

ABSTRACT

The agricultural world has been inseparable from the weather and climate. However, due to the effects of global warming climate continues to change that is one factor of the emergence of this proposal writing is to help for the agricultural sector in the field of production in forecast for several months or years ahead in producing.

Forecasting can provide an idea of future events. Forecasting Production in agriculture is very important and very helpful to farmers to know the results of agricultural production in the next few months or years. Therefore this Final Project is trying to help in predicting agricultural production with the views of factors that affect production factors. And Algorithm used to help is Grammatical Evolution Algorithm which is very suitable to be used in predicting something.

Grammatical Evolution algorithm is a development algorithm of Genetic Programming (GP) by presenting individuals. The advantage of Grammatical evolution is to use Individual representation of Backus Naur Form (BNF) so that it can be used to evolve programs that are language free and BNF can be decoded younger and safer to recombination (cross over).

Grammatical Evolution algorithm produces prediction of $T + 1$ productivity agriculture with best performance value equal to $\pm 95.87\%$ For survival selection with Generational Replacement and $\pm 95.91\%$ for survival selection with Steady State. This test is performed by evaluating as many as 10000 individuals.

Keywords: Grammatical Evolution, BNF, Commodity production.