E 40 SEASONAL ARIMA MODEL FOR PREDICTING CROP WISE COCONUT YIELDS IN A GIVEN ESTATE

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Seasonal Autoregressive Integrated Moving Average (ARIMA) process of (0,1,2) x (0,1,1) x 6 that best fits a set of crop-wise coconut yield data, in Bandiripuwa estate, Lunuwila, was identified without using any variance stabilization transformation. In this process the present value of the series may be described as a linear function of the past observations of the series and past disturbances. To apply this model it is not necessary to maintain past records of the physical factors, such as rainfall, temperature, day length, etc., only the past crop-wise figures in the particular estate are required. While such a model is useful for short term crop-wise yield forecasting, it also provides the upper and lower limits of the forecasts at a given probability. Apart from the importance of the advance knowledge of the yield levels, these confidence intervals would also be useful since they provide quantified information on the degree of duration of the forecasts. Further it was observed that the sesonal autocorrelation coefficients of the original data gradually trails off to zero, indicating that the correlation between a given pick in successive years decreases slowly as the time period increases.