

DESIGN AND EVALUATION OF A MANUALLY OPERATED
FORAGE CHOPPER

A Thesis

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BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING



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ABSTRACT OF THE THESIS

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The study was conducted to design and evaluate the performance of the manually operated forage chopper. The fabrication was done at a local welding shop in Mina, Iloilo on May 4 to 11, 2009 and the performance testing and evaluation were conducted from May 13 to 14, 2009 at Brgy. Cabalabaguan, Mina Iloilo. The forage chopper consists of the feed hopper, handle, discharge chute, flywheel and cutting rotor as major components. It chops forage materials into short parallel lengths. Operation of the shredder starts from loading forage material into the feeding hopper. The materials are cut by shearing action of the cutting blades of the machine. Performance evaluation of the forage chopper revealed that it can easily chop 2 kg of swamp cabbage in an average of 35 sec operating time at an approximate speed of 60 rpm. It has a chopping capacity of 3.49 kg/min at 10 min/day operation, just enough to provide the forage needed for backyard raising, The machine has a chopping efficiency of 93.33% producing chopped materials with an average length of 1.42 in. Data show that the forage chopper can be fabricated using locally available materials. It has an investment cost of P4,000.00 The fixed and variable costs per day amounted to P7.35 and P25, respectively, giving a total cost of P32.25 per day. The cost incurred in operating the machine is P0.93 per kg of forage material.

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