

Assessment of climate change impact on wheat crop using MarkSim GCM in Varanasi, Uttar Pradesh

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ABSTRACT

GFLD-CM3 model was used to generate weather data under RCPs scenario i.e. RCP 2.6, 4.5, 6.0 and 8.5 for years 2010, 2035, 2065 and 2095 for Varanasi, Uttar Pradesh. The generated data were used to assess the impact of climate change on phenology and yield of wheat crop using CERES-Wheat model. The results revealed that the impact climate change hastened reproductive stages (anthesis, maturity) and decreased yield in all scenarios. The impact was highest under RCP 8.5. Days to anthesis and days to maturity were projected to reduce by 22 days and 24 days, respectively in 2095 whereas, grain yield decreased by 61.0 per cent.

Key words : MarkSim GCM, RCP, DSSAT-CERES, climate change and wheatcrop