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Organisation: Asian and Pacific Coconut Community ([APCC](#))
(<http://www.apcc.org.sg>)

Author: P.G.Punchihewa and R.N. Arancon

Edited by AGSI/FAO: Danilo Mejia (Technical), Beverly Lewis (Language&Style), Carolin Bothe (HTML transfer)

CHAPTER XV COCONUT: Post-harvest Operations

3. Overall Losses

Lack of awareness and actual skills on coconut post-harvest technologies have caused significant losses starting from the harvesting of the nuts, seasoning, drying and storage. While wastage and losses occur at different stages, the copra drying stage or the efficiency of the drying process at the farm level is

the most critical stage as this affects subsequent losses in terms of product quality and reduced prices.

Harvesting of immature nuts causes the production of rubbery copra with high moisture content. If one allows the nuts to fall naturally, without harvesting or picking the nuts from the tree, the losses due to over-ripe nuts or germinated nuts are likely to occur. This could be as high as 10 percent of the total harvest especially with varieties that are early germinating. As the growing embryo utilises the stored food in the endosperm, the copra produced from germinated nuts would be thinner, lighter and with lower oil content. Losses due to pilferage and losses due to nuts that are hidden or covered by thick weeds or shrubs could also range from 5 to 10 percent of the total harvest if one does not regularly harvest his coconuts. To avoid these losses, it is recommended that the 45-day cycle of coconut harvesting be adopted. Seasoning of unripe nuts for 2-4 weeks should also be practised. Farm sanitation, e.g. weeding of thick shrubs and grasses in the spaces between coconut palms is highly recommended to prevent losses due to uncollected nuts.

As mentioned earlier, major post harvest losses are caused by improper drying of copra as a result of a lack of know-how on the proper drying technology and the lack of incentives to adopt the recommended copra dryers and the appropriate copra drying methods. Improperly dried copra or copra with high moisture content are prone to aflatoxin contamination.

Coconut researchers have also identified beetles, cockroach, a moth and an earwig to be associated with deteriorating copra and copra cake. Studies reveal that after one year of storage, copra weight loss due to pests be as high as 5 to 10 percent. Spraying of suitable insecticides may be done but this is not practised due to its prohibitive cost. Sanitary practices in the copra warehouse are the best recommended alternative to control these pests. Generally, these pests are considered a minor problem when compared to the attack of aflatoxin-related moulds or fungi.

Other factors cited to contribute to copra/copra cake deterioration are presence of wet or improperly dried copra, rubbery copra, delays in transport, long storage period, and unsanitary conditions in the farms and warehouse. Long storage time also favours the breeding of copra pests or the

proliferation of aflatoxin related moulds.



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5. Economic and Social Considerations

Coconut is a subsistent crop which has provided the basic needs of a number of countries in the tropics for centuries. With the use of coconut oil in the production of soap and margarine in Europe in the 19th century, it was converted into a commercial crop. In the beginning of 20th century copra was the king among the oil seeds. In East Indies it was known as green gold.

However the period after the Second World War saw the substitution of vegetable oils and oleochemicals for coconut oil in international trade. The increase in the output of coconut was marginal. Price of coconut oil fluctuated heavily due to frequent short supply situations. A campaign against coconut oil alleging that it causes cardiovascular diseases aggravated the situation.

With the depressed price of coconut oil, coconut-producing countries have now moved from traditional products to the processing of value added products. Consequently, recent years have seen coconut oil being further

processed to produce coco-chemicals. Export of coconut shell charcoal and activated carbon is on the increase though in small quantities; products like coconut cream, nata de coco, fibre dust, coconut powder, coconut water, geotextiles are finding their way into the international market.

Another interesting feature that is becoming evident increasingly is the shift of the foreign markets from the traditional base to new areas. The newly industrialised countries in the East as Taiwan, South Korea are fast emerging as key importers of coconut products.

The medical and other evidence that came to light in the last few years in defence of coconut oil has cleared the misconception and misinformation about it.

Coconut products are also drawing attention as environmentally friendly. Research carried out has proved the adaptability of coconut oil as biodiesel. Coir is an excellent natural fibre which is strong, durable and biodegradable. Coir geotextiles are now becoming popular and is being used increasingly for erosion control particularly where land, bank reinforcements is required as

well as for landscaping. Coconut shell which is a major by product of coconut industry finds important uses in daily life in place of non-biodegradable plastic containers. Activated carbon produced out of cocoshell charcoal is used for water purification, air purification and food purification. Fibre dust briquettes have found a place as a soil reconditioner and a suitable nutrient for landscaping and an ideal ready made potting mixture. Coco peat a hundred per cent renewable resource is now replacing bog peat, depletion of which environmentalist feel would destroy land forms, habitat of some unique fauna and flora in the U.K. Coconut water is a safe drink in the world unadulterated and untouched by human hands. Cocowood is a renewable resource and an answer to depleting forests reserves. Coco shell, husk, trunk, coir dust, fronds are energy sources.

Coconut is a smallholder crop and millions of rural people depend on it for survival. Its development particularly in post harvest activities could be the base for rural development in the coconut producing countries.

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7. Annex

7.1 List of Tables

- 1. World Area of Coconut, 1992-1996*
- 2. World Production of Coconuts in Nut Equivalent, 1992-1996*
- 3. Quality Standard for Copra in the Philippines: Classes of Copra Based on Method of Drying and Appearance*

4. *Grades of Copra Used in the Philippines Based on Moisture Content*
5. *Contract Terms for Trading Copra in India Based on Moisture Content and Appearance*
2. *Copra Classification in Papua New Guinea*
7. *Proximate Composition in Percent of Selected Types of Desiccated Coconut*

7.2 List of Figures

- 1 *Potential Products from the Coconut Palm*
2. *Coconut: Tree of Life - Its Parts and End*
3. *Climbing Method of Harvesting Products Coconut*
4. *Palm Climbing Device in India*
5. *Coconut Dehusking Tool*

6. Sun Drying Copra

7. Sun-Dried Copra Cups

8. Direct Smoke Copra Dryer

9. Semi-Direct Smoke Copra Dryer

10. Modified Kukum Hot-Air Copra Dryer

11. Cocopugon Hot-Air Brick Copra Dryer

12. Dry Process of Coconut Oil Manufacturer

13. Process Flow of the Hot-Oil Drying Technology (HOID) of Extracting Coconut Oil

14. Villager Using the Traditional Coconut Grater in Tanzania

15. Rotary Coconut Grater

16. Ram Press Operated by Women in Zanzibar

Coconut Alcoholic Beverage - Arrack

18. Moulded Coconut Sugar

19. Coconut Jam

20. Extraction of Coconut Fibre

21. Women Extracting Coconut Fibre in Sri Lanka

22. Flow Chart of Processing in the Production of Coir



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