

ABSTRACT

PT XYZ is an upstream sector company focusing on the production of Crude Palm Oil (CPO) and High Acid Crude Palm Oil (HACPO) in Riau. This study focuses on the HACPO production process, particularly on issues that arose during production from January to May 2024. One identified defect is the high water content in HACPO products, which is related to problems in the clarification process.

To analyze the problem, the DMAI (Define, Measure, Analyze, Improve) analysis was used. Through fishbone analysis, several causes of the problem were identified. Among various causal factors, this study focuses on the issue of the absence of a maintenance schedule and the fact that the machines used had never undergone maintenance before. This issue is crucial as the machines directly impact the quality of the produced goods.

To address the problem, the Quality Function Deployment (QFD) method and product development were used to design a solution in the form of a support tool. The proposed solution is a Maintenance Alarm system, designed to provide reminders for maintenance and calibration through audible alerts. The tool generates corrective maintenance alarms based on detected inconsistencies in the temperature and pressure of the machinery used in the production process. Operators can manually set the schedule, while the Maintenance Alarm can also automatically plan preventive maintenance.

The implementation of this Maintenance Alarm design is expected to improve the quality of HACPO products and reduce the number of defects occurring during the production process. The implementation of this tool is also expected to enhance the overall operational efficiency of the company by ensuring that the machines used are always in optimal condition.

Keyword – Defect, HACPO, clarification, maintenance, QFD, product development, Maintenance Alarm