

Investigation of Steady State Infiltration Rate for Different Head Condition

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Abstract : This paper aims at determining the soil characteristics that influence the irrigation process of green landscapes and deciding on the optimum amount of water needed for irrigation. The laboratory experiments were conducted using the constant head methodology to determine the soil infiltration rates. The steady state infiltration rate was reached after 10 minutes of infiltration at a rate of 200 mm/hr. The effects of different water heads on infiltration rates were also investigated, and the head of 11 cm was found to be the optimum head for the test. The experimental results showed consistent infiltration results for the range between 11 cm and 15 cm. The study also involved finding the initial moisture content, which ranged between 5% and 25%, and finding the organic content, which occupied 1% to 2% of the soil. These results will be later utilized, using the water balance approach, to estimate the optimum amount of water needed for irrigation for changing weather conditions.

Keywords : infiltration rate, moisture content, grass type, organic content

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