

ABSTRACT

DETERMINATION OF HYDRAULIC PARAMETERS FOR SOILS IRRIGATED WITH RECYCLED SALINE-SODIC DRAINAGE WATER

Irrigation with sodic waters negatively affects soil physical properties. Understanding the effects of soil chemical properties on soil water retention and hydraulic conductivity can lead to better management practices for soils irrigated with saline-sodic drainage water (DW). Re-use of DW for the irrigation of salt tolerant plants is one of several drainage management strategies proposed for the Westside San Joaquin Valley of California. Soils from Red Rock Ranch (RRR) on west side were collected from areas irrigated with fresh-water (FW) and recycled DW to determine saturated conductivity and water retention characteristics. Irrigation water salinities ranged from 1 dS/m to 14 dS/m (EC). Soil textures were clay loams. Soil salinities ranged from 2.4 dS/m to 50 dS/m ECe and SARs from 8.6 to 85.4 for FW and DW irrigated soils, respectively. Saturated flow rates ranged from 1.02×10^{-3} to 7.58×10^{-7} cm/s in the DW irrigated soils.

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December 2004