



UNIVERSITAS
GADJAH MADA

Identifikasi Potensi Kehilangan Minyak (*Oil Losses*) pada Air Kondensat Stasiun Sterilizer Menggunakan Metode *Statistical Process Control (SPC)* di PT Samudera Sawit Nabati Subulussalam, Aceh (Magang)

DI SUSUN OLEH AHMAD ZULPAN, N. Sufriano, M. Eng, W. Eng, Sc., Dr. Widi Affan Fajar Fajar, STP, M. Agr., Akhjar Ruspita Sari, S.T.P.

AIR KONDENSAT STASIUN STERILIZER MENGGUNAKAN METODE *STATISTICAL PROCESS CONTROL (SPC)* DI PT SAMUDERA SAWIT NABATI, SUBULUSSALAM, ACEH (MAGANG)

Oleh :

Ahmad Zulpan

RANGKUMAN

PT Samudera Sawit Nabati adalah perusahaan yang bergerak dibidang pengolahan tandan buah segar (TBS) kelapa sawit menjadi *Crude Palm Oil (CPO)*. Proses perebusan di stasiun *sterilizer* adalah salah satu proses produksi yang bertujuan untuk menghilangkan kadar air yang terdapat pada TBS menggunakan *steam*. Kualitas CPO ditentukan oleh tingkat keberhasilan pada proses perebusan di stasiun *sterilizer*. Terdapat *oil losses* pada air kondensat di stasiun *sterilizer* yang melebihi standar PT Samudera Sawit Nabati. Penelitian ini, bertujuan untuk mengetahui proses produksi pengolahan pabrik kelapa sawit yang berada di PT Samudera Sawit Nabati dan mengidentifikasi penyebab permasalahan terjadinya *oil losses* pada air kondensat di stasiun *sterilizer* PT Samudera Sawit Nabati serta memberikan rekomendasi perbaikan. Proses produksi pengolahan kelapa sawit di PT Samudera Sawit Nabati didapatkan melalui wawancara, dan observasi dilapangan, sedangkan *oil losses* distasiun *sterilizer* pada bulan Desember 2019 diidentifikasi dengan metode metode *Statistical Process Control (SPC)*. Alat yang digunakan dalam mengolah data pada metode SPC yaitu *flow chart*, *check sheet*, histogram, peta kontrol, dan diagram *fishbone*. Berdasarkan observasi dilapangan terdapat 6 tahapan proses pengolahan TBS di PT Samudera Sawit Nabati yaitu sortasi, perebusan, pelepasan buah, pengepresan, pemurnian, dan penyimpanan. Penyebab tingginya *oil losses* pada air kondensat di stasium *sterilizer* adalah metode, mesin, bahan baku, manusia, dan lingkungan. Hasil identifikasi *oil losses* pada air kondensat di stasiun *sterilizer* yaitu terdapat *oil losses* yang melebihi standar pada tanggal 2 sebesar 0,15 %, tanggal 3 sebesar 0,19 %, tanggal 4 sebesar 0,19 %, tanggal 18 sebesar 0,15 %, dan tanggal 28 sebesar 0,15 %. Persentase *oil losses* tertinggi terdapat pada tanggal 26 Desember 2019 yaitu sebesar 0,21 %. Sebaiknya perusahaan melakukan pengecekan dan perawatan secara rutin terhadap mesin *steam* atau pipa aliran turbin, guna untuk menekan terjadinya *oil losses* pada air kondensat.

Kata Kunci : Air kondensat, *Crude Palm Oil (CPO)*, *Oil losses*, dan *Statistical Process Control (SPC)*.



UNIVERSITAS
GADJAH MADA

Identifikasi Potensi Kehilangan Minyak (Oil Losses) pada Air Kondensat Stasiun Sterilizer Menggunakan Metode Statistical Process Control (SPC) di PT Samudera Sawit Nabati Subulussalam, Aceh

(Magang)

AHMAD ZULPAN, Il. Sufahno, M.Eng, M.Eng.Sc., Dr. Moh. Rifan Zafar Falaq, S.P., M.Eng., Anjar Ruspita Sari, S.T.P.

STATISTICAL PROCESS CONTROL (SPC) IN

PT SAMUDERA SAWIT NABATI, SUBULUSSALAM, ACEH
(INTERNSHIP)

By:

Ahmad Zulpan

SUMMARY

PT Samudera Sawit Nabati is a company engaged in the processing of palm oil Fresh Fruit Bunches (FFB) into Crude Palm Oil (CPO). Boiling process in sterilizer station is one of the production process that aims to eliminate water content contained in FFB using steam. The quality of CPO is determined by the success rate of the boiling process at the sterilizer station. There are oil losses in condensate water in sterilizer stations that exceed PT Samudera Sawit Nabati's standards. This research aims to find out the production process of oil palm plant processing located at PT Samudera Sawit Nabati and identify the causes of the problem of oil losses in condensate water at pt Samudera Sawit Nabati sterilizer station and provide improvement recommendations. The production process of palm oil processing at PT Samudera Sawit Nabati was obtained through interviews and observations in the field, while oil losses at sterilizer station in December 2019 were identified by Statistical Process Control (SPC) method. The tools used in processing data on the SPC method are flow chart, check sheet, histogram, control map, and fishbone diagram. Based on observations in the field there are 6 stages of FFB processing process at PT Samudera Sawit Nabati namely sorting, boiling, fruit release, pressurization, purification, and storage. The causes of high oil losses in condensate water in stasium sterilizers are methods, machinery, raw materials, humans, and the environment. The identification result of oil losses in condensate water in sterilizer stations is that there are oil losses that exceeded the standard on the 2nd by 0.15 %, the 3rd by 0.19 %, the 4th by 0.19 %, the 18th by 0.15 %, and the 28th by 0.15 %. The highest percentage of oil losses was on December 26, 2019 at 0.21 %. The company should conduct regular inspection and maintenance of steam engines or turbine flow pipes, in order to reduce the occurrence of oil losses in condensate water.

Keywords: Condensate Water, *Crude Palm Oil (CPO)*, *Oil losses*, and *Statistical Process Control (SPC)*.