

#### **Fourth Article(Single).**

### **Influence of compost on *Calendula officinalis* plants as affected by different agricultural drainage levels of irrigation water.**

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#### **SUMMARY**

Apot experiment was conducted to identify the influence of compost mixed with the soil at three different rates (0, 50 and 100 g/pot) before cultivation and application of agricultural drainage saline water (DW) alone (DW, EC<sub>w</sub> = 4.93 dS/m) or mixed with fresh water (FW) (FW, EC<sub>w</sub> = 0.31 dS/m) in different mixtures (FW:DW =2:1, 1:1 and 1:2; corresponding EC<sub>w</sub> values of 1.68, 2.27 and 3.62 dS/m, respectively) for irrigating *Calendula officinalis* L. plants during two successive growing seasons of 2013/2014 and 2014/2015.

The results obtained showed that all vegetative growth, flowers parameters and chemical constituents were significantly decreased except of proline. Na, Mg, Ca and B were significantly increased by applying the drainage water directly or as a mixture with fresh water at any ratio. On the other hand, these parameters and chemical constituents were significantly increased with increasing compost application rates under irrigation with fresh or drainage water, while prompted a noteworthy decrease in proline, Na and B. The interaction effect between compost and drainage water levels was almost positive for all vegetative growth, flower parameters and chemical constituents. The most favorable interaction treatment was the highest level of compost (100g/pot) combined with drainage water at rates 2:1 and 1:1. It can be concluded that compost application overcome the harmful effect of drainage water and had a favorable effect on vegetative growth, flowering and chemical constituents of *Calendula officinalis* L. plants.