Fifth Article:

Article title	**Foliar Application of Selenium and Glycine Betaine Improve Morph-Physiological Characteristics of Peach Trees Grown Under Deficit Irrigation Stress**
Participants	Samir A. Sief Al-Yazal, Hamada R. Bahery, Mohamed S. Attia and **Hussein, H.A.Z** **Horticulture Department, Faculty of Agriculture, Fayoum University, Egypt.**
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Abstract

The current investigation was carried. out during two successive. seasons of 2017 and 2018 on 8 years old peach trees (*Prunus persica* L. Batsch) cv."Florida Prince" grown on "Nemaguard" rootstock was grown in a newly reclaimed land at a private farm, in Wadi El Natroun District, Beheira Governorate, Egypt to study the response of the drought-stressed peach trees to foliar application of selenium (Se) and Glycine betaine (GB) on vegetative growth and Physiological characteristics, trees grown under deficit irrigation "DI_{70}" (70% of water use) in sandy soil. Glycine betaine (GB) was used to spray the peach tree foliage at 3 levels (0, 25, and 50 mM) and Selenium (Se)was sprayed at (0, 20, and 40 ppm). The Results indicated that the tree was irrigated with highest amount of irrigation water applied "FI_{100}" (100% WU) produced the highest significant values of vegetative growth. "DI_{70}" (70% WU) treatments significantly decreased vegetative growth. Foliar application of GB reduced the negative impacts of water stress, and produced the maximum significant values of averages of shoot length (SL), number of leaves per shoot (NLS), and leaf area LA $(cm)^2$. It was also concluded that, foliar application of GB with 50 mM/l, and Selenium (Se) 20 ppm can be enhanced the vegetative growth and physiological characteristics of peach trees grown under deficit Irrigation Stress "DI_{70}".

Key words: vegetative growth, Physiological, *Prunus persica*, deficit irrigation (DI), glycine betaine (GB), selenium (Se).