

***Quality Control Analysis to Minimize Defect Levels in Fertilizer
Products at PT AMS Jepara***

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ABSTRACT

This study aims to analyze the quality control of organic fertilizer products at PT Adil Makmur Sentosa (PT AMS) Jepara using a quantitative descriptive method with a Statistical Quality Control (SQC) and Failure Mode and Effect Analysis (FMEA) approach with total sampling and has met the data adequacy test of 23 observations. This study was conducted to evaluate the level of product defects, identify the main causes of damage, and provide targeted recommendations for improvement. Based on the results of data analysis from observations during the period January to October 2025, a total of 13,020 bags were produced, with 418 bags defective, resulting in a product defect rate of 3.21%. This figure is slightly above the company's tolerance limit of 3%. The results of the checksheet, histogram, Pareto chart, and control chart show that the two dominant types of defects are printing defects at 48.3% and damage defects at 35.4%, which are the top priorities in quality control. Through FMEA analysis, two causes of defects with the highest Risk Priority Number (RPN) were obtained, namely burnt seal stickers (RPN 448) and label printing errors from suppliers (RPN 280), thus requiring maintenance of the sealing machine, improved checking of bag labels from suppliers, and enforcement of SOPs.

Keywords: *Quality Control, Statistical Quality Control, Failure Mode and Effect Analysis, Product Defects, Organic Fertilizer*

Analisis Pengendalian Kualitas untuk Meminimalkan Tingkat Kecacatan Produk Pupuk pada PT AMS Jepara

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ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengendalian kualitas produk pupuk organik pada PT Adil Makmur Sentosa (PT AMS) Jepara menggunakan metode deskriptif kuantitatif dengan pendekatan *Statistical Quality Control* (SQC) dan *Failure Mode and Effect Analysis* (FMEA) dengan *total sampling* dan telah memenuhi uji kecukupan data sebanyak 23 kali pengamatan. Penelitian ini dilakukan untuk mengevaluasi tingkat kecacatan produk, mengidentifikasi penyebab utama kerusakan, serta memberikan rekomendasi perbaikan yang tepat sasaran. Berdasarkan hasil analisis data pengamatan selama periode Januari hingga Oktober 2025 diperoleh total produksi sebanyak 13.020 karung dengan produk cacat sebanyak 418 karung sehingga tingkat kecacatan produk sebesar 3,21%. Angka ini berada sedikit di atas batas toleransi perusahaan sebesar 3%. Hasil *checksheet*, histogram, diagram Pareto, dan peta kendali menunjukkan bahwa dua jenis cacat dominan adalah *defect printing* sebesar 48,3% dan *defect damage* sebesar 35,4%, yang menjadi prioritas utama dalam pengendalian kualitas. Melalui analisis FMEA, diperoleh dua penyebab cacat dengan nilai *Risk Priority Number* (RPN) tertinggi, yaitu stiker *seal* gosong (RPN 448) dan kesalahan cetak label dari supplier (RPN 280), sehingga perlu perawatan mesin *sealing*, peningkatan pengecekan label karung dari *supplier*, dan penegakan SOP.

Kata Kunci : Pengendalian Kualitas, *Statistical Quality Control*, *Failure Mode and Effect Analysis*, Kecacatan Produk, Pupuk Organik