OPTIMIZING THE FRAMEWORK FOR MANOEUVRING THE GPM DATA AND IMD GRIDDED DAILY WEATHER DATA FOR DSSAT CROP SIMULATION MODELING

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Proper understanding of the environment is prerequisite for models to simulate agriculture production network. Abundant datasets are available at various platforms for modeling and simulation. They can be optimized and contrived within a particular model for improved output. Thus fostering better statistical and dynamical modeling results for precision. DSSAT (Decision support system for agro technology transfer) are being extensively used for simulation and estimation of crops productivity for the growing seasons like Rabi and Kharif. In this model, weather data is applied in the format temperature maximum (T-max) and temperature minimum (T-min) in °C, Solar Radiation (S-rad) in MJ/m^2/day and rainfall (RF) in mm. This study is all about using India meteorological department (IMD) gridded weather data daily and global precipitation measurement (GPM) data for weather. They can be utilized for better crop yield estimation. IMD and GPM data are extracted and converted in the required DSAAT format. This MATLAB framework extracts IMD temperature data and merges with GPM rainfall data diurnally. Solar radiation is calculated with Armstrong equation taking temperature as variable. This research focuses on implementing global data and strategies for improved environmental analytics in the future across the world which plays a noteworthy contribution in crop yield estimation assisting farmers and policymakers to take decisions.

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