

ABSTRACT

PT XYZ is one of the state-owned companies engaged in manufacturing pharmaceutical products that produces 2 types of products, namely herbal and pharmaceutical drugs, using the make-by-order method. In the blistering process (primary packaging) for herbal production, there are problems found related to the effectiveness of the packaging process, which will be the focus of research because in this process, periodic machine maintenance is not optimal, so that product work cannot be controlled properly, and the machine operates not optimally. The machine used in the packaging process is the Duan Kwei Machine which functions to package herbal products with polycell (roll) printed packaging on the type of caplet. The method used to evaluate Duan Kwei's machine is Total Productive Maintenance (TPM) to maximize the effectiveness of the machine working, and the efficiency of Duan Kwei's machine is analyzed using the Overall Equipment Effectiveness (OEE) method. The calculation of six losses or Six Big Losses is used to find out what factors most influence the low OEE value, such as Equipment Failure, Setup, and Adjustment Losses, Idling and Minor Stoppages, Reduce Speed Losses, Process Defect Losses, and Reduced Yield Losses. Based on the results of the OEE calculation, the OEE value on the Duan Kwei machine in January - December 2021 is 59.86%, which means the OEE value is still below the standard from the Japan Institute of Plant Maintenance of 85%. The low OEE value is due to the low availability rate and performance efficiency. Based on the calculation of the six big losses to determine the losses that arise from the production process, there are two dominant loss factors that have the most influence on the effectiveness of the Duan Kwei machine, namely the high value of reduced speed loss and idling and minor stoppages loss. The reduced speed loss and idling and minor stoppage loss values are 35% and 18%, respectively. The cause of the low effectiveness of the machine based on the cause-and-effect diagram (fishbone) is influenced by human factors, machines, methods, and materials. The low OEE value can be used as an evaluation to be able to increase the effectiveness of the Duan Kwei machine with an integrated system design in the form of a machine maintenance design. Maintenance of this machine is based on Total Productive Maintenance (TPM). The pillars of TPM that will be used to overcome the problem of the low effectiveness of the Duan Kwei machine are autonomous maintenance and planned maintenance at PT XYZ.

Keywords — *Duan Kwei Machine, Overall Equipment Effectiveness, Six Big Losses, Total Productive Maintenance*