ABSTRACT

Prices of agricultural commodities such as onion and chili usually very fluctuation which make Indonesian people become sensitive with it. A lot of problems faced by Indonesia, example vegetables' were unstable, one of the factor is weather. It has major impact for society, predicts its price is solution of this problem. Therefore, at this final project did a method to predict the price of onion and chili usual in order to get an overview of future.

This research will produce a system that can be used to predict agricultural commodities, onion and chili, with precipitation and without precipitation for next ten weeks based on the commodity price data weekly and weekly data of precipitation in Bandung. This prediction use Neural Network Algorithm or in Indonesian is Jaringan Syaraf Tiruan (JST) *to predict price of agricultural commodities onion and chili. However, RBFNN have weakness in determining the value of optimal center. To get the best value, Genetics Algorithm will use for optimization RBFNN. Genetics Algorithm generate random individual number with integer representation, which means the position of the input data, then that individual will be coded as to get the value of the data center. Each individual will be evaluated using RBFNN algorithm to find the best individual based its fitness, after that did another GA operator like parent selection, recombine and mutation so get the individual that contains the value of center in an optimal RBFNN.*

Hybrid GA research and RBFNN with predict price of agricultural commodities i.e. vegetable fungus with the Latin name Lentinus edodes ever conducted in China by Changshou Luo, Qingfeng Wei, Liying Zhou, Junfeng Zhang dan Sufen Sun with title "Prediction of Vegetable Price Based on Neural Network and Genetic Algorithm" MAE obtained with 0144.

For the onion price prediction system without precipitation obtain optimal center value with an input 22, population size 50, generation maximum 500, crossover probability (Pc) 0.8, mutation probability (Pm) 0.1 obtain MAPE 16.166, whereas with precipitation optimal with input 4, population size 50, generation maximum 500, Pc 0.6, Pm 0.1 obtain MAPE 19.212, whereas for chili prediction system without precipitation optimal with input 26, population size 50, generation maximum 500, Pc. 0.6 and Pm 0.1 obtain MAPE 24.116, and for chili with precipitation with input 52, population size 50, generation maximum 500, Pc. 0.6 and Pm 0.1 obtain MAPE 18.723.

Keyword : Prediction, agricultural commodities' price, Neural Networks, Genetic Algorithm, Radial Basis Function.