QUALITY IMPROVEMENT FOR NPK KEBOMAS FERTILIZER IN PT. PETROKIMIA GRESIK TO REDUCE WASTE AND SAVE THE PRODUCTION COST WITH LEAN SIX SIGMA METHOD

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Abstract

PT. Petrokimia Gresik is a Government Company that produces fertilizer, the fertilizer’s products produced by PT Petrokimia Gresik such as Urea, ZA, SP-36, NPK Phonska, DAP, NPK Kebomas, ZK and organic fertilizer like Petroganik. PT. Petrokimia Gresik also produce non fertilizer products such as Sulphuric, Acid, Phosporic Acid, Ammonia, Dry Ice, Aluminium Fluoride, Cement Retarder, etc. Observation in this research is NPK Kebomas fertilizer that is widely used by farmers today. Quality control is used as the basis for improvement of product quality so as to meet the expectations of consumers, in order to create a product with excellent quality.

In this research applied a method of Lean Six Sigma to achieve perfection and the purpose to achieve six sigma levels of performance to produce only 3.4 defects per one million opportunities or operations - 3.4 DPMO (Defects Per Million Opportunities). This research started by identifying the types of waste at the production process by using the 7 waste, who were created by (shiego Shino 2009). The stage in this research is used Six Sigma’s cycle such as Define, Measure, Analysis, Improve and Control (DMAIC). The method in the concept of Lean Six Sigma approach is a method of FMEA (Failure Mode and Effect Analysis) as a method for determining the value of RPN (Risk Priority Number) will do the continous improvement. The research is also supported by several tools such as RCA (Root
Cause Analysis) is used to find the root cause of the problem and Borda used for identify critical waste. The results of this study is known 7 types of waste that occurs in NPK Kebomas fertilizer, then select the types of waste to be CTQ (Critical to Quality). Otherwise it will be known sigma level of NPK plant 2 after identifying the waste that occurs. And note also the root cause (cause) critical of each CTQ. And note also the root cause (cause) critical of each CTQ. And the last is the obtainment of the best alternative solution based on Value Management that considers the cost function and performance of several alternative solutions exist.

Keywords: Lean Six Sigma, Mapping the Big Picture, RCA (Root Cause Analysis), FMEA (Failure Mode and Effect Analysis), Value Management