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## Response of currently popular *Sorghum* varieties to climate change in south India: DSSAT model analysis

Raveendra H Patil, Sumesh K G and Kajjidoni S T  
University of Agricultural Sciences, India

Indian national food security is not only challenged by the ever growing population, it's fast changing food diets and consumption patterns but also by the expected adverse impacts of climate change. Global food production needs to be doubled by 2050 from the current levels to feed some nine billion people and most of it needs to be met by cereals. This suggests that the productivity of cereals needs not only be enhanced from the current level but maintained under future adverse climates. In India, *Sorghum* is one of the important coarse cereal crops grown mostly in semi-arid climates where high temperatures and moisture stress during crop growing period severely affect yield levels. This would be further adversely affected by projected rise in temperatures and changing rainfall patterns. Therefore, our currently ruling and newly released *Sorghum* cultivars need to be tested for their performance under future climates to know if they are good enough under future climates. This would help us identify traits which need to be targeted in crop improvement programs to design required ideotype for a given location for mid of this century. In this study, DSSAT model was used to assess both the potential yield and impacts of climate change on currently popular and newly released *Sorghum* cultivars. This study also identifies and suggests ideal traits required to be targeted by the *Sorghum* breeders to enhance and maintain higher yields under future climates.

### Biography

Raveendra H Patil has completed his PhD from Copenhagen University, Denmark and has worked as Postdoctoral Researcher at Yangzhou University, China, University of Nottingham, UK, Aarhus University, Denmark and University of Florida, USA. Now, he is based in India at UAS, Dharwad involved in teaching and supervision of Graduate students undertaking research on climate change impact and adaptation studies in agriculture, precision agriculture and sustainable production systems among others. He is a recipient of Young Scientist award from the Indian Government and ISCA, Kolkata, India for his work on agroforestry and over the years he has received number of national and international fellowships. He has published more than 50 papers in reputed journals and has been serving as an Editorial Board Member and Reviewer of number of reputed journals.

[ravipatil2005@gmail.com](mailto:ravipatil2005@gmail.com)  
[patilravi@uasd.in](mailto:patilravi@uasd.in)

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