



RESEARCH ARTICLE :

Optimization of irrigation water for drip irrigated *Rabi* sorghum by using aquacrop model

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ARTICLE CHRONICLE :

Received :

15.07.2017;

Accepted :

30.07.2017

SUMMARY : The field experiment was conducted during *Rabi* 2014-2015 with CSH-16 sorghum hybrid at Water Technology Center, College farm, College of Agriculture, Rajendranagar, Professor Jayashankar Telangana State Agricultural University, Hyderabad to study the effect of different drip irrigation levels on optimization of drip irrigated *Rabi* sorghum *i.e.* drip irrigation at estimated 0.6 ETc throughout the life (I_1), 0.8 ETc throughout the life (I_2), 1.0 ETc throughout the life (I_3), 1.2 ETc throughout the life (I_4), 0.6 ETc upto flowering 0.8 ETc later on (I_5), 0.6 ETc upto flowering 1.0 ETc later on (I_6), 0.6 ETc upto flowering 1.2 ETc later on (I_7), 0.8 ETc upto flowering 1.0 ETc later on (I_8), 0.8 ETc upto flowering 1.2 ETc later on (I_9) and in addition to surface furrow irrigation at 0.8 IW/CPE ratio (I_{10}). Results indicated that Observed grain yield values varied at estimated 0.6 ETc with drip irrigation 4209 kg ha⁻¹ to 8464 kg ha⁻¹ at 1.2 ETc among different irrigation levels to *Rabi* sorghum during 2014-15, while simulated grain by AquaCrop model ranged from 4030 kg ha⁻¹ to 8075 kg ha⁻¹, respectively under the same irrigation treatments. The observed and simulated yields were almost equal; correlation coefficient is 0.98, so Aqua Crop model can be used under varying moisture levels.

KEY WORDS :

Drip irrigation, Optimization, *Rabi* sorghum, AquaCrop model

How to cite this article : Satish, C., Kumar, K. Avil, Rao, V. Praveen and Roja, M. (2017). Optimization of irrigation water for drip irrigated *Rabi* sorghum by using aquacrop model. *Agric. Update*, 12(TECHSEAR-5) : 1296-1299; DOI: 10.15740/HAS/AU/12.TECHSEAR(5)2017/1296-1299.

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