

## ABSTRACT

This study primarily intended to design, fabricate and evaluate a buko machine. It specifically aimed to design, fabricate and evaluate the buko machine in terms of output capacity, efficiency, output quality, and electrical energy consumption. The designed buko machine was based on the researchers' ideas and suggestions of the thesis Advisory Committee, and from the existing designs from the internet. The fabrication of this machine was done at San Pedro, Pontevedra, Capiz. It was limited to processes such as lay-outing, cutting, welding, riveting, boring, assembling, sanding, pre-testing, and painting. The buko machine was tested at the Department of Agricultural Engineering Shop at Bailan, Pontevedra, Capiz. The testing of machined involved three trials for trimming young coconuts, three trials for punching young coconuts and three trials for slicing young coconuts. The test materials used were newly harvested young coconuts. The statistical tools used were the mean and coefficient of variation. After testing the machine, data revealed that the buko machine can trim, punch and slice 50, 51 and 52 pcs/hr buko of Laguna Tall, Yellow Malian Dwarf and San Ramon varieties, respectively, and has a maximum efficiency of 97 percent, and electrical consumption of 0.1250 kw-hr/pc. The custom hiring fee was 1.05 Php./pc, the recovery period of investment 11 months, and the break even use 189.38 pcs/hr.

*Keywords: Buko, Trimmer, Puncher, Slicer.*