

ABSTRACT

The weather is the most important element in determining planting patterns and types of commodities to be cultivated in agriculture. The weather covering rainfall, temperatures, long irradiating the sun, humidity, wind speed and evaporation. Information is very important to know especially to get results productivity good. When weather happened during that time apt to degenerate it would be affecting the results of a less well or even fail.

In this study attempts to foresee productivity agricultural commodities with an Artificial Neural Network algorithm in optimize Particle Swarm Optimization. Where PSO it was working for update weights of ANN itself. The data used was data monthly of historical data productivity shallots and historical data weather start in 2010 and 2016 obtained from office of trade and industry Bandung district. Through a process that is using preposing PCA, WMA, and normalizing. The data used split into two be data and data testing training. Then compared with the predictions algorithm ANN Backpropagation with MAPE. After done attempted proven that using ANNPSO produce a prediction better MAPE 7,8204 value.

Keywords : forecasting, ANN, PSO, Multilayer Perceptron, Principal Component Analysis, Weighted Average Moving, Normalization, Mean Absolute Percentage Error (MAPE).