

ABSTRACT

PT. Perkebunan Nusantara is a company that produces black orthodox tea in Indonesia. Because of the high demand for exports, makes the demand of this tea product become high. With the high demand for tea requires the machine to always operate properly. DIBN (Double Indian Ballbreaker Net Sorter) machines are often damaged and have high level of downtime in the Production Department on "Layuan & Giling" workstation. It cause to a low level of machine's availability in the Production Department.

Life Cycle Cost method is needed to know the number of maintenance crew and optimal retirement age of the machine. Another method that can be used is Overall Equipment Effectiveness. Overall Equipment Effectiveness method is used to measure the performance and level of machine effectiveness. Hereafter, the analysis of the six big losses to determine what factors cause the value of Overall Equipment Effectiveness is low.

Based on Life Cycle Cost method, the minimum life cycle cost is Rp.66,632,538.17 with the retirement age of DIBN machine is three-year, and consisting of 3 maintenance crew. Based on the Overall Equipment Effectiveness method, the value of Overall Equipment Effectiveness of DIBN machine is 34.49%. The results are still far from the standard set by the Japanese Institute of Plant Maintenance of 85%. From six big losses, it is known that the most influential factor to decrease the effectiveness of DIBN machine is idling and minor stoppages factor (22.87%) and rework losses (10.52%).

Keyword : Life Cycle Cost, Retirement Age, Maintenance Set Crew, Overall Equipment Effectiveness, Six Big Losses