Simulation and analysis for harvesting Dioscorea hispida tubers

ABSTRACT

This study discussed an analysis and simulation of fixture stand structure that will use for data collection of force required for harvesting the tubers of Dioscorea hispida. The tubers were surrounded by roots which were well gripped to the soil which made harvesting process difficult. Therefore, a new tool fixture equipped with digital force gauge device to gripped stem dioscorea hispida is required. Imada digital force measurement gauges are state-of-the-art, instruments capable of the highly accurate measurements required in quality testing to determine the strength or functionality of a part or product. The information from the experiments is used to model and simulate the tool in Computer Aided Design (CAD) environment. The solid modelling software Solidworks was used for the design, modelling and simulation of the equipment and the finite element analysis to determine the stress affected on various fixture designs.

Keyword: Agriculture; Digital force gauge; Discorea hispida (ubi gadong); Mechanical analysis; Simulation; Solidworks