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PHYSIO-ANATOMICAL RESPONSES OF SALINITY STRESSED WHEAT PLANTS TO MAGNETIC FIELD

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ABSTRACT: *In order to investigate the physiological and anatomical changes of wheat plants (*Triticum aestivum* L. cv. Sakha 93) exposed to magnetic field under salinity conditions. Pot experiment was carried out in a greenhouse at the Experimental Farm of Faculty of Agriculture, Menofiya University, Shibin El-Kom, Egypt during the growing season of 2010/2011. Plant samples were taken 100 days of sowing. The obtained results of magnetic treatment (magnetized seeds, magnetized water and the combination of magnetized seed and water treatments) showed that plant growth and some physiological, biochemical characters i.e. (water relations, membrane integrity, total proline and endogenous phytohormone) were significantly increased at salinity level (10 dS/m) compared to the control. The anatomical stem parameters i.e. (stem diameter, stem cavity diameter, number of vascular bundle/cross section, vascular bundle diameter and vessel diameter] and the anatomical leaf parameters i.e. [lamina thickness, midrib thickness, midrib vascular bundle diameter and vessel diameter] of wheat plant were markedly enhanced by the different magnetic treatments and their combination at salinity level (10 dS/m) compared to the control, while there were a remarkable decreases in leaf water deficit, transpiration rate and the concentration of ABA in plant shoot. Generally, the effect of magnetized water treatment was more pronounced in the plant development.*

Key words: *Magnetic water, wheat plants, growth, water relations, chemical constituents, phytohormones, anatomical.*
