

# Penerapan Lean Manufacturing Pada Proses Produksi Makanan Ringan Untuk Mengidentifikasi dan Mengeliminasi Waste Menggunakan Metode Value Stream Mapping (VSM) = Application of Lean Manufacturing in Snack Production Process to Identify and Eliminate Waste Using Value Stream Mapping (VSM) Method

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## Abstrak

Dalam persaingan industri makanan yang semakin ketat, perusahaan dituntut untuk terus meningkatkan daya saingnya dan mampu memenuhi permintaan pelanggan yang terus meningkat. Pemborosan pada proses produksi menjadi salah satu faktor yang mempengaruhi pemenuhan permintaan pelanggan sehingga perlu dieliminasi untuk meningkatkan efisiensi proses. Penelitian ini dilakukan pada salah satu perusahaan manufaktur makanan ringan dengan menerapkan konsep Lean Manufacturing dan metode Value Stream Mapping, serta metode pendukung seperti WAQ, WRM, dan VALSAT. Hasil dari WAQ adalah diketahui 3 jenis pemborosan signifikan pada proses produksi, yaitu defect, transportation, dan motion. Setelah menganalisis akar penyebab pemborosan dan berdiskusi dengan pihak perusahaan terkait perbaikan yang dapat dilakukan, diperoleh penurunan total lead time proses produksi dari 10,03 jam menjadi 7,8 jam dan total cycle time dari 7,9 jam menjadi 6,4 jam. A capacity of 2000 KL is designed based on calculations that refer to the internationally accepted Code and Standards API 650 and JIG 2. Data were analyzed using Microsoft Excel. Based on the design results according to API 650, the avtur tank with a capacity of 2000 KL, which will be built at the Kertajati DPPU, has a diameter of 18m and a height of 9.7m. The bottom and the annular plate thickness is 8mm. The first shell thickness is 8mm, the second 8mm, the third 6mm, and the fourth 6mm. The roof plate thickness is 6mm. While the avtur tank design based on JIG 2 must be coated on the inside of the tank (internal coating), have floating suction, and have three sampling points (upper, middle, lower) connected to the sampling jar.

..... In the increasingly competitive food industry, companies are demanded to continually improve their competitiveness and meet the growing customer demand. Waste in the production process is one of the factors that affect customer demand fulfillment and need to be eliminated to enhance process efficiency. This research was conducted in one of the snack manufacturing companies by applying lean manufacturing concepts and value stream mapping methods, along with supporting methods such as waste assessment model (WAM) and value stream analysis tools (VALSAT). The WAM results revealed three significant types of waste in the production process, namely defect, transportation, and motion. After analyzing the root causes of waste and discussing the potential improvements with the company, a reduction in total lead time of the production process from 10.03 hours to 7.8 hours and total cycle time from 7.9 hours to 6.4 hours was achieved.