

ABSTRAK

Tingginya tingkat kecacatan dalam proses pengemasan produk garam menjadi permasalahan utama yang dihadapi PT. XYZ. Sepanjang tahun 2024, jumlah kecacatan tercatat sebanyak 234.208 pcs dari total 5.657.560 pcs produksi. Penelitian ini berfokus pada analisis risiko kecacatan kemasan garam ukuran 250 gram dengan pendekatan manajemen risiko menggunakan metode *Fuzzy Failure Mode and Effect Analysis (Fuzzy FMEA)*. Tahapan analisis diawali dengan pengumpulan data kecacatan dan identifikasi mode kegagalan berdasarkan Diagram Pareto, yang menunjukkan bahwa jenis cacat dominan adalah kemasan tidak presisi dan kemasan sobek, mencakup sekitar 72% dari total kasus kecacatan. Selanjutnya dilakukan penilaian risiko menggunakan parameter *Severity*, *Occurrence*, dan *Detection* yang difuzzifikasi untuk memperoleh nilai *Fuzzy Risk Priority Number (FRPN)*. Hasil analisis menunjukkan bahwa gangguan sensor pemotongan dan tekanan mesin penyegel yang tidak sesuai merupakan penyebab risiko tertinggi dengan nilai FRPN 700,14. Berdasarkan hasil tersebut, disusun strategi perbaikan meliputi pelatihan operator, perawatan mesin, pengendalian suhu dan kelembapan lingkungan produksi, serta sistem monitoring otomatis. Fokus perbaikan diarahkan pada titik risiko tertinggi untuk menurunkan kecacatan dan meningkatkan kualitas produk.

Kata Kunci: *Fuzzy FMEA*, Pengemasan Garam, Pengendalian Kualitas, FRPN.

ABSTRACT

High defect rates in the salt packaging process have become a major issue faced by PT. XYZ. Throughout 2024, a total of 234,208 defective units were recorded out of 5,657,560 units produced. This study focuses on risk analysis of packaging defects for 250-gram salt products using a risk management approach based on the Fuzzy Failure Mode and Effect Analysis (Fuzzy FMEA) method. The analysis began with collecting defect data and identifying failure modes using a Pareto Diagram, which indicated that the dominant defect types were imprecise packaging and torn packaging, accounting for approximately 72% of total defects. Risk assessment was then carried out using the parameters of Severity, Occurrence, and Detection, which were fuzzified to obtain the Fuzzy Risk Priority Number (FRPN). The results showed that cutting sensor malfunctions and improper sealing machine pressure were the highest risk factors, with an FRPN value of 700.14. Based on these findings, improvement strategies were developed, including operator training, machine maintenance, control of production environment temperature and humidity, and implementation of an automatic monitoring system. Improvement efforts are focused on the highest risk points to reduce defects and improve product quality.

Keywords: *Fuzzy FMEA, Salt Packaging, Quality Control, FRPN*