

B-87 Evaluation of initial water losses after irrigation in broad bed and ridge furrow (surface water application) methods in Rhodustalfs

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Ridge furrow method has been recommended for Rhodustalfs as it can be mechanically prepared in large scale cultivation. In a field survey conducted to evaluate the present status of on - farm water management, it was observed that this method had not been accepted by farmers, because it involves more labour and farmers believed that soil in the ridge furrows dry faster than soil in broad beds. Therefore this experiment was conducted to compare the water loss rates in the 2 irrigation methods.

Three basins 6 m long and 6 m wide were prepared as the 3 replicates. Every basin was divided into 2 sections. Each section comprised 2 ridges (twine) and a broad bed. Width of a broad bed was equal to that of the twine ridges. All the basins were uniformly flooded only up to brim of the drains using a Parshall flume and a stop watch. A section from each replicate (basin) was then covered with black polyethylene to arrest the evaporation. Samples taken at the centre and side of the ridge furrow or broad bed at 2.5, 7.5 and 12.5 cm depths were analysed for gravimetric moisture content. Initially sampling interval was 6 h and later increased to 12 and 24 h.

In both ridge furrow and broad beds, initial water depleted mainly by evaporation and the loss through drainage was negligible. Ridges lost water more rapidly as exposing surface area of ridges was 48% greater than that of broad beds.

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