

عنوان مقاله:

Heavy Metals Effects on Brassica Oleracea and Elements Accumulation by Salicylic Acid

محل انتشار:

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خلاصه مقاله:

Background & Aims of the Study: The objective of this study was to investigate the seed pretreatment with salicylic acid (SA) on tolerance and remediation ability of Brassica oleracea var. acephala under lead and zinc stresses. **Materials and Methods:** Present study was conducted to evaluate phyto-accumulative ability of Brassica oleracea var. acephala in heavy metal concentrations. After seed disinfection, the seeds were soaked in the solution of SA (0, 200 and 300 mgL⁻¹) for 6 hours and cultured in media with different concentrations ZnSO₄ and Pb(NO₃) (0, 50, 100 and 200 mgL⁻¹). Some germination indices such as the shoot to root ratio, leaf width, fresh and dry weight, chlorophyll content and absorption of heavy metal by seedling were investigated, after 14 days. **Results:** The results showed that with increasing metal density, almost all of germination indices decreased significantly in comparison with the control. The most heavy metals accumulation was observed in seed pre-treatment with 300 mg L⁻¹ SA and 100 mg L⁻¹ metals treatment. By increasing the concentration of lead and zinc in the medium, the accumulation of metals was increased significantly in the plants. So, in the treatment of 100 mg L⁻¹ of each metal, the accumulation of lead and zinc were 8500.5 and 1085.1 mg kg⁻¹ in dry weight respectively. **Conclusions:** The results show that that ornamental Kale can be used as a hyperaccumulator plant for lead and zinc in polluted regions in this study. The Ornamental kale would be a high biomass crop that can accumulate the contaminant of lead and zinc in the soil

کلمات کلیدی:

Germination indices, Heavy metals, Ornamental Kale, Salicylic acid, Iran

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