



BANALOP : GREEN BANANA SKIN PEELER

PATENT NO. PI2019004357

BRIEF TECHNOLOGY

Nipah banana peeler (BANALOP) was invented to peel the green *Nipah* banana skin to expedite the process of banana chips processing. The design is developed to assist workers for easy peeling process of the green bananas which resulted in higher productivity. The tool comprises of two mechanisms which are the slitter and peeler. Slitter which is able to cut the edge of green banana without penetrating the pulp and by following the longitudinal curvy line for easy peeling process.

Separator which separates the skin easily without major loss in the pulp and shorten the peeling process

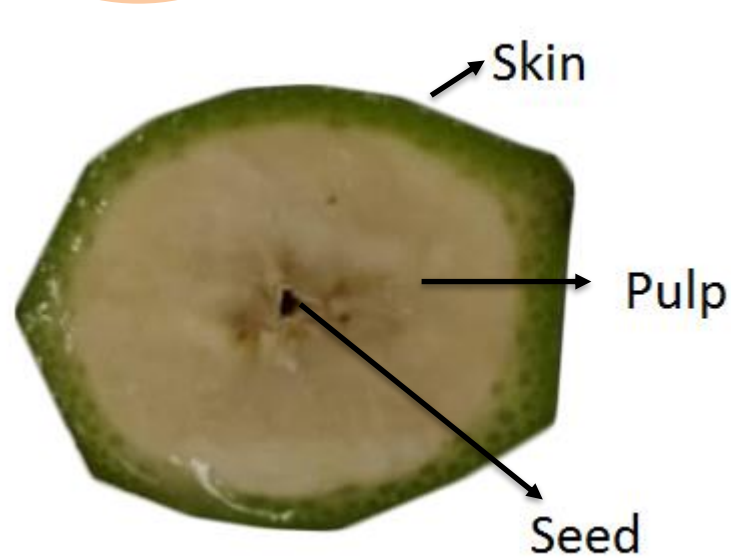


Table 1. Peeling efficiency with different blade thickness through ripening days

Day	Peeling Time (s)		Pulp Loss Percent (%)	
	Blade Thickness (mm)			
	1.2	1.5	1.2	1.5
1	39.67	39.00	1.89	0.42
2	32.67	40.00	0.00	0.52
3	30.33	33.67	0.38	1.10
4	27.33	31.00	0.10	0.00
5	26.00	21.67	0.29	0.93

PROBLEM STATEMENT & CURRENT ISSUES

- 01 Survey reported by Auni and Khairol (2006) stated that the banana chips production is only at 59% despite its standard production of 113.8 tonnes per month
- 02 Manual peeling method can only process 60 bananas in an hour for one worker with average weight of approximately 5kg, resulted in slow production process
- 03 Manual operation, which uses kitchen knife and hand, resulted in slow and dreary peeling process as the sap in the banana peel makes it sticky for the worker
- 04 Automated machine is not suitable as it cause pulp damage as well as costly

INVENTIVENESS & NOVELTY

The invention provides fast and convenient peeling process of green banana as compared to the conventional method, and labor cost effective.

USEFULNESS & APPLICATION

- A V-sharp cutter with guided plate for cutting of banana plane edge
- A blunt yet thin blade properties to penetrate between the skin and pulp, and to separate them
- A frame which hold the tools and ability to modify the position in fulfilling a high ergonomics requirement

IMPACT OF THE PRODUCT

- Shorten peeling time by more than 60%
- Reduce pulp damage by 10% during peeling process, as the tool is specifically designed based on the banana properties
- Labor cost effective
- Easy to use and portable as the tool is small and lightweight

MARKET POTENTIAL

The intended market for this product is for the small medium enterprise which produces banana chips.

TRL : 5 – Validation in real environment



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