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[An Integrated Model for Assessing Reclaimed Wastewater Irrigation](#)

Water reclamation and reuse are becoming essential components of integrated water resources management worldwide since the treated wastewater can serve as an alternative water resource to help satisfy increasing demands for water. One common use for reclaimed wastewater is for agricultural irrigation. While wastewater reuse for agriculture has many benefits, it should be properly managed in order to maximize productivity and reduce negative environmental impacts such as salinity buildup, nitrate leaching, and crop uptake or transport to groundwater of toxic metals. In this research, a user friendly (windows based) model was specifically developed to evaluate the effects of wastewater irrigation on crop growth, salt distribution and movement, nitrogen balance, and the fate of toxic metals in the root zone. The model allows simulation of the water, salt, nitrogen, and toxic element movements in soil and their effect on relative crop yield, which is influenced by water pressure, salinity, and nitrogen stresses. Model outputs include relative crop yield, mass balance tables about water flow, nitrogen and selected elements, the temporal as well as profile distributions of salts, nitrogen and selected elements. It can be used as a planning tool to assess the risks related to reclaimed water application. Specifically, the model will help to select appropriate management practices to sustain crop production and environmental quality in soils irrigated with reclaimed wastewaters.

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