

ABSTRACT

CV XYZ is a company engaged in the supply of animal feed raw materials. The raw materials processed for the manufacture of animal feed are coffee husks, cassava, palm oil cake, copra meal, and rice bran. The problem that was found during the field study was that dust from the production of food raw materials was flying around, this caused financial losses and health losses. CV XYZ noted that unsold production dust is loss goods and the one that suffers the most loss is coffee skin grinding and can reach up to 5.7%. CV XYZ is currently using a cyclone separator as a solution to minimize dust from animal feed production. To optimize the productivity of CV XYZ, a proposed cyclone separator design was created.

In this research, it is necessary to conduct a study in the form of a simulation on the proposed cyclone separator design to identify the performance of the proposed cyclone separator. The purpose of doing the simulation is to describe the situation of the proposed cyclone separator in the real world which is done mathematically and then get conclusions and decisions obtained from the simulation results. In this research, computational fluid dynamic (CFD) modeling was carried out. After modeling, several parameters will be analyzed, namely velocity and pressure.

Keywords: *Cyclone separator, simulation, computational fluid dynamic (CFD), velocity, pressure.*