Temperature Guidance to Utilize the Rice Production of Specific Districts in Sri Lanka

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Rice is the most common staple food in Sri Lanka, and rice cultivation is one of the country's main industries, with a significant impact focused in a few large regions. Rice production is fraught with environmental, economic, and social issues in Sri Lanka. One of the driving factors that directly impact rice production is temperature. Temperature guidance was generated utilizing numerical weather prediction (NWP) data and the R programming language using multiple linear regression as a technique to provide temperature forecasts. Linear regression analysis, innovative trend analysis, and the modified Mann-Kendal test were used to do trend analysis individually for the districts of Anuradhapura, Kurunagala, and Ampara, that were having a substantial impact on rice production. A trend analysis of average, maximum, and minimum temperature and rice harvest over the previous 30 years has indicated some positive correlations. These findings will be useful in future research when developing temperature guidelines for districts that follow the above-mentioned guidance-making technique.

Keywords: Temperature, Weather Forecasting, Rice Harvest, Trend Analysis