ABSTRACT

This research discusses the processing of coconut meat into coconut milk. Before going to grating process, the coconut was separated from it's shell and skin, then coconut enters the grating process where the coconut was processed to form a complete grater. After the coconut was grated, the coconut put into a press machine. In a extracting machine, the grated coconut passing the extracting process. Grated coconut was pressed until the coconut milk comes out. The process was repeated until the grated coconut completely drained. In both processes, surely there would be a problems occur. For example in the grating process, the fingers of coconut workers were often got injured because during the grating process the coconut must be pressed. After coconut had been grated, coconut removed and transferred to a press machine. This requires quite a lot of energy because the results of grated coconut as much as one bucket or about 10 kg. To overcome this problem, this research discusses how to make a hybrid coconut processing machine that is able to grate and extracting without lifting the shredded coconut. This research uses a reverse engineering method by using a redesign to design a hybrid coconut processing machine model. After processing the data, the results obtained from the selection of 16 concepts of hybrid coconut processing machine. The stages of the concept of assessment are carried out to determine the final design of the chosen alternative concepts and then made a prototype of a hybrid coconut processing machine that is able to grate and extracting coconut milk at the same time without being able to lift or use the grated coconut to the press. From the results of testing the prototype machine, the data shows that this research machine produces more coconut milk than the existing machines. The average amount of coconut milk that traditional market produce is 0.6 kg from 1 kg of coconut while this research produced 0.76 kg of coconut milk from 1 kg of coconut . And the comparison percentage of productivity capacity is 4.62% better than previous research machines.

Keywords: *coconut grater machine, coconut milk extracting, Reverse Engineering, redesign, Autodesk Inventor*