

ABSTRACT

An analysis of quality control in the flannel fabric distribution warehouse at CV. Indah Jaya was conducted by applying the Six Sigma methodology through the DMAI (Define, Measure, Analyze, Improve) approach. The background of this research lies in the high incidence of product damage occurring throughout the stages of receiving goods from suppliers, storage in the warehouse, and distribution to customers. The main issues identified included mold growth on the flannel fabric due to uncontrolled humidity levels and contamination caused by torn packaging during handling and storage. These conditions led to an increase in customer complaints, higher cleaning or replacement costs, and the risk of decreased consumer trust. The research method comprised the collection of defect data over a defined distribution period, and root cause analysis through cause-and-effect diagrams. Measurement results indicated that the two most prevalent defects were mold contamination resulting from humidity levels exceeding recommended thresholds and soiling of the fabric due to packaging damage during stacking and transfer processes. Improvement measures were implemented by installing humidity control systems (dehumidifiers), optimizing procedures for storage and handling, using additional protective packaging, and providing training for warehouse personnel on standard distribution handling practices. Quality control activities were carried out through regular inspections of product and packaging conditions, audits of procedure implementation, and periodic monitoring of storage area humidity levels.

Keywords: *Six Sigma, quality control, distribution warehouse, flannel fabric*