

EFFECT OF IRRIGATION TREATMENT ON WATER – USE EFFICIENCY AND YIELD OF CORN

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ABSTRACT

Field experiment was conducted to study the effect of different amount of irrigation water on root growth, moisture content and water use efficiency on corn plant . The treatment were 700 , 630 , 560 ,490 and 420 mm/season of water added with 11 , and 30 interval for the control , and other treatments respectively . A nest of tensiometer were placed in 0.2 and 0.4 m depth from soil surface to study the moisture content and water availability through the season. The results showed that the moisture content of treatment were at the available level for the treatments while the control treatment showed moisture stress . The plant root growth was concentrated at 0 -40 cm depth . The water use efficiency were in the following order . 420 mm , > 490mm > 560 mm > 630 mm > 700 mm. The results of the study showed that water shortage or deficiency no longer limit the corn cultivation if we schedule the use of irrigation water. It is important to use less water and more irrigation intervals as favored moisture content condition can be made at root zone through the season . The results showed that technical irrigation by calculating water applied and more irrigation intervals result in high efficiency in corn production if we compare with non traditional micro irrigation method such as drip and sub surface irrigation methods .