

**PROPOSED WORK METHOD IMPROVEMENT AND
WORKLOAD BALANCING TO INCREASE REGULAR
CAPACITY AT TAHU SUMEDANG CC**

FINAL PROJECT

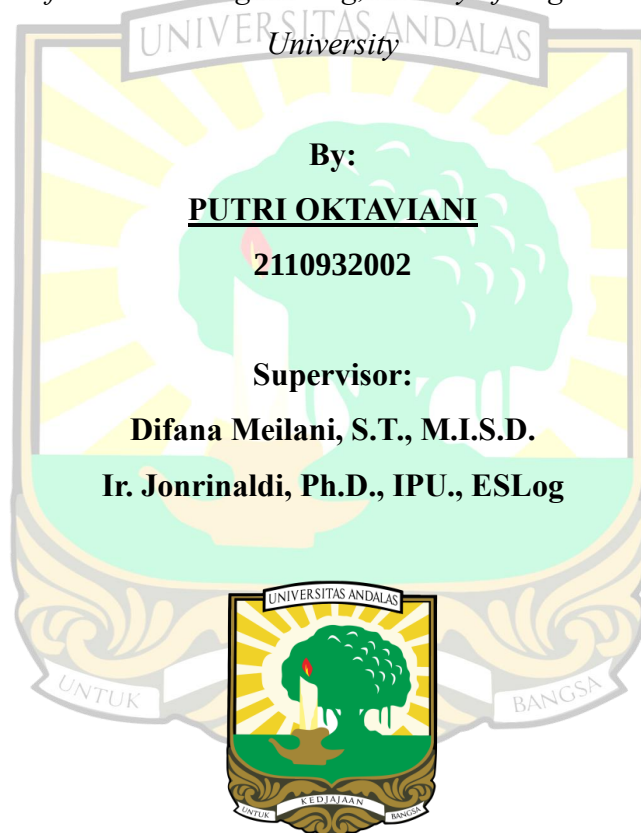


**DEPARTMENT OF INDUSTRIAL ENGINEERING
FACULTY OF ENGINEERING
ANDALAS UNIVERSITY
PADANG
2025**

**PROPOSED WORK METHOD IMPROVEMENT AND
WORKLOAD BALANCING TO INCREASE REGULAR
CAPACITY AT TAHU SUMEDANG CC**

FINAL PROJECT

*As One of the Requirements for Completing the Bachelor Program at the
Department of Industrial Engineering, Faculty of Engineering, Andalas*



By:

PUTRI OKTAVIANI

2110932002

Supervisor:

Difana Meilani, S.T., M.I.S.D.

Ir. Jonrinaldi, Ph.D., IPU., ESLog

**DEPARTMENT OF INDUSTRIAL ENGINEERING
FACULTY OF ENGINEERING
ANDALAS UNIVERSITY
PADANG
2025**

ABSTRACT

The trend of tofu consumption in West Sumatra, based on Badan Pusat Statistik (BPS), particularly in Padang City, increased from 2022 to 2024, as reflected in Tahu Sumedang CC. Currently, regular daily production reaches 29.120 units, but 2,98% of the 336 working hours in February 2025 were allocated to overtime. During the two-week observation period in the same month, 6,04% of demand experienced distribution delays due to difficulties in meeting high demand. Observations also revealed inefficiencies in production activities, such as 19,69% delay at workstation IV by the first worker while the second worker is preparing the tofu before they continue to complete the transferring to the pressing station together.

This study aims to increase production capacity through work method improvements and workload balancing. Work method improvements are carried out by applying the principles of the motion economy, while the balancing is conducted using the workload balancing approach. The evaluation results are then followed by capacity planning to assess whether the proposed improvements are sufficient to meet future demand projections.

Based on the work method improvement calculations, the delay time by the first worker while the second worker is preparing the tofu at workstation IV was successfully reduced to 2,25% allowing the remaining time to be used to assist other workstations. Workload balancing also succeeded in reducing 41,48 minutes/shift, equivalent to 1 hour and 22,96 minutes/day. In addition, the balancing process increased production capacity by 3.640 tofu units/day, or approximately 12,5% of the current production. This additional capacity is expected to meet future consumer demand without the need to purchase additional machines or hire more workers.

Keywords: Inefficiency, Delay, Production Process, Work Method, Workload Balancing

ABSTRAK

Tren konsumsi tahu di Sumatera Barat berdasarkan Badan Pusat Statistik (BPS) khususnya Kota Padang, meningkat dari 2022–2024 seperti pada Tahu Sumedang CC. Saat ini, produksi reguler harian mencapai 29.120 unit, namun 2,98% dari 336 jam kerja Februari 2025 dialokasikan untuk lembur. Pada periode pengamatan dua minggu bulan yang sama, 6,04% permintaan terlambat distribusi akibat kesulitan memenuhi permintaan yang tinggi. Observasi juga menemukan ketidakefisienan dalam aktivitas produksi, seperti keterlambatan 19,69% di stasiun kerja IV oleh pekerja pertama ketika pekerja kedua sedang menyiapkan tahu sebelum mereka melanjutkan menyelesaikan pemindahan ke stasiun pengepresan bersama-sama.

Penelitian ini bertujuan untuk meningkatkan kapasitas produksi melalui perbaikan metode kerja dan penyeimbangan beban kerja. Perbaikan metode kerja dilakukan dengan menerapkan prinsip metode ekonomi gerakan, sedangkan penyeimbangan dilakukan menggunakan pendekatan workload balancing. Hasil evaluasi tersebut kemudian dilanjutkan dengan perencanaan kebutuhan kapasitas untuk menilai apakah usulan yang diberikan mampu memenuhi proyeksi permintaan di masa mendatang.

Berdasarkan perhitungan perbaikan metode kerja, waktu keterlambatan oleh pekerja pertama saat pekerja kedua mempersiapkan tahu di workstation IV berhasil dikurangi menjadi 2,25%, sehingga waktu yang tersisa dapat digunakan untuk membantu workstation lainnya. Penyeimbangan beban kerja juga berhasil mengurangi 41,48 menit/shift, setara dengan 1 jam dan 22,96 menit/hari. Penyeimbangan tersebut juga meningkatkan kapasitas produksi sebesar 3.640 unit tahu/hari, atau sekitar 12,5% dari produksi tahu saat ini. Kapasitas tambahan ini diharapkan dapat memenuhi permintaan konsumen di masa depan tanpa perlu membeli mesin tambahan atau mempekerjakan lebih banyak pekerja.

Kata Kunci: Ketidakefisienan, Delay, Proses Produksi, Metode Kerja, Workload Balancing