APPLICATION OF FUZZY INFERENCE SYSTEM SUGENO METHOD TO ESTIMATE THE PRODUCTION OF BOTTLED MINERAL WATER

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ABSTRACT

Industrial market competition in this era is more competitive, so it is needed a professional capability of company manager to win it. This is a capability to plan or determine good production in order to supply the fixed demand by concerning to inventory cost, and machine capabilities. Then, the customer demand product is satisfied precisely.

This study aims to estimate total production by applying the method of fuzzy inference system of Sugeno method based on estimation of demand, inventory, machine capabilities, and cost of production are available. The data obtained from the Regional Water Company Jember with bottled water products, from January to February 2011.

Data processing steps consist of fuzzyfication, setting basic rule based on fuzzy inference system of first-order Sugeno method, applying the rules composition and defuzyfication. Mean Absolute Deviation (MAD) value between real production data and based on Sugeno method is 12.

Application of the quadratic regression method can improve the accuracy of estimates of demand estimation for data test in the next period using Mean Absolute Percentage Error (MAPE) of 7.5%.

Key words : Total Production, Sugeno method, Quadratic Regression