# WASTE MINIMIZATION USING LEAN MANUFACTURING APPROACH AT YANNA BAKERY
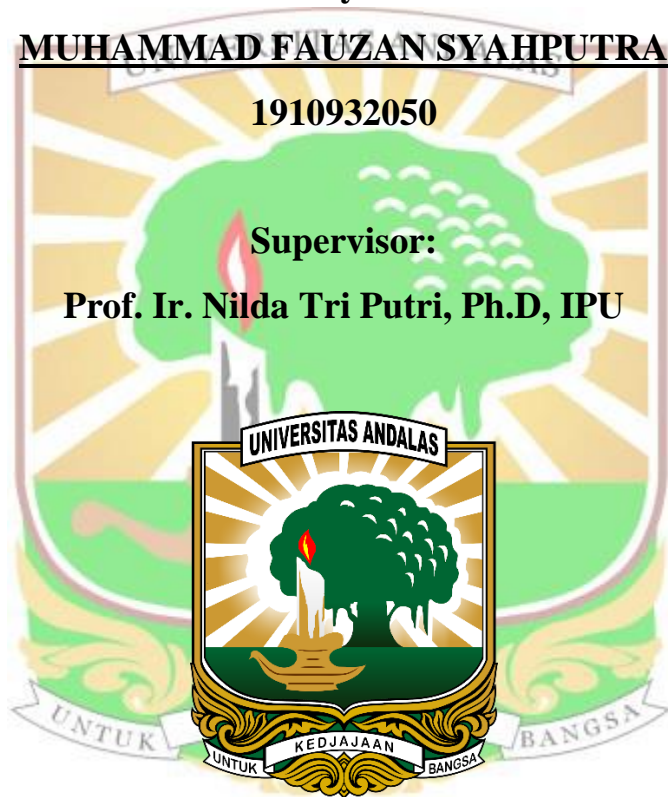
## FINAL PROJECT REPORT

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# ABSTRACT


Yanna Bakery is one of the manufacturing industries in Padang City that produces bakery. During the production process, several wastes were found, one of which was waste over processing. This happens because production employees work on certain processes more than shown, especially in the process of mixing ingredients so that the production process time becomes longer than it should be which causes the demand for bakery per day is sometimes not met. Yanna Bakery also has an ineffective material flow because the layout of the production area does not pay attention to the relationship between facilities so that the distance between facilities is far related which causes the production leadtime to be longer. Therefore, the problems that occur at Yanna Bakery need to be further identified to find out the most dominant waste and what factors cause waste to get recommendations for improvement.

The study employed several methodologies, including Value Stream Mapping (VSM) to depict the true state of the production process at Yanna Bakery, Waste Assessment Model (WAM) comprising Waste Relationship Matrix (WRM) and Waste Assessment Questionnaire (WAQ) to ascertain the waste's score, and Value Stream Analysis Tools (VALSAT) to categorise activities as necessary non-value added, value added, and non-value added. Fishbone diagram to determine the source of waste.

Based on data processing carried out using Current Value Stream Mapping (VSM), a PCE value of 73.05% was obtained. To find out the score of each waste, calculations are carried out using the Waste Assessment Model (WAM). Based on the calculations that have been done, the highest waste is overprocessing with a score of 27% with the second highest is transportation with a score of 24%. This shows that waste overprocessing and transportation are the dominant wastes that are prioritized to get repairs as soon as possible. The selected VALSAT tool to identify value-added and non-value-added activities is Process Activity Mapping (PAM) with a score of 84.8%. Based on PAM and fishbone diagrams, to eliminate or reduce waste, overprocessing and transportation by making and implementing SOPs and good work instructions and re-layout of production areas. With the implementation of good SOPs and work instructions, especially in work areas that produce a lot of waste overprocessing, a reduction in production leadtime of 9.91% was obtained. Proposed re-layout improvements were implemented to reduce transportation waste. Obtained a reduction in transportation time of 40.92%. After the improvement recommendations are given, Future Value Stream Mapping (FVSM) is created to describe the flow of the production process after the implementation of the proposed improvements. Based on the FVSM that has been made, there was an increase in Process Cycle Efficiency (PCE) by 11.67%, from 73.05% to 84.72%.

**Keywords:** Lean Manufacturing, VALSAT, VSM, Waste, WAM

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