

Effect of different concentrations of cactus dato, cactus lefaria, spanish tuna and PAM over some properties of a Quibor-Lara soil

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Abstract

An experiment was performed in a very fine clayey Vertic Haplocambids from Quibor, Lara State, in order to evaluate the effect of three natural conditioners (NC) on some physical properties that affect soil water movement. Suspensions of three plants named as dato cactus (CD), (*Lemaireocereus griseus*); lefaria cactus (CL), (*Cereus deficiens*) and spanish tuna (TE), (*Opuntia ficus-indica*), in concentrations of 32.000, 16.000, 8.000 and 4.000 mg L⁻¹ were prepared. A synthetic polyacrilamide (PAM) in concentration of 10 mg L⁻¹ and a control were also prepared. Particle density in suspension (g L⁻¹), in a 1-liter cylinder at 120 seconds after shaking was measured. Depth of water penetration in miniflumes, using the same treatments was also measured. The hydraulic conductivity of the soil using the same treatments was measured in a constant charge permeameter. Results show that some of the NC treatments increased the density of suspended soil particles the HC and allows a deeper water penetration. It is suggested that these changes are due to the formation of floccules, promoted by the NC and PAM, which confers a more permeable microstructure to the soil depositional crust.

Key words: *Lemaireocereus griseus*, *Cereus deficiens*, *Opuntia ficus-indica*, dispersion, infiltration.

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