



INTISARI

Industri pangan olahan mengalami perubahan seiring meningkatnya preferensi konsumen terhadap produk yang lebih sehat, termasuk pangan bebas gluten. Di Indonesia, peluang ini banyak ditangkap oleh UMKM berbasis komoditas lokal seperti mocaf, namun daya saingnya ditentukan oleh kemampuan produksi yang efisien dan responsif terhadap permintaan. Pada PT Rumah Mocaf Indonesia (RMI), produksi cookies Mocafine masih didominasi oleh proses manual, mengakibatkan *lead time* relatif panjang dan *output* harian yang belum memenuhi permintaan pasar secara konsisten, sehingga perusahaan kerap melakukan lembur. Kondisi ini mengindikasikan adanya aktivitas tidak bernilai tambah dan *bottleneck* dalam aliran produksi yang perlu dipetakan secara sistematis. Penelitian ini bertujuan memetakan pemborosan, menentukan prioritas perbaikan, dan menyusun rancangan aliran proses produksi berbasis *lean* guna meningkatkan efisiensi proses produksi.

Pendekatan *lean* diterapkan melalui *Value Stream Mapping* (VSM) dan *Waste Assessment Model* (WAM) yang dibangun melalui kuesioner terstruktur *Waste Relationship Matrix* (WRM) dan *Waste Assessment Questionnaire* (WAQ). Data diperoleh melalui studi waktu berbasis observasi, wawancara, dan telaah dokumen internal perusahaan. Analisis diarahkan untuk menilai hubungan antar pemborosan, mengidentifikasi lokasi *bottleneck*, serta mengukur proporsi aktivitas bernilai tambah dan tidak bernilai tambah.

Hasil menunjukkan bahwa *waiting* dan *motion* merupakan pemborosan yang paling nampak di lantai produksi. Namun, WAM menempatkan *defect*, *overproduction* dalam bentuk ketidakseimbangan beban kerja terhadap kapasitas, dan *inventory* sebagai pemborosan fundamental. Usulan perbaikan difokuskan pada ketiga pemborosan tersebut melalui standarisasi dan pengawasan kerja, penambahan dan pelatihan operator, pemeliharaan peralatan, penyederhanaan alur aktivitas, dan penambahan kapasitas kontainer WIP. Proyeksi *Future State* VSM menunjukkan potensi penurunan *production lead time* dari 30.778 menjadi 23.714 detik, peningkatan *process cycle efficiency* dari 78,65% menjadi 89,61%, dan kenaikan *output* dari 63 menjadi 82 kemasan per hari tanpa melebihi *available time*, yang memperkuat kemampuan dalam memenuhi permintaan pasar.

Keywords: *Lean production, value stream mapping, waste assessment model, industri pengolahan makanan, production lead time, process cycle efficiency.*



ABSTRACT

Processed food industry is undergoing a major shift as consumer preferences increasingly favor healthier options, including gluten-free alternatives. In Indonesia, this opportunity is being captured by micro, small, and medium enterprises (MSMEs) leveraging local commodities such as mocaf (modified cassava flour). Competitiveness in this segment depends largely on production systems that are both efficient and responsive to market demand. At PT Rumah Mocaf Indonesia (RMI), Mocafine cookie production remains predominantly manual, with prolonged lead time and inconsistent daily output that fails to meet market demand consistently, results in frequent overtime. These non-value-added activities and process bottlenecks therefore require systematic mapping. This study aims to map waste throughout the production process, prioritize critical wastes, and design a lean-based production flow to enhance process efficiency.

Lean was implemented using Value Stream Mapping (VSM) and the Waste Assessment Model (WAM), developed through structured questionnaires comprising the Waste Relationship Matrix (WRM) and the Waste Assessment Questionnaire (WAQ). Data were collected through time study observations, interviews, and reviews of internal company documents. The analysis focused on examining interrelationships among wastes, identifying bottleneck locations, and measuring the proportions of value-added and non-value-added activities.

Findings show that waiting and motion were the most visible wastes on the production floor. Nevertheless, WAM identified defects, overproduction in the form of workload-capacity imbalance, and inventory as the fundamental wastes. Improvement proposals were therefore directed toward these wastes through work standardization and supervision, operator addition and training, equipment maintenance, activity flow simplification, and increased WIP container capacity. Future State VSM projections suggest a potential reduction in production lead time from 30,778 to 23,714 seconds, an improvement in process cycle efficiency from 78.65% to 89.61%, and an increase in daily output from 63 to 82 packages without exceeding available time, thereby enhancing the company's capability to meet market demand.

Keywords: Lean production, value stream mapping, waste assessment model, food manufacturing, production lead time, process cycle efficiency.