



Modeling Rice-Wheat Yield Estimation over a Sub-Humid Climatic Environment of Bihar, India

S. Sheraz Mahdi, Mizanul Haque, Sunil Kumar, R.K. Sohane¹, Swaraj Kumar Dutta, Suborna Roy Choudhury and S.K. Gupta

¹Department of Agronomy, ²Directorate of Extension Education, Bihar Agricultural University, Sabour-813 210, India
E-mail: syedapbau@gmail.com

Abstract: A study was carried out to forecast the yield of rice and wheat in six districts of two agro-climatic zones of Bihar. The daily weather data viz. maximum and minimum temperature, morning humidity, afternoon relative humidity and rainfall were arranged week-wise from sowing to harvesting and the relations between weather parameters and yield were determined using statistical tools like stepwise correlation and regression. The model for each district was selected based upon higher R^2 and lower model error values. The models developed were validated for independent data sets. The R^2 varied from 0.63 to 0.97 with error less than 10% for accepted model. The comparison between simulated and observed yield over different districts exhibited a close agreement. Thus, the model developed could be used for forecasting the yield of rice and wheat for six districts of agro-climatic zone IIIA and B of south Bihar. The climatic parameters and technological factors influenced the yield of rice and wheat differently in different districts.

Keywords: Long term weather data, Stepwise regression technique, Model validation, Yield simulation
