

***Risk Management Analysis of Good Manufacturing Practice (GMP)
Implementation in the Production of Tempe Super “Sumber Mas” Using Fuzzy
Failure Mode and Effect Analysis (FMEA)
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ABSTRACT

The implementation of Good Manufacturing Practices (GMP) is very important in the food industry to ensure product safety. This study aims to analyze the level of non-conformity in the implementation of GMP in MSMEs in Tempe Super "Sumber Mas" Jember based on the Regulation of the Minister of Industry of the Republic of Indonesia No. 75 of 2010, identify the causative factors, assess the level of failure risk, and formulate improvement recommendations using the integration of Gap Analysis and Fuzzy Failure Mode and Effect Analysis (FMEA) methods. Data is collected through direct observation, in-depth interviews with owners, and assessments from external experts. The results of the Gap Analysis show that the average implementation of basic eligibility standards as a whole reaches 72.21%, which indicates that the implementation of GMP in the company is still not optimal and requires improvement due to the gap gap from ideal conditions. The audit findings in the field identified a number of critical and serious non-conformities, such as the toilet area directly opposite the processing room, the condition of the physical building (hollow floors and peeled ceilings), wooden table materials that absorb water, and low employee hygiene due to the absence of personal protective equipment (PPE) and written recording documentation. Through the Fuzzy FMEA approach, the assessment of the Severity (S), Occurrence (O), and Detection (D) parameters was converted using linguistic variables to overcome subjectivity. The results of the risk analysis set the priority of corrective action based on the highest Fuzzy Risk Priority Number (FRPN) value. Improvement recommendations are formulated using the 5W+1H principle which focuses on worker hygiene education, improvement of physical facilities, procurement of sanitation facilities for sinks, and the preparation of Standard Operating Procedures (SOP) for written production to minimize the risk of cross-contamination and maintain product quality consistency in a sustainable manner.

Keywords: Fuzzy FMEA, Gap Analysis, Good Manufacturing Practice (GMP), Food Safety, Tempe