Evaluation of fingermillet varieties under varying levels of irrigation water salinity

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ABSTRACT

Finding alternative means for better use of poor qualityirrigationwatercould significantly help in alleviating pressure on limited fresh-water resources. Identification of salt tolerant crops and varieties is one of the viableoptions for enhancing the productivity under saline irrigation systems. Keeping this in view apot culture experiment was conducted at Saline Water Scheme, Bapatla to evaluate the performance of finger millet varieties Vakula and Tirumala with varying levels of groundwater salinity (up to 12 dS m^{-1})during*rabi*2021-22 and 2022-23. The highest plant height, number of tillers per hill and fingers per earhead in variety Vakula were recorded with the best available water(BAW).There was no significant variation in plant height up to 6 dS m^{-1}but a significant difference was observed with tillers per hill and fingers per ear headat 4 dS m^{-1}.The stover yield was influenced by irrigation water salinity levels. The highest grain yield was recorded by the best available water, which is on a par with 2 dS m^{-1} water and significantly superior to others.Tirumala variety recorded comparable plant height, fingers per earhead and stover yield up to 2 dS m^{-1} when related to BAW. A significant variation was observed in tillers/hill and grain yield between BAW and all other salinity levels. A grain yield level of around 85 per cent was observed at a salinity level of 4 and 2 dS m^{-1}, respectively in Vakula and Tirumala indicating higher tolerance of Vakula variety to irrigation water salinity.

Key words: *Finger millet, Irrigation water, Salinity Soil and water salinity*