

## **ABSTRACT**

*PT. ABC is one of Indonesia's textile company engaged in the manufacture of polyester yarn which is called DTY (Draw Twistered Yarn). Currently, PT. ABC felt the impact of intense competition in the textile companies due to China's textile companies that trying to expand into the West Java region by setting up a new textile factory. One way to deal with this fierce competition is to improve the quality of products.*

*Quality improvement focused on DTY lot ZW 2747 Grade AR3. Based on the data production such as the number of defects and defect percentage within period January to December 2011, the average number of defects in the product DTY Lot ZW 2747 Grade AR3 always exceed the maximum target of the company's disability, 1% of the production. Therefore, six sigma methodology will be done in order to reduce the level of defects in the product.*

*Six sigma method consists of five stages: define, measure, analyze, improve and control (DMAIC). In the define phase, there are 5 CTQ potential that effect on product quality. In the phase measure, it is known that the production process is not stable yet and the capability of the process is 4.099 sigma with DPMO 4676.87 units. Based on the analyze phase, there are seven potential causes of failure that become the priority for improvement. Some improvement solution plan was designed : do feed-forward control in paper tube checks, checking or replacing the nip roller, traverse guide, ceramic and heater at regularly, do the air control on the production floor of DTY and made display as a reminder for the operator.*

**Key words** : *Quality, Six sigma, Potential CTQ, DTY Lot ZW 2747 Grade AR3, DPMO, Sigma level, DMAIC.*