

ABSTRACT

Bird's eye chili is one of horticultural crops with high-demand in both domestic and international markets. High market demand coupled with often unstable supply has caused the price of bird's eye chili in West Kalimantan to be volatile. This situation impacts various stakeholders, necessitating a method to forecast chili prices to enable strategic responses to price fluctuations. Fuzzy time series is a suitable method for forecasting time series data with significant fluctuations. This study aims to apply and identify the best model among the Chen, Lee, and Singh fuzzy time series models for forecasting bird's eye chili prices in West Kalimantan. The data used consists of the retail prices of bird's eye chili in West Kalimantan from September 1, 2023, to October 31, 2024, with a total of 425 observations, divided into 340 for training and 85 for testing. The modelling results showed MAPE values of 3.09%, 2.79%, and 1.56% for the Chen, Lee, and Singh models, respectively. Based on the MAPE values, the Singh model was selected as the best model for forecasting bird's eye chili prices in West Kalimantan because it achieved the smallest MAPE. Performance evaluation using testing data also demonstrated that the Singh model performed exceptionally well, with a MAPE below 10%, specifically 1.56%. The forecasting results for the next seven periods are Rp. 42.399,12, Rp. 43.239,67, Rp. 42.679,76, Rp. 43.369,65, Rp. 42.852,81, Rp. 43.489,63, and Rp. 43.012,55.

Keywords: Bird's Eye Chili Prices, Fuzzy Time Series, Chen, Lee, Singh.