

## **ABSTRACT**

*PT. Kusuma Mulia is a company that produces various types of ready to use-fabrics. The product of fabric on the largest percentage is a cloth type of TC 115 / TC 2 115. Until now, company is facing problems of products quality that has not been optimum as it is indicated by the average of physical defect between the months November 2010-March 2011, it was 5.27%.*

*To overcome these problems, Six Sigma methods is utilized, with the principle of achieving zero defect. In six sigma, there are five steps, called DMAIC (Define, Measure, Analyze, Improve, Control), but this research is only conducted until the Improve phase. In the define phase, defining process of the type of fabric production TC 115 / TC 2 115 is carried out and the determining Critical to Quality (CTQ). In measure phase, collection of potential CTQ data and capability process are conducted. Then, the causes of defects would be analyzed and then analysis of prioritization of problems would be performed. In the Improve phase, based on the analysis that has been conducted in the analyze phase, a method that could assist in the determination of the proposal would be utilized, namely TRIZ (Theory of Inventive Problem Solving). The proposal is given to reduce the number of defects that arise on the fabric TC 115 / TC 2 115.*

*Based on this research, we could obtain three keys of CTQ, they are the integrity of products, the hygiene of products, compliance with the specification of color demanded by consumers. Based on the three types of CTQ, there are 11 types of defects found. This research only focused on the four largest defects, such as the krowak defect, torn, dirty, and rust. The performance of the existing fabric production TC 115 / TC 2 115 at the output level is in the value of 16870.55 and DPMO sigma levels of 3, 62. PT. Kusuma Mulia needs to continuously improve the processes in order to achieve 6 sigma. Factors cause defects, such as human, materials, environment, method, and tools. The recommendation provided, among others, to krowak defect (roof replacement with UPVC material and exhaust fan), the torn defects (a tool designed specifically to measure the width of fabric), dirty defects (uniform complete with gloves, masks, shoes vans slip, lab coat, gloves shoes that have been provided by the company, increasing the frequency to clean the floor using XP1 SEBO Vacuum Cleaner Industrial and mopping with automatic lap, posters), and carat defect (replacing roller cloth).*

*Keywords: Six Sigma, TC 115 / TC 2 115, Critical to Quality, DPMO, Sigma Level*