

ABSTRACT

The process of threshing rice using a power thresher can increase rice productivity up to 10-15 kg/hour. This study aims to design a rice thresher that uses solar energy as the motor's driving energy. The research method used is an experimental method consisting of several stages that outline starting from planning, conceptualizing, designing, and finalizing. In making the machine construction, the design and calculation of the strength of the materials and machine elements used are first carried out as well as the design of maintenance and assembly with the aim of knowing the source and capacity of the driving motor needed and having specifications with dimensions of a 200 cm high rice thresher, width 50 cm, length 80 cm, with a rice threshing drum diameter of 23 cm, length 60 cm, and threshing tooth length 6 cm, for the suya panel holder height 4 cm, width 55 cm, length 101 cm, with a solar panel tilt plane of 45°. dimensions of the component machine used. Based on the results of the calculation of the appropriate motor power to be used is an AC motor with a power of 1/4 HP. The solar panel required is one that can produce 160 wp of energy using a dry battery with a specification of 12 Volt / 100Ah. To convert direct current (DC) to alternating current (AC) an inverter and a 10A solar charger controller are used to control battery charging. The results of this design obtained a rice threshing machine model that is ready for production.

Keywords: Rice, Rice Thresher, Solar Panel