Modernisation and Innovation of Palm Oil Extraction Process: The Palm Nut, Its By-products and Its Properties

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Abstract

Our Poster aims at showing photos with explanations of the different steps of the Palm Oil extraction process done by Cameroonian farmers. The method is purely at cottage industry level where the farmers would put the palm oil fruit in a boat like wooden container and they would step on it to press out the oil and water. The number of the farmers who do the pressing would depend on the size of the boat-like wooden container. The juice is then put in a container and boiled until the water evaporates.

Semi-modern extraction consists of using a locally manufactured Mixer Machine. The machine has a container with an outlet which is mounted on a rod. The boiled palm nut are put in the mixer and turned around. The juice that comes out of the mixer is put in another container. After, the juice is boiled until the water is totally evaporated. The oil is then put into containers.

Besides photographs, there will be an exhibition of certain farm produce like:

Ripe palm nut cone, palm nut, crushed palm, kernel. These products will be presented in baskets made of straws.

The different products of palm oil will be presented in a plastic jar: red palm oil, white and black palm oil obtained by squeezing burned palm nuts kernels.

Each product will be labeled. The label will explain how it is produced and give its natural properties.
Traditional extraction palm oil

Picking off the nuts from the cone  Sorting of the palm nuts  Boiling the palm nuts

Smashing of the boiled palm nuts separate the fibres, the kernels and the juice

When the separation is sufficiently done, the fibres are dried in preparation for burning or lighting of flames. The juice is then drained leaving behind the kernels. The juice is boiled until the water completely evaporates.
Traditional Oil Press

A traditional Oil press composed of a container with bored holes and rods fitted at the sides. A rotating wood is fitted in the centre of the container serving the role of a compressor.

The boiled palm nuts are poured into the traditional pressing machine. During the crushing of the nuts warm water is poured into the machine. Juice and water are drained into a basin through a pipe beneath the machine.

The juice seeps through the bore holes of the container and drains into the basin. The collected juice which floats on water can now be separated easily.

The wastes or chaffs (fibres and the kernels) obtained after extraction of the oil serves as a food complement for cattle.

Sources: CRNA, CIRAD, Transformation artisanale de l’huile de palme au Bénin et au Nigeria : Stéphane Fournier ; Peter AY, Claude Okouniola-Biaou
Palm Products

Palm nuts

Baskets of palm nuts separated from the cone.

Palm Oil

Palm oil is extracted from the fruit pulp. It has a characteristic red colour. The palm oil is often used for consumption (frying, production of margarine etc). It is also use for the manufacture of soap and other cosmetic products.
Palm Kennels

Palm kernels are the edible part of a palm nut that has been cracked and removed from inside of the shell.

Palm Kernel Oil

Palm Kernel oil is of two types based on the colour: black and white. The colours are based on the method of obtaining the kernel oil. The white kernel oil is extracted from cracked nuts which is later crushed and pressed to obtain a jelly. It is used equally for consumption and in industries that produce soap, body creams and lubricants, etc.

Black palm kernel oil

The black coloured Palm kernel oil is obtained traditionally after being burnt at high temperatures. At high temperatures the jelly is obtained which is often used as body lotion or in traditional medicine.
Cattle cakes are the solid residues obtained after extracting oil from the palm nuts or from the grains. The Cattle cakes are used in feeding domestic animals like pigs, goats which constitute a source of protein for the animals.

Palm wine is an alcoholic drink obtained from the fermentation of the sap of a palm tree. Immediately the palm wine is tapped it is very sugary (sweet) but it quickly becomes fermented due to its high yeast content and develops a tart taste. When fermented it acquires a high acidic content and is sometimes use for the manufacture of “illicit gin” It is mostly consumed in West and Central Africa.

The heart of the palm is an edible (eatable) part. It is the interior part of the trunk. To obtain the heart of the palm, one has to fell the palm tree.
EXHIBITION

These stands are an assimilation prepared for this “POSTER”. The natural’s products below are from my production.

References

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