

VIRGIN COCONUT OIL

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Sri Lanka has a history of producing coconut oil from very ancient times. Most of the traditional, popular, food preparations are based on coconut oil; a commodity in big demand throughout the year. The variable quality of the oil available in the market is a matter of concern to all consumers, and various phobias have been expressed.

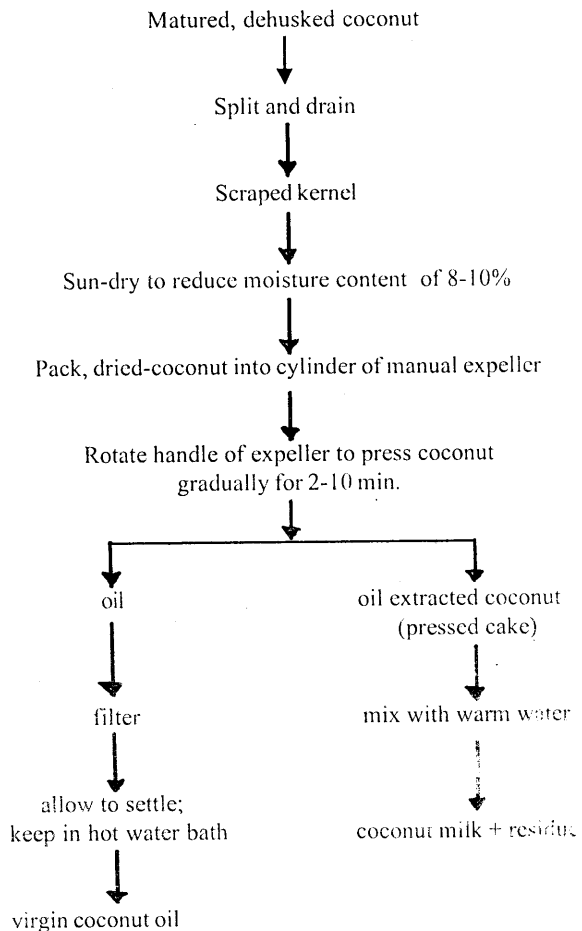
In the coconut oil industry, big machines are used for the extraction of the oil from copra – sun – and firewood dried coconut kernel. Conversion of coconut kernel to copra is a time-consuming process. Further, coconut oils derived by these traditional methods process various pale tints, as seen in commercially available types.

The NERDC has been carrying out research and development work to produce coconut oil without going through the traditional, time-consuming copra process. And the method briefed below is the result of devoted, hard work.

Innovative Process of Coconut Oil Extraction

Coconut is scraped in the normal way. Scraped coconut is sun-dried for a period of way, 1 ½ to 2 hours, on a surface that does not absorb oil. When a pinch of sun-dried coconut pressed between the thumb and a finger it yields the oil, sun drying period is sufficient for the first stage of oil expelling.

Process flow-chart for virgin coconut oil extraction from scraped - dried coconut



Coconut Oil Presses

The commercially available, screw-type, stainless steel string-hopper mould can be easily converted to a hand-operated press to extract coconut oil. It has been found to be very satisfactory at domestic level.

Subsequent to the popularization of the Virgin coconut oil and its domestic expelling unit, there were increasing demands for higher capacity units to cater as a cottage level industry, fulfilling need as a self-employment provider. This resulted in the development of a manually operated medium

size oil expeller and a user-friendly hydraulic jack operated medium size oil expeller. The manually operated model has a capacity to expel 9 Liters of virgin coconut oil per 8 hrs day and the hydraulically operated model has a capacity to expel at least 30 Liters of Virgin coconut oil per 8hr day.

Coconut Oil Presses

- a. Domestic scale coconut oil extractor, (model -1)

Capacity - Scraped dried coconut 175 g
(m c 10-8 %)

Oil recovery - 85 -87 ml/batch ;
(49-50% w/w)

- b. Medium scale coconut oil extractor, (model -2)

Capacity - Scraped dried coconut 750 g
(m c 10-8 %)

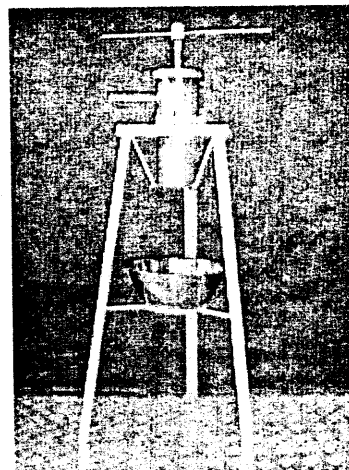
Oil recovery - 390 - 395 ml/batch ;
(52-53% w/w)

- c. Hydraulic press coconut oil expeller (model -3)

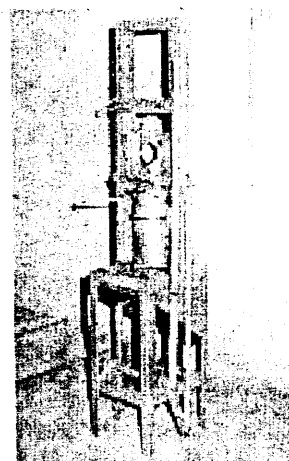
Capacity - Scraped dried coconut 2.5k g
(m c 10-8 %)

Oil recovery - 1.3 lit/batch ; (53-54%w/w)

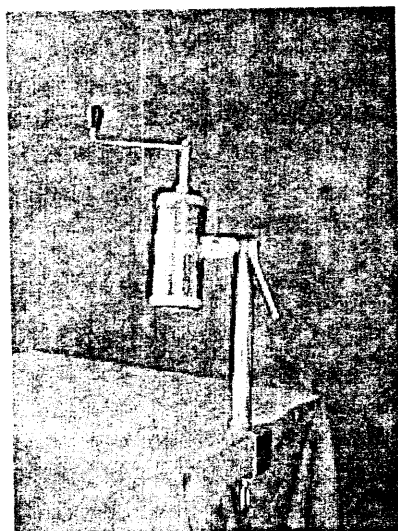
(m c - moisture content, wet basics)



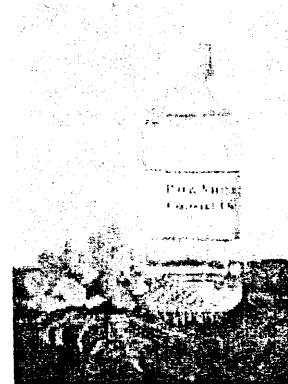
Manually operated medium size oil Expeller



Hydraulically Operated Oil Expeller



Domestic oil Expeller



Pure Virgin Coconut Oil

Awards

The process and the domestic model won the

- Presidential Award year 2000 - Silver medal
- 30th International Inventions Exhibition Geneva Silver medal and Certificate

Batch Rotary-Dryer for Grated Coconut

A niche in the development of process to extract cold-pressed, pure, transparent, coconut oil from freshly-grated, sun-dried coconut was identified. The process was initiated towards the development of a small-scale oil expeller, which has been already patented. The quantities of coconut from the open-air sun-drying process was just sufficient for the capacity of the small-scale oil expeller. Subsequently, the need arose to develop a bigger, cottage-level coconut-oil expeller to improve the productivity. However, match the capacity of this oil expeller open-air sun-drying was found to be cumbersome on the grounds of possible non-sunny weather, floor/ground area requirement for coconut drying, and the relatively long critical drying-time of coconut of about 2.5 hours. This necessitated



the development of a biomass-fuelled coconut dryer to get more coconut dried in a shorter time. This dryer overcame the shortcomings in the solar drying process.

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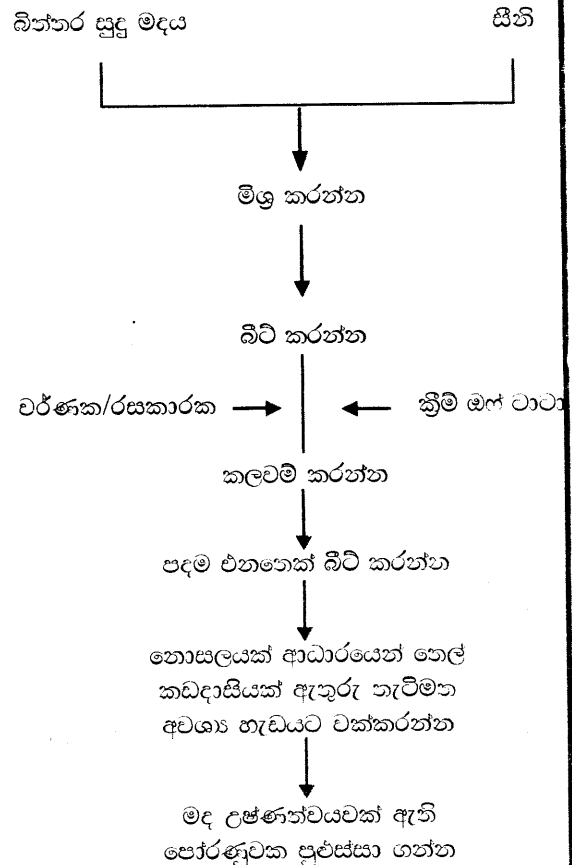
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