

**Performance Test of the Solar Powered Grass Chopper Machine at the  
Animal Husbandry of Politeknik Negeri Jember**  
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***ABSTRACT***

The need for national food in Indonesia is increasing every year, especially the need for animal food. In 2020, consumption of protein from animal food was recorded at 21.29 grams or 34.3% (grams/capita/day). This number increased by 1.14% compared to 2019 which reached 21.05 (grams/capita/day). The livestock sub-sector is one of the sub-sectors that contributes to increasing the fulfillment of calories and animal protein. To increase the production of ruminant livestock, it must be followed by the provision of sufficient forage feed and carried out regularly . Forage must be chopped and chopped using tools. This study aims to determine the performance of the Off-grid PLTS performance system and determine the capacity of grass that can be produced by a solar-powered Grass Chopper Machine . This tool functions 1) to assist breeders in chopping and chopping grass efficiently, saving time and saving energy; 2) can operate easily because it is equipped with a switch; 3) saving energy because this tool utilizes renewable energy as a fuel and supplier of electrical energy; 4) does not require a reference voltage from PLN because this tool uses an off-grid PLTS and uses a battery to store energy; 5) has sufficient chopped yield capacity to assist breeders in providing forage. The results of the performance test show that the solar-powered Grass Chopper Machine has a Performance Ratio of 85%. The results of this performance ratio value are ideal because the ideal Performance ratio ranges from 70% -90%. With an average battery charging voltage and current of 13.2 V and 6.0 A with a battery charging time of 16.6 hours. The performance test results for the capacity of the Grass Chopper Machine are 68 kg/120 minutes.

**Keywords:** grass chopper, off-grid PLTS , productivity, machine capacity