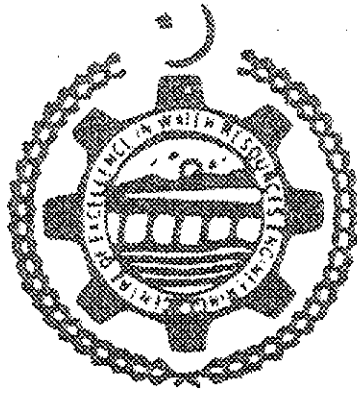


THESIS

**USE OF MAGNETIZED WATER AND ITS EFFECT IN DRIP
IRRIGATION SYSTEM**



7146

SUBMITTED BY

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ABSTRACT

This study was planned to investigate the effect of using magnetized water on soil moisture distribution under drip irrigation. The study was conducted at Wahga village near Wahga border Lahore. Magnetized water was obtained by passing water through a strong permanent magnet installed on water supply pipe line. The drip irrigation system was divided into two sub-units: one sub-unit was irrigated with magnetized water (Magnetic sub-unit) and the 2nd sub-unit without the magnetic device (Non-Magnetic sub-unit). Water quality of the irrigation water was determined by measuring the physical and chemical characteristics of water. Soil moisture samples around the emitters were taken 24 hours after irrigation during the one month irrigation period and it was determined by using oven dry method.

The results showed that the mean soil moisture contents at depths of 0-20, 20-40 and 40-60 cm below the emitters for the magnetized irrigation water treatment were more than the non-magnetized irrigation water treatment. Irrigation with magnetic water increased the soil moisture up to 27.6%, reduced the bulk density of the soil up to 7.2%, increased porosity of soil up to 11.7% and makes the drip system more efficient by increasing the soil water storage capacity up to 25.9%. From the results of this study it can be concluded that use of magnetized water for irrigation results in improving soil moisture condition, may increase the efficiency and performance of drip irrigation system as well as save the irrigation water.