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EFFECT OF DIFFERENT TILLAGE OPERATIONS ON  
SEEPAGE AND PERCOLATION RATE

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Seepage and percolation rates are essential inputs in estimating water require-

ment for paddy production. Seepage is the amount of water lost through the dikes and percolation is the part infiltrated through the hard pan.

The objective of this study was to evaluate the seepage and percolation rates subsequent to five tillage methods for Reddish Brown Earth soils. These include four different ways of wet puddling and one dryland land preparation method. All plots were sown using pre-germinated paddy and irrigated to stabilize the crop. After 10 days water was ponded upto 10 cm depth and the drop in the water level was recorded at hourly intervals. The measurements were repeated for two consequent days and after one week.

The results showed that the initial and steady seepage and percolation rate for dry cultivation were about twice higher than the wet puddled plots. The initial rates were 2cm/h and 0.76cm/h and the steady rate 1.41cm/h and 0.49cm/h respectively for dry cultivated and puddled plots. No significant differences were shown among the wet puddling methods. In all three measurement dates the seepage and percolation rates were high initially and reduced with water level preceding.

This study highlights the importance of puddling which helps hardpan formation and also ponding water to shallow heights in conserving water during paddy cultivation.