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OPMENT, CONSTRUCTION AND TESTING OF A
PEDAL OPERATED MULTI-CROP CHIPPER

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L DEVELOPMENT, CONSTRUCTION AND TESTING OF A
PEDAL OPERATED MULTI-CROP CHIPPER

An Undergraduate Thesis
Presented to the Faculty of the
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Major in Crop Processing



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ABSTRACT

CERDENIA, ENRIQUE CABRELA JR., Don Severino Agricultural College, Indang, Cavite, April, 1992. DEVELOPMENT, CONSTRUCTION AND TESTING OF A PEDAL OPERATED MULTI-CROP CHIPPER Adviser: Engr. Conrado Baltazar.

A study was conducted at Alulod, Indang, Cavite to develop, construct and evaluate a pedal operated multi-crop chipper.

The chipping machine was constructed for five days with a labor fee of ₱750.00 . The materials for the construction cost ₱671.00 . All in all the chipping machine cost ₱1421.00 including the labor fee.

Three different crops were used in the evaluation of the machine. The crops were gabi, cassava, and sweet potato.

Result showed that chipping capacity greatly varies for the different crops. With the use of the machine the capacities obtained were as follows : for gabi 152.10 kg./hr., for cassava 97.12 kg./hr, and for sweet potato 92.77 kg./hr., while the machine efficiencies were 93% for gabi, 85% for cassava and 83% for sweet potato.

The highest chipping capacity was obtained from gabi and the lowest chipping capacity was obtained from the sweet potato. The damaged and undamaged chips were affected by the clearance of the cutting blade . Based on the results there is a need of modifying the angle of steepness of the blade

to the direction of cut.

Cost analysis of the machine showed relevance to the small scale farmers and producers. It has a payback period of 22.9 days annual net income of ₱22,170.00, by chipping at eight hours per day.

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INTRODUCTION

Root crops specially casava, gabi and sweet potato are popularly known as good food substitute for rice which is the staple food of the Filipinos. Because of this importance, ways of improving its production have been necessary. Such improvement is brought about by the use of modern agricultural technology, and also by the introduction of new varieties as well as employment of some improved practices. However, the increase in production may not significantly increase food availability nor uplift the social economic condition of the farmers. Through processing, the utilization of root crops can be maximized in the sense that it provides a vast array of stable food products.