

PineBaby: Organic liquid cleanser formulated using bromelain from pineapple byproducts

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PRODUCT BACKGROUND

Cleaning agent

PineBaby organic liquid cleanser is responsible as cleaning agents that help to remove milk fats and spot dirt on the feeding bottles, toys and baby accessories without any affect on the equipment surface and its functionality.

Safe and Biodegradable

PineBaby organic liquid cleanser is formulated using plant-based and biodegradable ingredients and

Remove 99.9% of bacteria

Effectively kills 99.9% of bacteria. Baby care from day 1

Contain bromelain

Pineapple by-products (stem, core, crown and peel parts) - source of proteolytic enzyme (bromelain). Higher demand in pineapple industry - huge pineapple by-products generations

PRODUCT BENEFITS

Washing baby bottles with soapy water alone doesn't always remove ground in milk protein residues which can cause baby stomach upsets. You have to keep your babies safe by ensuring their feeding tools and accessories are completely clean without worrying about harmful chemicals and fragrances.

SAFE CLEANER

PineBaby organic liquid cleanser could be a safe cleaner to use once cleansing baby's item.



ECONOMIC IMPACT

Literacy can reduce the cost for buying new baby bottles, nipple and accessories. Can also reduce the cost for baby health issues

PREMIUM NATURAL OR PLANT-DERIVED INGREDIENTS

This product is plant-based mostly, anti-bacterial, non-toxic, biodegradable, folks friendly and earth friendly. It's even gentle to the hand of someone who washes baby's feeding bottles and accessories.

GIVE ADDED VALUE TO PINEAPPLE WASTE IN MALAYSIA

STATUS OF INNOVATION

- Market Readiness (TRL 7)
- 200 bottles produced for market survey analysis
- Patent filling number have been received

COLLABORATION ACHIEVEMENT



Third winner in Mudaprenuer@HE program 2020

PRODUCT CHARACTERISTICS

- Eco-friendly biodegradable formula
- Help in effective cleaning
- Food grade ingredients
- Contain anti-microbial agent

NO FRAGRANCE SLS/SLES FREE PARABEN FREE PLANT-BASED

PRODUCT UNIQUENESS

- PineBaby is the first product produced from pineapple waste to be used as organic liquid cleanser for baby product (IP No: UI2020004313)
- Safe to baby while capable to remove 99.9% bacteria.
- Effectively hydrolyze protein stains without effecting the equipment properties.

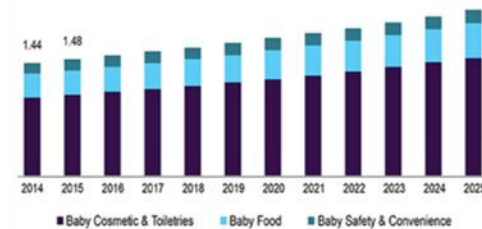
	PineBaby	NUK	pigeon	TASNEEM
Anti-bacterial	/	/	/	/
Biodegradable	/	/	/	/
Plant-based Enzyme	/	/	/	/
No Fragrance	/	/	/	/
No Dye	/	/	/	/
Essential Oil	/	/	/	/

COST ANALYSIS

Brand	Price per 240ml (RM)
Buds Organic	19.20
Sebamed baby liquid cleanser	24.00
PineBaby organic liquid cleanser	33.90
Kath + Belle Safe Clean Bottle Cleanser Spray	34.90
Biolane Ecological Baby Washing-Up Liquid	48.03
Tasneem Naturel Natural Cleanser (Kleenzy)	94.40

ENVIRONMENTAL MARKETABILITY & COMMERCIALISATION IMPACT

- Plant-based formulation detergent
- Biodegradable
- Environmental friendly



US Baby Product Market Size By Product 2014-2025 (USD Billion)



Department of statistics, Malaysia (2019)

PUBLICATION

- Ramli, A. N. M., Aznan, T. N. T., & Illias, R. M. (2017). Bromelain: from production to commercialisation. *Journal of the Science of Food and Agriculture*, 97(5), 1386-1395.
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- Pang, W. C., Ramli, A. N. M., & Hamid, A. A. A. (2020). Comparative modelling studies of fruit bromelain using molecular dynamics simulation. *Journal of molecular modeling*, 26, 1-18.
- Pang, W. C., Ramli, A. N. M., & Abdul Hamid, A. A. (2020). Gene Expression Analysis of Fruit Bromelain in Ripening of Ananas comosus Cultivar MD 2. In *Materials Science Forum* (Vol. 981, pp. 209-214). Trans Tech Publications Ltd.