

ABSTRACT

Agricultural commodities prices are sometimes unstable and it raises worries for farmers and consumers. One of many factors is the rainfall in the area where those commodities are planted. Agricultural commodities prices can be predicted by learning the historical data of its prices and also the rainfall data. Predicting agricultural commodities prices was already done with Fuzzy Cognitive Maps method. Similarly, with this research that is predicting red onions and red chili prices for 10 weeks later by using one of the architectures of Artificial Neural Network namely Elman Recurrent Neural Network (ERNN) with Backpropagation algorithm. This research will also classify the planting recommendation-farmers prices based on the prediction results. This research is using red onions and red chili historical data for 6 years. The system performance is measured by using Mean Absolute Percentage Error (MAPE). ERNN with backpropagation algorithm is constrained by getting the most optimal architecture and it causes the prediction results are only located in a certain range. The result from this research is red onion prices commodities prediction achieved an accuracy under 75%, whereas the red chili prices prediction obtain an accuracy below 75%. For the classifications accuracy, red onions prices prediction obtain an accuracy below 75% and chili prices prediction obtain an accuracy under 75%.

Keyword: agricultural commodities, ANN, Elman Recurrent Neural Network, Backpropagation, MAPE