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**Degree M.Sc**

**Title of Thesis**

**Influence of Environmental Stress on *Portulaca oleracea* L. in the Natural Habitats.**

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## **Abstract**

In the present study, the response of the medicinal plant namely, *Portulaca oleracea* L. that collected from different soil types (saline, healthy and reclaimed soils) in relation to environmental stress have been evaluated in an attempt to improve their production and maintain their sustainable use. The studied antioxidant enzymes (catalase, peroxidase and superoxide dismutase) in the leaves of *P.oleracea* collected from saline soil exhibited a highly significant increase in comparison to that collected from healthy and reclaimed ones which act as a defensive team to protect cells from oxidative damage and responsible for scavenging ROS. A highly significant increase of the contents of some metabolites namely, total protein, total fatty acids, choline, glycine betaine, free proline and total carbohydrates was exhibited in the leaves of *P.oleracea* collected from saline soil in comparison to healthy and reclaimed ones. Also, the changes that might take place in growth and some related physiological activities of *P. oleracea* L. that collected from different soil types have been studied. Salinization induced a considerable reduction in seed germination of the test plants. A highly significant increase of the contents of antioxidants and metabolites of the studied plants was induced by salinity.