ABSTRACT

CV WK is a company engaged in the production of plastic-based, especially the bottle cap. The bottle cap is made of polymer pellets with HDPE (High-Density Polyethylene) polymer type and polymer pellets dye with Master bed dye type. One of the products routinely produced by CV WK is the AHM blue oil bottle cap. According to historical data of AHM blue oil bottle cap production from January to October 2016, it is found that the average percentage of defects is 2.21%. The average exceeds the tolerance limit given by the company that is 2%. There are 3 types of defects that occur in the production process of AHM blue oil bottle cap, a hole on the top side of product, white spot on the top side of product, and the product is not shaped. The most defective type is the top of the hole defect. Therefore, this study is using the six sigma method to reduce the occurrence of defects of the top AHM oil bottle hole bottle. Stages in six sigma are DMAIC (Define, Measure, Analyze, Improve, Control). But this study is only up to the stage of improving method. In the define stage, there are 5 potential CTQs that affect the quality of the product. In phase measure, the process stability measurement is done using the control chart p and process capability calculation (DPMO and sigma level). In the analyze stage to give the proposed improvement to reduce defects, conducted root cause search using fishbone diagram tools, and 5 why's. FMEA analysis was then performed to determine the priority of improvement of 2 factors causing the defect. At the improve stage, is given the suggestion to minimize the defect. The proposed suggestion are scheduling of maintenance for the parts put on the injection machine at certain time intervals to clean or change the part before the 19th days after the breakdown and making the schedule of maintenance for a year.

Keywords: Six Sigma, DMAIC, CTQ potential