

## ABSTRACT

Telkom University is one of the campuses that participate in the green metric program organized by the University of Indonesia campus, and the program is an activity for greening and environmental sustainability. One way to make compost is by using dry leaves; the waste is mainly found there. The problem in this study is the fertilizer production process at the mixing stage, which still uses conventional tools. Hence, fertilizer production never reaches the target, and the position of workers needs to be more ergonomic when mixing.

Therefore, a solution was made in this study, namely making and testing an automatic fertilizer mixing machine using the Set-Based Concurrent Engineering (SBCE) method and the Rapid Entire Body Assessment (REBA) method as a reference for making the machine.

Three references of mixer machine designs were taken in the design according to the implementation of Set-Based Concurrent Engineering (SBCE). An automatic fertilizer mixer machine was formed with a motor drive powered by 1100 watts of electricity, and the main material was mild steel. In the design, the worker's body posture was assessed using the Rapid Entire Body Assessment (REBA) method with an analysis value of 3, which indicates that the machine is good to use.

**Keywords: Set-Based Concurrent Engineering (SBCE), Rapid Entire Body Assessment (REBA), and Automatic Fertilizer Mixer Machine**