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EFFECT OF DIFFERENT IRRIGATION LEVELS AND SALICYLIC ACID APPLICATIONS ON GROWTH, YIELD AND QUALITY OF GARLIC (*ALLIUM SATIVUM, L.*)

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ABSTRACT

Field experiment was carried out in a private farm at Meet Assas, Samanoud El-Gharbia Governorate, Egypt, during the two seasons of 2013-2014 and 2014-2015 on garlic clone Sids-40. The study was conducted to investigate the effect of different irrigation water levels (40, 60, 80 and 100 % from the crop evapotranspiration ETc) and their combination with the various applications of salicylic acid (SA) which including cloves soaking, leaf spraying and both soaking and foliar spraying with SA together at the concentration of 0.5 mM on growth, yield and bulb quality. The results indicated that the highest significant values in the plant fresh weight and leaf area as well as bulb weight, diameter, total yield and marketable exerted from using the irrigation level of 80 % from ETc with the application of both soaking and spraying together at 0.5 mM SA. The same trend was obtained in the plant and bulb dry weight and pungency content in bulb. On the other hand, the highest significant content of proline in leaf was obtained from the irrigation level at 40 % from ETc with soaking of cloves in SA solution but the highest significant ascorbic acid and total soluble solids contents in bulb were occurred from using the irrigation level of 40 % from ETc and the application of SA by both soaking of cloves and foliar spraying together. At the same time, the highest significant value of relative water content exerted from using the irrigation level at 100 % from ETc with the application of SA by both cloves soaking and foliar spraying together in both seasons.

Key Word: garlic, salicylic acid and crop evapotranspiration.