

ABSTRACT

This study aims to identify and analyze potential risks affecting animal welfare and occupational safety during the stunning process of cattle using a stunning gun at the Magetan slaughterhouse, and to recommend preventive measures. Using the Failure Mode and Effect Analysis (FMEA) method, this study evaluated the various stages of stunning and slaughtering based on three main parameters: Severity, Occurrence, and Detection. The analysis results indicate a relatively high risk at the stunning effectiveness check stage, particularly for the non-penetrative method, with a Risk Priority Number (RPN) of 392. This risk is quite high because failure to ensure the animal is truly stunned can lead to serious violations of animal welfare, compromise the halal status of meat, and endanger worker safety. To mitigate this risk, the study recommends implementing a risk control hierarchy, which includes improving operator competency through training and certification, refining more detailed Standard Operating Procedures (SOPs), routine equipment maintenance and calibration, and optimizing the work environment, such as lighting and layout. Furthermore, enforcing the use of appropriate personal protective equipment (PPE) is crucial to protect workers. Implementing these measures is expected to create a safer and more controlled work environment, ensure a halal and ethical slaughter process, and significantly improve animal welfare standards.

Keywords: Animal Welfare, Stunning Gun, FMEA, Risk Analysis, Halal Slaughter.