

ABSTRAK

Untuk mencapai kelacaran dalam proses produksi, menjaga kondisi mesin agar efisien, efektif, ekonomis, dan optimal perlu dilakukan dengan melakukan kegiatan pemeliharaan mesin. Pemeliharaan mesin yang dilakukan perusahaan masih belum optimal, karena mesin masih sering mengalami kerusakan yang mengakibatkan cacatnya produk yang dihasilkan. Penelitian ini akan dilakukan dengan pendekatan TPM (Total Productive Maintenance) yang berfokus pada pilar preventive maintenance. Tujuan dari penelitian ini adalah mengukur dan menganalisa efektivitas mesin washing, filling, dan capping botol dengan perhitungan OEE dan six big losses, mengukur dan menganalisa perbandingan reliability dan biaya pada failure maintenance dan preventive maintenance, serta membangun dan menerapkan autonomous maintenance, preventive maintenance, dan training. Pada perhitungan OEE dan six big losses, diperoleh nilai OEE yang masih dibawah standart yang disebabkan oleh reduce speed losses dan breakdown losses. Kedua losses tersebut dianalisa menggunakan diagram sebab akibat. Selanjutnya dilakukan penentuan komponen kritis berdasarkan frekuensi kerusakan dan FMECA. Komponen kritis yang terpilih adalah gear as capper yang kemudian akan dilakukan perhitungan MTTR dan MTTF untuk memperoleh waktu penggantian dan pemeriksaan pencegahan dan dilakukan perhitungan reliability dan biaya pada failure maintenance dan preventive maintenance untuk mengetahui apakah preventive maintenance layak diterapkan. Perhitungan reliability pada komponen gear as capper menunjukan waktu pencegahan dapat meningkatkan keandalan komponen, dan pada perhitungan biaya diperoleh penghematan biaya sebesar 80% pada preventive maintenance, sehingga preventive maintenance layak untuk diterapkan.

Kata kunci: *OEE, Six Big Losses, FMECA, MTTR, MTTF, Reliability*

ABSTRACT

To Achieve continuity in the production process, maintaining the machine condition to be efficient, effective, economic, and optimal is necessary by doing machine maintenance activity. Machine maintenance that done by the company was not optimal, because the machines often having breakdown which result in defect of the output products. This research will be doing by TPM (Total Productive Maintenance) approach that focusing on preventive maintenance pillar. The purpose of this research are to measure and analyze the effectiveness of the washing, filling, and capping bottle machine, to measure and analyze comparison of reliability and cost for failure maintenance and preventive maintenance, and to build and implementation of autonomous maintenance, preventive maintenance, and training. On the OEE and six big losses calculation, obtained that OEE value is still under standard which are caused by reduce speed losses and breakdown losses. Those two losses are analyzed by cause and effect diagram. Next, determination of critical component is made by breakdown frequency and FMECA. The chosen critical component is gear as capper which will calculate the MTTR and MTTF to obtain replacement and preventive checks time and do the reliability and cost calculation on failure maintenance and preventive maintenance to find out if the preventive emaintenance worth to apply. The reliability calculation of the gear as capper component shows that the preventive time can increase the reliability of the component, and the cost calculation shows 80% cost savings, so preventive maintenance is worth to apply.

Keywords: OEE, Six Big Losses, FMECA, MTTR, MTTF, Reliability