

OLEOCHEMICAL PROCESS INCUBATOR: SOAP MANUFACTURING

ZAILAN ABU BAKAR; ZULINA ABD MAURAD and ZAINAB IDRIS



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Soap is the product of the reaction between a fatty acid and an alkali. Fatty acids are obtained from the triglycerides (fats or oils) of either animal or plant origin such as palm oil. There are three ways to make soap:

- saponification of oils / fats;
- neutralisation of fatty acids; and
- saponification of methyl esters of fatty acids.



Palm-based soap is manufactured from a natural-renewable resource and is *halal*. Soap bar manufacturing facilities with an average production capacity of 1000 bars per day (eight working hours) are available in MPOB on a pilot scale. The basic ingredients of bar soap

consist of soap noodles, perfume, colouring and additives such as emollients, medicaments and anti-irritants. In order to create special brands and a niche market, manufacturers can employ a number of strategies in soap making. These may include the inclusion of herbs, anti-bacterial agents or aromatherapy ingredients in their soap bar formulations.

OBJECTIVES OF SOAP MANUFACTURING SERVICE

- To provide soap manufacturing facilities to entrepreneurs.
- To encourage entrepreneurs incorporate palm-based soap noodles in soap making.
- To promote value-added palm-based oleochemicals.

METHODOLOGY AND EQUIPMENT

No.	Machines	Process description
1.	Mixing (amalgamator) 	Mix base soap and additives of the required quantities in a primary blend, with a scroll-type mixer for 4-6 min.
2.	Miller (roll mill) 	Pass the mixture through a series of rollers to homogenise it and produce a thin sheet of soap. An alternative method of homogenisation is to pass the mixture into a large worm screw. Under high pressure, the mixture is churned along the length of the screw and extruded through a perforated end plate. Several thin sheets of soap are produced.


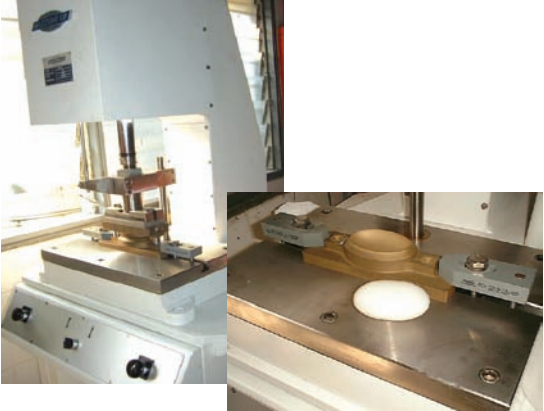
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Malaysian Palm Oil Board, Ministry of Plantation Industries and Commodities, Malaysia
P. O. Box 10620, 50720 Kuala Lumpur, Malaysia. Tel: 03-8769 4400 Fax: 03-8925 9446 Website: www.mpob.gov.my



3.	Extrusion (plodding) 	<p>Compress the homogenised soap using a large worm screw extruder or plodder. A single large continuous bar of soap is produced and the dimension is adjusted to fit the size of the final product with minimum waste.</p>
4.	Pressing/stamping 	<ul style="list-style-type: none"> • Cut the continuous bar of extruded soap. • Stamp the final soap bars. • Wrap the soap bars individually. • Pack according to the intended market.

BENEFITS

- Facilities for pre-commercialisation trials for the soap bars manufacturing.
- Trained personnel are available to help characterise the soap performance and properties.

INDICATIVE RENTAL FEE

The soap manufacturing facilities are offered for rental. The rental fee in 2013 is RM 330 per day (eight working hours and subject to change).

ECONOMIC ANALYSIS

The expected cost for the production of 6250 soap bars is indicated below.

Item	Cost (RM)
Cost of equipment	500 000
Total production cost	606 500
Production of the bar soap	1 033 961
Production capacity	
= 500 kg soap noodles day ⁻¹	
= 6250 bars of 80 g day ⁻¹	
Net Present Value (NPV)	31 826
Internal Rate of Return (IRR)	11%
Payback period	Year 4

For more information, kindly contact:

Director-General
MPOB
P. O. Box 10620
50720 Kuala Lumpur, Malaysia.
Tel: 03-8769 4400
Fax: 03-8925 9446
www.mpob.gov.my