

ABSTRACT

PT XYZ is a company that produces various types of incense, one of which is black incense. Based on the company's production data, there were a number of product defects during the production process for the period January 2020 to May 2021 with four types of defects, namely falling out, cracking or smudging, sticking, and breaking. The percentage of defective products exceeds the tolerance limit set by the company, which is 2% . There are seven stages of the process that take place in the production of black incense starting from kneading the sticky flour, mintage of incense, drying 1, drying 2, quality control, weighing, and packaging. Defects that arise can occur because the production process has not met the CTQ of the process. The four defects appear in three processes, namely kneading sticky flour, mintage of incense, and drying 2. This research will provide a solution in the form of designing a drying rack that can be used in the drying process 2. This solution was chosen because it is able to overcome problems in the system components of man, machine, and information . Problem solving is done using the DMAI method (define, measure, analyze, improve). At the define stage, identification of product CTQ, process stages, process CTQ, identification of problems that occur. In the measure stage, process stability and process capability are calculated. At the analysis stage, identification is carried out regarding the CTQ process that is not fulfilled and the source of the problem is identified using a fishbone diagram and 5 why's. From the source of the problem, an analysis of improvement priorities is then carried out using the FMEA tool. In the improve stage, the proposed product design is in the form of a drying rack using the Ergonomic Function Deployment (EFD) method. The proposed drying rack specification has a length of 150 cm, a height of 150 cm, and a width of 60 cm. The drying rack is designed to have 4 levels with the frame material using hollow mild steel and the bulkhead material using Dutch teak wood. Each level of the shelf will be equipped with paper that serves to record the drying time. At the bottom of the shelf is also equipped with wheels for easy transport.

The results of the proposed drying rack product design will help reduce the number of defects in the company by 57.26% and increase the sigma level value from 3.93 to 4.13.

Keyword: DMAI, Defect, CTQ, EFD, EASNE