



ORIGINAL ARTICLE

COMPARATIVE STUDY OF NON-LINEAR GROWTH MODELS FOR AREA AND PRODUCTION OF SUGARCANE CROP IN UTTAR PRADESH

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Abstract: The present study aimed at the comparison of non-linear growth models (*viz.* Logistics model, Gompertz model and Monomolecular model) for area and production of sugarcane crop in Uttar Pradesh. In this study, the data on area and production of sugarcane was collected for the period from 1990-91 to 2015-16(26 years). Three different growth models such as Logistics model, Gompertz model and Monomolecular model were used to find the best fitted model for area and production of sugarcane in Uttar Pradesh. Forecasting errors namely mean absolute error (MAE), mean absolute percentage error (MAPE), mean squared error (MSE) and R^2 were used as model selection criteria. The study reveals that Logistics model was the best fitted model with the lowest values of MAE = 2.25, MAPE = 0.001, MSE = 213.65. and highest value of R^2 = 66.65(%).

Key words: Logistics model, Gompertz model, Monomolecular model, Sugarcane.

Cite this article

Minakshi Mishra and Ratan Kumar Thakur (2021). Comparative Study of Non-linear Growth Models for Area and Production of Sugarcane Crop in Uttar Pradesh. *International Journal of Agricultural and Statistical Sciences*. DocID: <https://connectjournals.com/03899.2021.17.533>