Effect of moisture on yield and quality of amaranth

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Abstract

Effect of soil moisture on amaranths productivity is limited hence the need for this study which was conducted at WVC-Arusha in 2018 using six amaranthus genotypes in RCBD with 4 replicates. Madiira 2, Madiira 1 and Local cv significantly excelled in leaf yield with respectively 19.4, 17.5, 15.8g/plant dry weight when irrigated twice every week while lowest yield was from AH-TL-sel at 4.9g/plant dry weight for once every two weeks irrigation. AH-TL-sel, 'Mchicha' and Bresil-sel gave significantly higher grain yield (p<.001) among the genotype with 16.9, 16.66 and 14.16g/plant at twice a week irrigation. Local cv gave the lowest grains yield (1.47g/plant) when irrigated once every two weeks. Bresil-sel, AH-TL-sel grains had significantly higher crude protein (p \leq .001) among the genotypes with respectively 26.25 and 24.74% in once every two weeks and twice a week irrigation and lowest was from Madiira 2 grains (8.64%) when irrigated once every two weeks. Leaf iron content from local cv was significantly higher among the six genotypes (296.66mg/100g) when irrigated once every two weeks (p \leq .001). AH-TL-sel, 'Mchicha' and Bresil-sel were recommended for grain and Madiira1, Madiira 2 and Local for leafy harvest irrigated at twice a week.