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FEASIBILITY OF USING SOIL SUCTION AS MEANS OF SOURCE OF ENERGY FOR LIFT IRRIGATION IN SANDY REGOSOLS OF SRI LANKA

By

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ABSTRACT

The energy for irrigation involves considerable inputs interms of labour and/or capital. It is therefore, essential to identify any low cost method of irrigation by manipulating available natural resources. In this context an attempt was made to findout whather the suction available or created in unsaturated soil could be used as an alternate energy source for lift irrigation in sandy regosols where shallow water table is present.

The experiment was conducted in the laboratory and in the field. The clay pots which were manufactured locally were used as the main tool to transmit the absorbed water to the soil from lower elevations (heads). The laboratory and field experiments were conducted with two (25 and 50 cm) and three heads (35, 70 and 105 cm) respectively and the performance of this system was tested with the crop blackgram.

It was evident that suction which is available in the soil or created by the soil could absorb water freely from lower water tables without any additional input of energy. In the laboratory experiment, the amount of water absorbed by the soil with plant in 138 hours under the heads of 25 cm and 50 cm were 129 and 114 ml respectively. But the amount of water absorbed under the field condition was quite high, giving the

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