

## **ABSTRACT**

*PT ABC is a manufacturing company that runs in an area of Textile and Textile Product (TPT) exactly as a firm of a textile dyeing. One of products that is produced by the company is Cotton Carded 24s. Nevertheless, it is undeniable fact that there are defects on the basic of 2017-2019 period company's data. Sometimes, the defects are more than the company's target which is 2%. The defects are caused by the process of producing that have not a CTQ process yet. This research focused on the dyeing process which aimed to decrease the existence of the defects and to repair the dyeing process by using DMAI approach. First was definition or identification process in which identifying the steps and the elements that are needed. As a result, there are three defects intensively described in this research. The defects are grammation, striped fabric, and color. Second was measurement in which monitoring the runs of the process by measuring the stability and the capability of the process. The third was an analyzing step that aimed to analyze the causes of the problems by using a Fishbone Diagram, 5 Whys analysis, and Identification of priority problem solving by using FMEA. The forth was improvement step. There was giving a strategy to repair the process on the basic of the identified priority problems. The result was the sheet of a repairing strategy to monitor the maintenance process or digital calibration weight, Poke-Yoke in the sewing process, and applying the acceptance sampling method to the coal inspection process. The simulation results of the new sigma level calculation show an increase in the existing process sigma level, which is 4.415 sigma to 4.573 sigma.*

*Keywords— Cotton Carded 24s, Dyeing, Six Sigma, CTQ, DMAI*