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EFFECTS OF DIFFERENT SALT CONCENTRATIONS ON SEED GERMINATION AND SEEDLING GROWTH OF IRANIAN ALFALFA (*MEDICAGO SATIVA* L.) POPULATIONS

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Abstract

Saline soils and water shortage severely limit the productivity of crop and pasturelands in semiarid and arid environments. Hence, the development of cultivars with the ability to germinate under high salt stress would be useful in reclamation of saline soils. In this study the effects of salt on seed germination and seedling growth of five Iranian alfalfa populations namely Gara-Yonjeh, Krisari, Hamadani (temperate regions) and Nikshari and Bami (tropical regions) were studied in antibiotic agar containing 0.0, 0.5,1.0,1.5 and 2.0 % NaCl. Percentage of seed germination, germination rates, fresh and dry weights of the seedlings, length of seedling, shoot and radicle were significantly different between five populations ($p<0.05$). Similarly, significant differences among the NaCl concentrations were observed for the above mentioned characteristics ($p<0.01$). So that by increasing NaCl concentrations, all triats were decreased slowly upto 1% then rapidly. The interactions between the population and NaCl concentrations also were significant ($p<0.01$). This experiment indicated that salt tolerance of various populations were different during germination and seedling growth and the responses of them were different from one NaCl concentration to another. But the critical NaCl concentration for seed germination and seedling growth of all populations was beyond 1%. Krisari population was more stable and tolerant than other populations in different NaCl concentrations. However, within each population salt tolerant seedling were selected with 1% NaCl treatment for additional studies.