

**P-88 (107)****GLYCINE BETAINE INDUCED CHANGES ON MORPHOLOGICAL TRAITS AND OSMOLYTE COMPOUNDS IN CUCUMBER UNDER SALINITY STRESS**

**Seyyed Moein Moosavi Nezhad**, College of Agriculture & Natural Resources, University of Tehran, Tehran, Iran; [moeinmsv@yahoo.com](mailto:moeinmsv@yahoo.com) (Presenting author)

**ahmad estaji**, Department of Horticultural Sciences, Faculty of Agriculture, Vali-E-Asr University of Rafsanjan, rafsanjan, Iran; [estaji1366@gmail.com](mailto:estaji1366@gmail.com)

**Prof. hamidreza roosta**, Department of Horticultural Sciences, Faculty of Agriculture, Vali-E-Asr University of Rafsanjan, rafsanjan, Iran; [Rosta\\_h@yahoo.com](mailto:Rosta_h@yahoo.com)

In order to evaluate the Glycine betaine (GB) application on dry weight, leaf area and some osmolyte compounds of cucumber plants under salinity stress a greenhouse experiment was conducted based on completely randomized design (CRD) as factorial with two factors of salt stress at three levels (0, 50 and 100 mM of NaCl and glycine betaine at three levels (0, 50 and 100 mM). The results indicated that salinity treatments had significant effects on total dry weight and leaf area, but exogenously applied GB improved these traits under salinity condition. A positive growth response due to foliar application with GB was observed in all cucumber plants. The results also showed that soluble sugar, proline and GB content increased by increasing salinity levels but application of GB led to the higher amount of these traits. Soluble sugar, proline and GB increased in saline treatment in comparison with the control treatment. The plants treated with GB also showed higher content of soluble sugar, proline and GB concentration than control. The highest content of these compounds were observed in plants treated by GB under high level of salinity (100 mM) treatment and the lowest soluble sugar, proline and GB content were recorded in plants grown under control treatment without GB application according to the results of this study it can be concluded that GB application as an organic osmolyte regulator can improve the dry weight, leaf area, osmolyte compounds and tolerance of cucumber plants to the severe conditions

**Keywords:** *Cucumis sativus*, Dry weight, Osmolyte, Leaf area, Salinity.