rice bran extract 0.2% and Nano Se 0.8% increased the root length 37%. The highest germination percentage, the content of chlorophyll a and b, and stem length were obtained by applying 0.11% w / v Rice bran extract solution with 0.1% w/v of Nano-Se .Also, applying these treatments alone had positive and significant effects on the studied traits.

Keywords: Chlorophyll, Germination, Priming, Relative water content, Rroot length.