

Performance of CERES-Rice model for estimating yield during drought years in Madhya Pradesh

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Abstract: Different sowing dates for four stations in Madhya Pradesh for each year were used to assess the performance of the Decision Support System for Agrometeorology Transfer (DSSAT) v4.6 model for rice crop yield from 1990 to 2011 during drought years. Drought years were identified using observed rainfall datasets from India Meteorological Department (IMD) from June to September (JJAS) for the selected stations viz., Balaghat, Jabalpur, Narsinghpur and Seoni. Two popular varieties of rice (IR 36 and Swarna) were taken in this study. It is found that the DSSAT CERES-rice model predicted yield was higher than the observed yield requiring a bias correction and detrend analysis. The detrend yield anomalies indicated that the model follows observed pattern during most of the drought or deficit phases. Modeling experiments were performed to examine the sensitivity of the model in respect to variations in daily rainfall.