

## ABSTRACT

PT ISD is one of the textile industries in the Indonesia that produces *grey* fabric and color fabric. PT ISD also focus on maintaining the quality of its products to survive in competitive business, but still the quality problems occurred during the year 2011. Based on the inspection report at the end of 2011, percent of the defects that occur in the color fabric is 6.26%, its output from *dyeing* process.

In addressing the issue of quality, then will use lean six sigma methods to obtain the proposed improvements that can improve production quality and reduce the number of defects. In the study with lean six sigma there are five steps called DMAIC (Define, Measure, Analyze, Improve, Control), but in this study is only carried out until the Improve phase. In the define phase, to define the production process of color fabric in dyeing finishing department. In the measure phase will do data collection of CTQ potential, stability calculations and process capability. Then in the Analyze phase to analyze the factors that cause disability, and in order to prioritization the problems. In the improve stage, based on the analysis done at analyze stage, by using some lean six sigma tools such as poka yoke and the application of six S. The proposal is given in order to reduce product defects color fabric.

In this study, CTQ is color fabric who do not get defect, there are seven types of common defects that arise during the dyeing process. In this study, only focused on two dominant types of defects, fold defects and spot defects. The performance of the existing color fabric production is on output level 8974 DPMO and sigma level on 3.87 sigma. Some recommendations are given to improve the quality of products such as tool to clean the rollers, improving the workings of the inspection, modification of thermocouple thermometer and implementation of 6S such as make a variety of displays, labeling of goods and labor scheduling for cleanliness machine.

Key words: lean six sigma, quality improvement, CTQ, DPMO, DMAIC, 6S