ABSTRACT

Since several years ago, market demand for fishery products increases continuously, so that fish processing industry, mainly operated by small-medium enterprises grow fastly. One of them is processing of fish jelly products, such as otak-otak, fish ball, siomay, dragon legs, fish sausages, fish nugget, etc. CV. X is medium scale company engaged in processing and marketing of fish jelly products located in Depok City, Province West Java. As a medium scale company, CV. X have limited capital so that in the production unit still found old production machinery and equipment without adequate maintenance. This cause the production process often disturbed because of height level downtime, that is stop time operation because various things that are not unexpected. In relation with this problem, it is necessary to study for designing effective maintenance system that could be applied easily to small and medium enterprises to ensure smoothness of production process. The object of this study is fish grinding machine consist of cutter machine, chopper machine I, and chopper machine II used in the fish processing plant of CV. X. Method research used in this research are measurement of Overall Equipment Effectiveness (OEE) and Overall Equipment Cost Loss (OECL), determining factor of six big losses which causes drop machine effectiveness, and designing a system maintenance to improve machine effectiveness. Data used are machine hours, machine downtime, machine theoretical cycle time, machine production, machine production time, and quantity of product defects during period of January until December 2021. Research results show that OEE value of fish grinder in CV. X is still below than world class standard. The OEE value of cutter machine by 35.90%; chopper machine I by 71.98%; and chopper machine II by 74.56%, while world class standard is 85%. The OECL value of three fish grinding machine is amounting by Rp 1,088,721,342,-, originated from OECL value of cutter machine by Rp. 462.758.314,- OECL value of chopper machine I by Rp. 410,400,337,- and OECL value of chopper machine II by Rp 215,562,691,-. Factors of six big losses those influence effectiveness of fish grinding machine are reduce speed losses, setup losses, breakdown losses, and idling and mirror stoppage losses. Those data describe that usage of fish grinding machine on CV. X is not effective, so that

cause loss potential income of company by Rp 1,088,721,342,-. This condition will not occur if company apply a good maintenance system. One of appropriate maintenance system that designed to improve effectiveness of cutter machine, chopper machine I, and chopper machine II is apply the Total Productive Maintenance (TPM), especially autonomous maintenance. The results of this research are beneficial for CV. X and other companies, government, and other researchers another. For CV. X, the result of study could be used as a reference for change the maintenance system applied this that is corrective maintenance becomes planned maintenance system. Whereas for government, results of study could be used as material for socialization and guidance to small and medium enterprises about the maintenance system of production machinery and equipment. For other researcher, result of study could be used as reference for similar study that will be carried out in next day.

Keywords _ — OEE, OECL, six big losses, fish grinding machine