

## **Climate Change- Jowar Yield Prediction model for Bapatla Coastal Agro-Ecosystem**

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### **ABSTRACT**

One component of mainstreaming of adaptation of jowar crop to climate change in Bapatla coastal agro-ecosystem is the development of an weather based adaptation strategy for the crop. Therefore, a vulnerability assessment study and an assessment of the impacts of climate change on jowar was studied. The basic knowledge, methodologies and tools required for the purpose were taken from DSSAT/CROPGROW/EPsim. The yield and production of the jowar crop from 1991 to 2015 for both *Kharif* and *Rabi* were used. A combination of biometrical observations and weather variables of crop grown during Kharif 2015 were used to test the validity of the both simulation and regression models. The selected step down regression model develop using rainfall alone has given R- value 0.91. From the simulation studies it was found that the contribution of climate change and variability on the yield of jowar crop is about 45 per cent during the next 50 years in the Bapatla agro-ecosystem. Interestingly, on the basis of a comparison of rainfall alone it was found that jowar crop in Bapatla agro-ecosystem is rather susceptible to excessive rain during the vegetative period( rainfall during the 30 days of vegetative period for both kharif and rabi from 10 th day of sowing or 6 th day after emergence). However, the authors strongly suggest for continued and sustained research for further refined results on the long run, the need for climate change impact studies on agricultural crops using other weather variables.

Key words: *Climate change, Jowar yield, Weather health indices.*