



## The beneficial effect of subsurface drip irrigation system on yield, fruit quality and leaf mineral content of Valencia orange trees

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**Abstract:** The effect of subsurface drip irrigation comparing with the surface one on yield, fruit quality and leaf mineral content of Valencia orange trees was studied. Trees were grown on sandy soil at the farm of National Research Centre, Nubaria district, Behaira governorate, Egypt. Three drip irrigation rates (12, 9, 6 drippers per tree) were used as surface or subsurface drip irrigation systems.

From the obtained results, it could be concluded that subsurface drip irrigation system shows a positive effect on maximizing water use efficiency which detected as increasing the yield and fruit quality. In general, subsurface irrigation was more effective comparing with the surface one. In this concern, treatment of 12 drippers per tree under subsurface irrigation was the promising one comparing with the other treatments, since this treatment was the superior in increasing fruit number, fruit weight and yield per tree in both studied seasons, also improved both physical and chemical fruit quality of Valencia orange trees.

**Key words:** Valencia orange – Subsurface irrigation – Yield – Fruit quality – Leaf mineral content.

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