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DESIGN OF TILE DRAINAGE SPACING UNDER TRANSIENT CONDITIONS

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ABSTRACT: Efficient drainage systems improve the crop productivity by lowering the water table and reducing salinity in the root zones of the crops. Furthermore, considering the transient conditions in the design of the tile drains spacing would make the drainage system reliable. In the present work, a finite difference model is applied to simulate the soil moisture distribution in the vadose zone. Also, the balance model is applied incorporating the transient percolation rate in order to evaluate the drain spacing of a field cultivated with cotton. Additionally, three treatments were studied to design the drain spacing under different drain levels, maximum allowable height of water table and transpiration conditions.