

**PERHITUNGAN OVERALL EQUIPMENT EFFECTIVENESS DAN SIX BIG  
LOSSES SEBAGAI PENERAPAN PROGRAM TOTAL PRODUCTIVE  
MAINTENANCE PADA STASIUN PENGGILINGAN TEBU  
PT MADUBARU PG MADUKISMO**

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**ABSTRAK**

PG Madukismo merupakan pabrik gula yang berlokasi di Bantul, Yogyakarta. Industri ini memiliki musim giling (masa pabrik beroperasi) dan masa luar giling (masa pabrik tidak beroperasi dan berfokus untuk kegiatan perbaikan mesin). Namun kenyataannya, pada musim giling masih terdapat banyak kerusakan mesin yang menyebabkan waktu berhenti operasi, Stasiun penggilingan menjadi objek penelitian ini karena stasiun penggilingan memiliki *downtime* mesin tinggi serta stasiun ini sangat vital bagi keseluruhan proses produksi gula, Pengukuran kinerja mesin dilakukan menggunakan metode *Total Productive Maintenance* mencakup perhitungan *Overall Equipment Effectiveness* (OEE), *six big losses*, dan pemunculan solusi melalui bantuan analisa kualitatif menggunakan diagram pareto dan diagram ishikawa. Penelitian ini dilakukan pada tanggal 8 Mei 2017 hingga 26 Juli 2017. Hasil perhitungan yang diperoleh adalah nilai *Availability Ratio* sebesar 96,08%; nilai *Performance Ratio* sebesar 83,42%; nilai *Quality Ratio* sebesar 98,99%; dan nilai OEE sebesar 79,43%, Hasil tersebut masih berada di bawah standar OEE *World Class* yaitu 85%. Hasil diagram pareto terhadap *six big losses* menunjukkan *losses* penyumbang *downtime* tertinggi yaitu *reduced speed losses* dan *breakdown losses*. Penyebab terjadinya *losses* yaitu kurangnya pemahaman pekerja, gejala kerusakan yang sulit dideteksi, dan mesin yang sudah tua. Berdasarkan simpulan hasil penelitian ini direkomendasikan untuk menentukan standar operasi yang lebih baik, pembuatan *manual book*, memasang alat pendeteksi kerusakan, melakukan penelitian lebih lanjut mengenai rentang waktu antara terjadinya kerusakan, dan mengganti mesin yang sudah tua dengan mesin baru.

**Kata kunci:** *Overall Equipment Effectiveness, Penggilingan, Six Big Losses, Total Productive Maintenance*

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**MEASURING OVERALL EQUIPMENT EFFECTIVENESS AND SIX BIG  
LOSSES AS TOTAL PRODUCTIVE MAINTENANCE PROGRAM  
APPLICATIONS IN CANE MILLING STATIONS IN PT MADUBARU PG  
MADUKISMO**

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**ABSTRACT**

PG Madukismo is a sugar factory located in Bantul, Yogyakarta. This industry has two seasons namely “musim giling” (during plant operation) and “musim luar giling” (when the plant does not operate for conducting engine repair). But in reality, there are many maintenance activity in “musim giling” that causes the operating time to stop. The milling station is the object of this research because the milling station has high engine downtime and this station is vital for the whole sugar production process. The method to measure the effectiveness of milling machine is Total Productive Maintenance that includes Overall Equipment Effectiveness (OEE), six big losses, and to support the evaluation result it is need a qualitative analysis using Pareto Diagrams and Ishikawa Diagrams to get the best repair strategy. The data that used is data for the period May 8 to July 26, 2017. During that period, the availability rate is 96,08%; the performance rate is 83,42%; the quality rate is 98,99%; so the value of OEE is 79,43% that has not reach the OEE World Class is minimal 85%. Pareto diagram results against the six big losses show the highest contributing losses are reduced speed losses and breakdown losses. The causes of losses are lack of understanding of workers, machine’s damages that difficult to detect, and old machines. The proposed improvement strategies among others, to determine better operating standards, making milling machine’s manual books, installing machine damage detectors, conducting further researc on the time span between the occurrence of damage, and replacing old machines with new machines.

**Keywords: Milling, Overall Equipment Effectiveness, Six Big Losses, Total Productive Maintenance.**

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