



## Modeling Water Infiltration in Soil Irrigated with Treated Wastewater

Mamoun Gharaibeh, Ammar Albalasmeh, and Ma'in Alghzawi

Jordan University of Science & Technology, Faculty of Agriculture, Natural Resources & Environment, Irbid, Jordan  
(mamoun@just.edu.jo)

Infiltration of soils irrigated with treated wastewater (TWW) was modeled using Philip, Horton, Kostiakov, and modified Kostiakov. Treatments were: soil irrigated with TWW for 5 years, 2 years, and a control site. Cumulative (Ft), rate of infiltration (ft), and hydraulic conductivity (HC) were measured in the field and aggregate stability (AS) in the lab. Both HC and ft were decreased with and AS was increased with TWW use and period of application. The Root Mean Squared Error (RMSE) and correlation coefficient (R2) were used to measure the goodness of fit and linearity of the relationship between models and measured data. Philip model was best to fit infiltration compared to other models. High AS values in treated areas compared to control area indicated that infiltration was more affected by pore clogging than soil dispersion and swelling,