

EFFECT OF IRRIGATION METHOD ON WATER USE EFFECIENCY OF DIFFERENT VARIETIES FROM RICE (*Oryza sativa* L.)

S. B. Salim*

A. H. Atiyah**

A. A. AL-Hasani***

*Department of Science of soil and water resources - University of Baghdad – Agriculture College- salloom_s@yahoo.com.

**Department of soil and water resources -Ministry of Science and Technology- alsadiameera@yahoo.com.

**Department of soil and water resources -Ministry of Science and Technology- aahassani58@yahoo.com

ABSTRACT

This study aims to determine the actual water requirement and water use efficiency for rice (*Oryza sativa* L.). Using 16 varieties of a drought tolerant aerobic rice got it from the International Rice Research Institute and two local varieties (Anbar 33 and Yasamin) under two irrigation methods flooded and sprinkler. Randomized Complete Block Design was used with four replicates. In flooded irrigation water was still on 5-10 cm over soil surface through the growth season. Water was applied when the average of soil water potential (SWP) reached -30 kpa at the 30 cm depth and bring it to the field capacity. Sprinkler irrigation method reduce the water amount by 35% compared with flooded irrigation which gave the largest water consumption 1035 mm/season. There are a significant differences between flooded and sprinkler irrigation method for grain yield 4.23 , 3.66 (t/h) respectively. Therefore, the use of modern technologies for irrigation methods such as sprinkler irrigation and the use of new varieties of rice tolerant to drought (Aerobic rice) are effective ways to increase the water use efficiency and to provide the amount of irrigation water to serve water resources management strategy to address the current deficit is expected in water resources.

Key words: Aerobic rice, irrigation method, water use efficiency.