

ABSTRACT

Texturized Vegetable Protein (TVP) is a product made from DSF (Defatted Soy Flour). TVP is made by extrusion process and used as meat extenders and meat analogues. PT Aneka Sarivita is one of Indonesia's largest manufacturer of TVP. Although being the largest manufacturer TVP in Indonesia, issues of effectiveness and efficiency were the main problem of the company. This machine effectiveness was measured using the Overall Equipment Effectiveness (OEE). The OEE is a systematic method to measure the level of process effectiveness of a machine or equipment with three main factors, namely Availability, Performance and Quality Rate. In general, the value of OEE is affected by six factors commonly called the Six Big Losses. The use of the OEE calculation and Six Big Losses approach is able to determine the value of OEE and the dominant factors causing the low performance of a machine or equipment. Objective of this study is to measure the effectiveness of the production process by the method of OEE, looking for the dominant factor causing low OEE value by analyzing the six big losses and make improvements to increase the value of OEE. The achievement of OEE in 2015 was lower than KPI of company. By calculating the six big losses and Pareto analysis, breakdown and defect losses were the dominant losses. Both losses were analyzed by fishbone diagram (4M + 1E method) to determine the factors that cause these losses. Once that is done the improvement plan using 5W + 1H to solve the problem of breakdown and defect losses. Increasing employee competence, standardization of materials, processes and machinery, improve system of preventive maintenance, improve spare parts control system, modifications of design of the machines and processes, improvement of working conditions, able to reduce losses and increase OEE. The conclusion of this study can increase the value of OEE although it has not reached the target of KPI in 2016. For it was proposed several methods such as the implementation of ISO 9001, Continuous Improvement, and ERP to further improve OEE.

Keywords: *Overall Equipment Effectiveness, Six Big Losses, Pareto diagrams, Fishbone Diagram, 5W 1H*

ABSTRAK

Texturized Vegetable Protein (TVP) merupakan produk yang dibuat dari tepung kedelai atau DSF (*Defatted Soy Flour*). TVP dibuat dengan proses ekstrusi dan digunakan sebagai *meat extender* dan *meat analog*. PT Aneka Sarivita merupakan salah satu produsen TVP terbesar di Indonesia. Meskipun sebagai penghasil TVP terbesar di Indonesia, masalah efektifitas dan efisiensi merupakan problem utama perusahaan. Untuk mengetahui tingkat efektifitas proses produksinya, perusahaan melakukan pengukuran efektifitas dengan menggunakan metode OEE (Overall Equipment Effectiveness). OEE mempunyai 3 faktor utama yaitu *availability*, *performance* dan *quality*. Penelitian ini bertujuan untuk mengukur tingkat efektifitas proses produksi TVP dengan metode OEE, mencari faktor dominan penyebab rendahnya nilai OEE dengan menganalisa six big losses dan melakukan perbaikan untuk meningkatkan nilai OEE. Pencapaian OEE tahun 2015 lebih rendah dari KPI perusahaan. Dengan menghitung *six big losses* dan analisis *Pareto*, *breakdown losses* dan *defect losses* merupakan *losses* yang dominan. Kedua losses tersebut dianalisis dengan *fishbone diagram* (metode 4M+1E) untuk mengetahui faktor penyebab *losses* tersebut. Setelah itu dilakukan rencana perbaikan dengan menggunakan metode 5W+1H untuk menyelesaikan masalah *breakdown* dan *defect losses*. Peningkatan kompetensi karyawan, standarisasi material, proses dan mesin, perbaikan system *preventive maintenance*, perbaikan system control spare part dan modifikasi desain beberapa mesin dan alat proses, perbaikan kondisi lingkungan kerja, mampu menurunkan *losses* dan meningkatkan OEE. Kesimpulan penelitian ini dapat meningkatkan nilai OEE meskipun belum mencapai target KPI 2016. Untuk itu diusulkan beberapa metode seperti implementasi ISO 9001, *Continuous Improvement*, dan ERP untuk lebih meningkatkan OEE.

Kata Kunci: *Overall Equipment Effectiveness*, *Six Big Losses*, *Diagram Pareto*, *Fishbone Diagram*, *5W 1H*