



Effects of different soil conditioners on infiltration and aggregate stability

R. Meral (1), H. Merdun (1) and A. Demirkiran (2)

(1) Kahramanmaraş Sutcu Imam University, Faculty of Agriculture, Department of Agricultural Engineering, Kahramanmaraş 46060, TURKEY

(2) Kahramanmaraş Sutcu Imam University, Faculty of Agriculture, Department of Soil Science, Kahramanmaraş 46060, TURKEY

(rmeral@ksu.edu.tr / Fax: +903442230048 / Phone: +903442237666).

The improvement of infiltration rate and aggregate stability is important for runoff and soil loss in agricultural activities. The objective of this study was to determine the effects of polyacrylamide (PAM), straw mulches, and paper pellets on infiltration rate and aggregate stability of soil. Treatments were the application of irrigation water containing PAM(10 mg.L⁻¹), straw mulches(1.25 and 2.5 kg.m⁻²), and waste paper pellet mulching (1.25 and 2.5 kg.m⁻²). The study results showed that each treatment had effect on especially initial infiltration rate. PAM application was little effective on infiltration, whereas it was more effective on the aggregate stability. Straw mulches and paper pellet applications increased the aggregate stability depending upon soil organic matter content increase. However, it is known that, the effect of the PAM is observed especially in only irrigation with the PAM application and it is not permanently for soil amendment. Therefore, using straw mulches and paper pulp is more appropriate because of their low costs and more persistent effects and evaluation of wastes.

Keywords: Polyacrylamide, infiltration, aggregate stability, straw mulches, paper pellet.