

**INTEGRATION OF SIX SIGMA DMAIC AND FMEA-AHP FOR QUALITY
CONTROL OF 'JOHNNY SHORT ROBUSTO' CIGARS AT
CV DWIPA NUSANTARA TOBACCO
JEMBER**

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ABSTRACT

CV. Dwipa Nusantara Tobacco is one of the tobacco processing companies in Jember Regency, specialising in the production of cigars. In its operational practices, the company faces various quality issues that have a direct impact on product performance and consumer perception. These issues take the form of defective products, particularly in the Johnny Short Robusto (Short Filler) variant, where approximately 8% and up to 15% of the total monthly production is frequently discarded. In response to these issues, quality control and improvement efforts were undertaken using the Six Sigma method, supported by a combination of FMEA and AHP to analyse and identify priorities for improvement regarding the various factors causing defects. Based on the results of the research conducted, the measured sigma level is 3.2, which means it is already capable of meeting the average quality standards in Indonesia. The most dominant types of defects, based on the Pareto chart analysis, are hard cigars and hollow cigars, with defect percentages of 49% and 25% respectively. The calculations performed using the FMEA-AHP method identified twelve dominant failure factors, including man, material, method, and mother nature factors. Consequently, the proposed improvement plan includes several improvements to the material, method, and measurement factors.

Keywords: *Six Sigma, DMAIC, Failure Mode and Effects Analysis (FMEA), Analytical Hierarchy Process (AHP), Cigar Production*