# Polyacrylamide Effects on Water Infiltration in Sandy Loam Soils. (S06-ajwa195522-Poster)

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## Abstract:

Some sandy soils of the California San Joaquin Valley have low water infiltration. Electrical conductivity (EC) and sodium adsorption ratio (SAR) of irrigation water greatly affect infiltration rate and hydraulic conductivity of soils. High molecular weight polyacrylamides (PAM) have been shown to increase aggregate stability and reduce irrigation-induced erosion. Our objective was to investigate the effect of two formulations, Pristine (liquid) and Superfloc (solid), of negatively charged PAM on infiltration rates of water with various salts into sandy loam soil. Increasing PAM concentration reduced cumulative infiltration and infiltration rates of the various quality waters. Higher PAM concentration creates a drag on the infiltrating water due to partial blocking of pores by PAM molecules. Infiltration rate of PAM solutions increased with higher EC and lower SAR. Cation bridging (PAM-Ca-soil) with increasing EC promotes further flocculation of PAM molecules with soil particles and PAM molecules together, therefore, lowering the apparent viscosity of the infiltrating water.

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