Faba bean (Vicia faba L.) production under deficit irrigation with treated wastewater applied during vegetative stage

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ABSTRACT

Recently, water crisis has become one of the most significant problems in the world especially in the Mediterranean region. A field research was carried out in the south of Morocco in order to evaluate the effect of deficit irrigation with treated wastewater applied during vegetative growth stage on biomass production and crop water productivity of faba bean (Vicia faba L.). Six deficit irrigation treatments were tested: 100, 75, 50, 25, and 0% of full irrigation and rainfed treatment. The effect of deficit irrigation on growth parameters, yield and its mean components and crop water productivity was evaluated. Deficit irrigation significantly affected crop growth and all yield components considered in this study. The finding of the research evidently indicated that under deficit irrigation applied during vegetative growth using half of required water supply, the yield production and water productivity were higher than where full irrigation was provided (+4% for yield and +24% for crop water productivity), and nearly, 17% of whole volume of applied water has been saved.

Keywords: Leaf area; Yield; Crop water productivity; Water saving; Wastewater