

ABSTRACT

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People are still using manual way to separate coconut flesh and its shells by splitting coconut fruit and peeling its shell with a machete. The manual way will consume lot of time thus inefficient when this method is employed for copra and grated coconut because of long working process but with less productive result.

This final project report will discuss about the material and strength calculation of frame construction of coconut shells peeler machine. The applied material is ST 37 angle bar iron with the size of 2 x 30 x 30 mm, where the height is 60 cm, width of 15 cm, and height of 50 cm. The main motor is using electric engine with power of 15 hp, transmission system made of v – belt and pulley under ratio of 5 : 1 and machine capacity of 100 pieces/hour. .

The components being observed in this construction are edge frame for its electric motor mount and its gearbox. For the next step is the design process where covers of drawing design and calculation design. These steps are necessary to select the appropriate components that will be used in this final project.

As final stage the writers conduct assembly process and machine testing. The calculation from its frame structure obtained the tension of 2.2 kg/mm^2 . This tension number does not over limit the permitted tension of 30.833 kg/mm^2 therefore this result is considered to be safe. The machine capacity is 100 pieces/hour.

Keywords: Coconut Shells Peeler Machine, Material, Frame, Material Strength, Tension, Production Output