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TREND ANALYSIS OF TEMPERATURE AND YIELD OF WHEAT CROP IN NORTH-WEST INDIA UNDER CHANGING CLIMATE

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India is a country with its economy mainly based on agriculture. Hence any minute changes in an agricultural pattern and yield will have a devastating impact on the economy. This study analyzes the impact of the changing climate on six zones which represent three states of India viz Haryana, Punjab, and Uttar Pradesh considered for the Investigation. Temperature trend analysis for Annual, seasonal (monsoon, pre-monsoon, post- monsoon, winter) and decadal was conducted, which shows the more significant trend for minimum temperature as compared to maximum temperature. Result analyzed for selected wheat cultivars, i.e., WH711 (Haryana) and PBW-343 (Punjab and Uttar Pradesh) which showed decreasing trend. Ceres-wheat used for estimating the crop yield on the decadal basis from 2010 to 2100, based on the projected climate scenarios of IPCC 2013. Model calibration for the selected cultivars showed ±2 % to ± 5 % variation in the observed and simulated parameters. Results indicate that sowing dates will be shift earlier for the chosen varieties and the decadal decrease in yield is more in representative concentration pathways (RCP)-2.5 as compared to other scenarios, i.e., RCP 4.5, RCP 6.0 and RCP 8.5. Intra decadal variation also shows that more decrease in RCP 2.5 which followed by RCP 4.5 and RCP 6.0 but around 2% rise in RCP 8.5 as compared to RCP 6.0.

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