Abstract

Due to the very high water consumption in paddy fields, the need for careful consideration of how to provide and water management in these lands is particular importance.One of the components of the water balance in paddy fields that is important in terms of water use is water deep percolation. As much of the percolation is estimated more accurately, it is better evaluated to determine the crop water requirement and and irrigation and drainage systems design and related facilities in order to reduce water losses can be well done. Due to in our country the subsurface drainage system in the paddy fields is in the early stages of their design, yet a comprehensive study of the changing parameters of the water balance in paddy fields has not been done with these systems. This study examines the impact of subsurface drainage at 30 and 15 meters length and 0.9 and 0.65 meters depth and mid-season drainage on water deep percolation rate during the rice growing season by using an open bottom and bottom lysimeters method. The results showed that the bilevel drain with 163.8 mm has maximum effect and surface drainage with 120.5 mm has the lowest effect on deep percolation rate. Survey results showed that by reducing the distance and increasing the depth of the drains the water deep percolation was added. Mid-season drainage also had a positive effect on water percolation so that after this period, in all the treatments amount of water percolation increased. The bilevel drain treatment also with an average depth of 0.60 mm has maximum and surface drainage treatment with 0.37 mm has the lowest water deep percolaton.

***Keywords*: subsurface drainage, water deep percolation, paddy fields, mid-season drainage**

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Effect of subsurface drainage system on water percolation in paddy fields during rice cropping season

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