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Growth and Yield Assessment of Two Types of Sorghum-Sudangrass Hybrids as Affected by Deficit Irrigation

Authors : A. Abbas Khalaf, L. Issazadeh, Z. Arif Abdullah, J. Hassanpour

Abstract : In order to evaluate the growth and yield properties of two Sorghum-Sudangrass hybrids under different irrigation levels, an investigation was done in the experiment site of Collage of Agriculture, University of Duhok, Kurdistan region of Iraq (36°5´38 N, 42°52´02 E) in the years 2015-16. The experiment was conducted under Randomized Complete Block Design (RCBD) with three replications, which main factor was irrigation treatments (I₁₀₀, I₇₅and I₅₀) according to evaporation pan class A and type of Sorghum-Sudangrass hybrids (KH12SU9001, G₁) and (KH12SU9002, G₂) were factors of subplots. The parameters studied were: plant height (cm), number of green leaves per plant; leaf area (m²/m²), stem thickness (mm), percent of protein, fresh and dry biomass (ton.ha⁻¹) and also crop water productivity. The results of variance analysis showed that KH12SU9001 variety had more amount of leaf area, percent of protein, fresh and dry biomass yield in comparison to KH12SU9002 variety. By comparing effects of irrigation levels on vegetative growth and yield properties, results showed that amount of plant height, fresh and dry biomass weight was decreased by decreasing irrigation level from full irrigation regime to 5 _o% of irrigation level. Also, results of crop water productivity (CWP) indicated that improvement in quantity of irrigation would impact fresh and dry biomass yield significantly. Full irrigation regime was recorded the highest level of CWP (1.28-1.29 kg.m⁻³).

Keywords : deficit irrigation, growth, sorghum-sudangrass hybrid, yield
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