

P-86 (103)**EFFECT OF GLYCINE BETAINE APPLICATION ON TOTAL CHLOROPHYLL, CAROTENOIDS AND MINERAL NUTRIENTS CONTENT IN CUCUMBER UNDER SALINITY STRESS**

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

Ahmad Estaji, Department of Horticultural Sciences, Faculty of Agriculture, Vali-E-Asr University of Rafsanjan, Iran; estaji1366@gmail.com

Assoc. Prof. Hamidreza Karimi, Department of Horticultural Sciences, Faculty of Agriculture, Vali-E-Asr University of Rafsanjan, Iran; H_karimi109@yahoo.com

Prof. Hamidreza Roosta, Department of Horticultural Sciences, Faculty of Agriculture, Vali-E-Asr University of Rafsanjan, Iran; e

This study was conducted to evaluate the Glycine betaine (GB) application on, photosynthetic pigments content and some mineral element content of cucumber plants under salinity stress. The experiment was performed as a factorial experiment based on completely randomized design (CRD) with salinity stress at three levels (0, 50 and 100 mM of NaCl) and glycine betaine at three levels (0, 50 and 100 mM). The results showed that salinity and GB had significant effects on pigments and mineral elements of cucumber plants. According to the results, salinity condition decreased chlorophyll and carotenoids content, Ca and K concentration, but exogenously applied GB improved these attributes under salinity conditions. The highest and the lowest Ca and K concentrations were observed in 100 mM GB under the control treatment and 0 mM GB under 100 mM salinity treatments, respectively. The highest total chlorophyll, chlorophyll *a*, *b* and carotenoid content were observed at 100 mM GB under control conditions and the lowest total chlorophyll, chlorophyll *a,b* and carotenoid content were recorded at 0 mM GB under 100 mM salinity treatment. The results also showed that Na and Cl concentration increased as salinity level raised but GB application led to the lower concentrations of these elements. These results suggest that GB can be used as an organic osmolyte regulator to improve physiological growth parameters such as photosynthetic pigments and mineral elements uptake under stress conditions.

Keywords: cucumber, glycine betaine, mineral element, photosynthesis, pigments content.