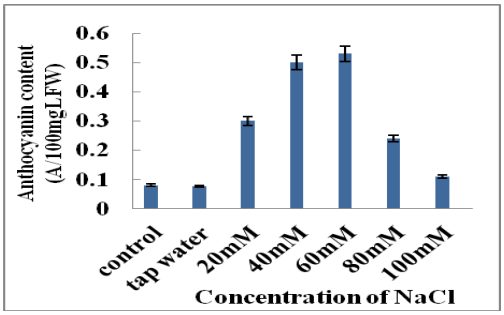

Figure 2: Changes in anthocyanin content of *Solanum nigrum* plants treated with different concentrations of NaCl. The values are an average of 3 independent measurements. Mean±SE, n=3

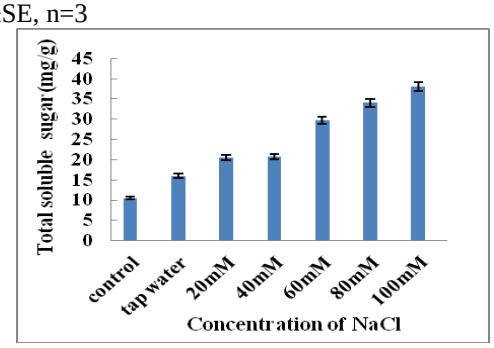

Figure 3: Changes in totalsoluble sugar content of *Solanum nigrum* plants treated with different concentrations of NaCl. The values are an average of 3 independent measurements. Mean±SE, n=3

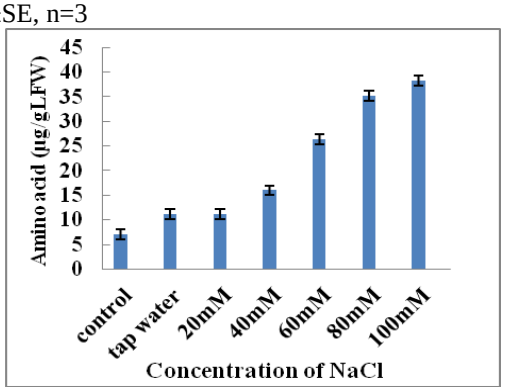

Figure 4: Changes in total amino acids content of *Solanum nigrum* plants treated with different concentrations of NaCl. The valves are an average of 3 independent measurements. Mean ± SE, n=3

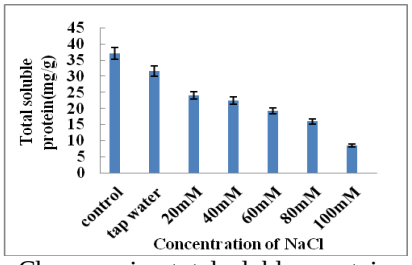

Figure 5: Changes in totalsoluble protein *content* of *Solanum nigrum* plants treated with different concentrations of NaCl. The values are an average of 3 independent measurements. Mean±SE, n=3

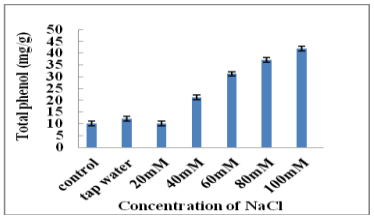

Figure 6: Changes in phenol content of *Solanum nigrum* plants treated with different concentrations of NaCl. The values are an average of 3 independent measurements. Mean±SE, n=3

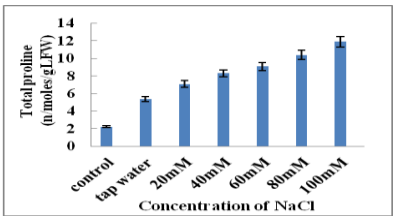

Figure 7: Changes in total proline content of *Solanum nigrum* plants treated with different concentrations of NaCl. The values are an average of 3 independent measurements. Mean±SE, n=3

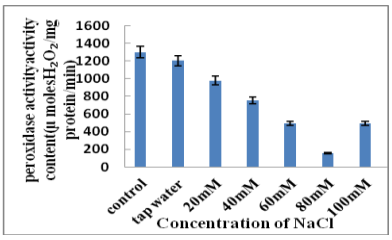

Figure 8: Changes in peroxidase activity content of *Solanum nigrum* plants treated with different concentrations of NaCl. The values are an average of 3 independent measurements. Mean±SE, n=3

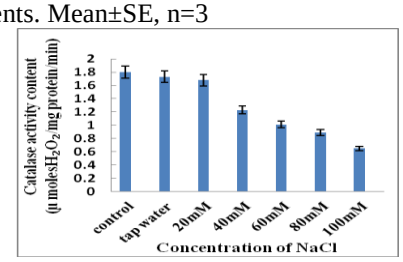

Figure 9: Changes catalase activity content of Solanumnigrumplants treated with different concentrations of NaCl. The values are an average of 3 independent measurements. Mean± SE, n=3

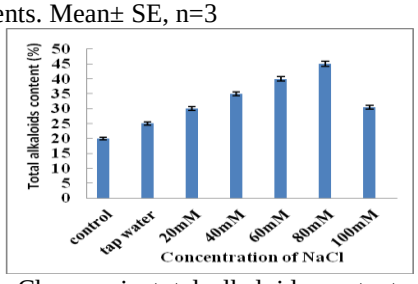

Figure 10: Changes in total alkaloids content of *Solanum nigrum* plants treated with different concentrations of NaCl. The values are an average of 3 independent measurements. Mean ± SE, n=3

4. Conclusion

Solanum nigrum L. may be considered as stress tolerant, can be cultivated at commercial level to meet out the ever

increasing demand of medicine, as well as the pharmaceutical industries.

5. Acknowledgement

The authors are thankful to the Management and Principal for providing the necessary infrastructure facilities to carry out the experiments.

References

[1] Abd El-Wahab, M.A. (2006).The efficiency of using saline and fresh water irrigation as alternating methods of irrigation on the productivity of *Foeniculum vulgare* Mill subsp. vulgare var. vulgare under North Sinai conditions. *Res J. Agr. Biol. Sci.* **2:** 571-577.

[2] Ashraf, M.and Ali, Q. 2008. Relative membrane permeability and activities of some antioxidant enzymes as the key determinants of salt tolerance in canola (*Brassica napus* L.). *Environ.*

[3] Das, N., Misra, M. and Misra A.N.(1990). Sodium chloride salt stress induced metabolic changes in pearl millet callus. *Plant Physiol*. **53:** 119-124.

[4] Delauney, A.J. and Verma, D.P.S. (1993). Proline biosynthesis and osmoregulation in plants *Plant Physiol* **4:** 215-223.

[5] *Exp. Bo.t* **63**:266-273.

[6] Ghoulam, G., Foursy, A. and Fares, K., (2002). Effect of salt stress on growth, inorganic ionsand proline accumulation in relation to osmotic adjustment in five sugar beet cultivars. *Enviro. and Exper. Botany*. **47**: 39-50.

[7] Jaleel, C.A., Manivannan, P. and Sankar, B. (2007). Pseudomonas fluoresens enhances biomass yield and ajmalicine production in *Catharanthus roseus* under water deficit stress. *Plant Physiol.* **60:** 7-11.

[8] Jayaraman, J. (1981). In: Laboratory manual in Biochemistry. Wiley Eastern Limited, Chennai. 51-53.

[9] Karthikumar, S., Vigneswari, K. and Jegatheesan, K. (2007). Screening of antibacterial and antioxidant activities of leaves Eclipta prostrate L. *J. Plant. Sci. Res*. **2:**101-104.

[10] Koca, H., Bor, M. and Ozdemir, F.(2007). The effect of salt stress on lipid peroxidation, antioxidative enzymes and proline content of sesame cultivars. *Environ Exp Bot*. **60**: 344- 351.

[11] Lowry, O.H., Rosenbergh, N.J., Farr, A.L. and R.J. Randall. (1951). Protein measurement with Folin phenol reagent. *J. Biochem*. **193**: 265-275.

[12] Mittova, V., Guy, M., Tal, M. and Volokita, M. (2002). Response of the cultivated tomato and its wild salt-tolerant relative *Lycopersicon pennellii* to salt-dependent oxidative stress: increased activities of antioxidant enzymes in root plastids. *Free Radic Res*. **36:**195-202.

[13] Munns R. Comparative physiology of salt and water stress. *Plant Cell Environ.* (2003). 2**5:** 239-250.

[14] Munns, R. and Tester, M. (2008). Mechanisms of salinity tolerance. *Annu. Rev. Plan.t Biol.* **59:** 651- 681.

[15] Najafi, F., Khavari-Nejad, R.A. and Ali, M.S. (2010). The effects of salt stress on certain physiological parameters in summer savory **(***Satureja hortensis* L.) plants. *J. Stress Physiol Biochem*. **6:** 13-21.

[16] Oncel, I. and Keles, Y. (2002). Tuz stress altindaki bugday genotiplerinde buyume, pigment icerigive coizunur madde kompozisyonunda digismeler. C.U. Fen-Edebiyat Fakultesi Fen Bilimleri Dergisi. **23:** 8-16.

*[17]*Osman, M.E.H., Elfeky, S.S., Abo El-Soud, K. and Hasan, A.M.(2007).Response of *Catharanthus roseus* shoots to salinity and drought in relation to vincristine alkaloid content. *Asian J. Plant Sci.* **6:**1223-1228.

[18] Rhoades, J.D. and Loveday, J. (1990). Salinity in irrigated agriculture. In American Society of Civil Engineers, Irrigation of Agricultural Crops. *American Society of Agronomists*. **2:** 1089-1142.

[19] Shalan, M.N., Abdel-Latif, T.A.T. and Ghadban, E.A.E El.(2006).Effect of water salinity andsome nutritional Compounds of the growth and production of sweet marjoram plants (*Majorana hortensis* L.). *Egypt. J. Agric Res*. **84:**959

[20] Singh, N.K., Bracker, C.A., Hasegawa, P.M., Handa, A.K., Buckel, S., Hermodson, M.A., Pfankock, E., Regnier, F.E. and Bressan, R.A.(1987).Characterization of osmotin. Athumatin-like protein associated with osmotic adaptation in plant cells. *Plant Physiol*. **85:**126-37.

[21] Singh, N.K., Bracker, C.A., Hasegawa, P.M., Handa, A.K., Buckel, S., Hermodson, M.A., Pfankock, E., Regnier, F.E. and Bressan, R.A.(1987).Characterization of osmotin. Athumatin-like protein associated with osmotic adaptation in plant cells. *Plant Physiol*. **85:**126-37.

[22] Smirnoff, N. (1993).The role of active oxygen in the response of plants to water deficit and desiccation. *New Phytol*. **125:** 27-58.

[23] Tewari, T.N. and Singh, B.B. (1991). Stress studies in lentil (Lens esculenta Moench). II. Sodicity –induced changes in chlorophyll, nitrate, nitrites reductase, nucleic acids, praline, yield and yield components in lentil. *Plant Soil*. **135:** 225-250.