

# PDF - EVALUATION OF THE PHYSICO CHEMICAL PROPERTIES, PHYTO CHEMICALS AND MINERAL COMPOSITION OF COMMERCIALY AVAILABLE SHEAR BUTTER OIL. - researchcub.info1.1

## Background to the Study

Worldwide, natural vegetable oil and fats are increasingly becoming important on nutrition and commerce because they are sources of dietary energy, antioxidants, biofuels and raw materials for the manufacture of industrial products. They are used in food, cosmetics, pharmaceutical and chemical industries. Vegetable oils account for 80% of the world's natural oils and fat supply ( FAO, 2007).

Shea butter is a fat extracted from the but of the African Shea tree ( *Vitellaria paradoxa*). It is usually yellow in color when raw, with unrefined, refined and ultra refined Shea butter being ivory or white in color (Alfred, 2012). Shea butter is Edible and is used in food preparation in Africa ( National Research council, 2006). Occasionally the chocolate industry uses Shea butter mixed with other oils as a substitute for cocoa butter, although the taste is noticeably different (Masters et al., 2004; Fold and N. ,2000).

The English word "Shea" comes from s'i, the tree's name in the Bambara language of Malo (Dictionary entry, 2012). It is known by many local names e.g 'kadi' or 'kadanya' on Hausa language, Karite in the wolof language of Senegal (Goreja and W.G. , 2004). 'Ori' in some parts of West Africa, and many others (Shea butter, 2013). Shea butter extract is a complex fat that in addition to many non saponifiable components ( substances that cannot be fully converted into soap by treatment with alkali) contains the following fatty acids. Oleic acid (40-60%), stearic acid (20-50%), linoleic acid (3-11%), palmitic acid (2-9%), linolenic acid (<1%) and arachidic acid (<1%) (Davrieux et al ., 2010).

Shea butter melts at body temperature. Proponents of its use for skin careaintain that it absorbs rapidly into the skin, acts as a defatting agent and has a good water binding properties ( Hemat and R.A.S. ,2003).

Shea butter is mainly used in the cosmetics industry for skin and hair related products

(Lip gloss , skin moisturizer creams and emulsions and hair conditioners for dry and brittle hair) ( citation needed). It is also used by soap makers, typically in small amounts (5-7% of the oils in the recipe), because it has plenty unsaponifiables and higher amount result in softer soaps that have less cleaning abilities. Some artisan soap makers use around 28%, but it is rarely the case in commercially produced soap due to its high costs against oils like palm or pomace (olive). It is an excellent emollient for people who suffer dry skin conditions. No evidence shoes it is a cure, but it alleviates the pain associated with tightness and itching.

In some African countries such as Benin, Shea butter is used for cooking oil, as a water proofing wax, for hair dressing, for candle making and as an ingredient in medicinal ointments. It is used by makers of traditional African percussion instruments to increase durability of wood ( such as carved djembe shells), dried calash gourds, and leather turning straps ( citation needed).Shea butter can be an ingredient of organic broth ( Natural undated).

In the UK and other countries, it is incorporated into assorted tissue products such as toilet paper (Alfred,2002). It is sometimes uses as a base for medicinal ointments.some of the isolated chemical constituents are reported to have anti inflammatory properties (Akihisa et al.,2010). It has also been claimed to be used as sunblocking lotion. Some of its components have limited capacity to absorb ultraviolet radiation ( Masters et al., 2004). In Nigeria Shea butter is used for the management of sinusitis and relief of nasal congestion ( Tells et al., 1979). It is also massaged into joints and other body parts where pain occurs.

## 1.2 Statement of the problem

In West Africa, a variation even within neighbouring Shea trees have been reported. These variations have

often been attributed to environmental factors such as rainfall, soil fertility, maturation period, agronomic practises and genetic substitution ( Maranz et al., 2004; Sonau et al., 2006). Therefore with the increasing global demand for Shea oil, evaluation of the physico chemical properties, phyto chemicals and Mineral composition of commercially available Shea butter oil is essential.

### 1.3 Research Questions

1. What is the origin of Shea butter oil?
2. What are the different varieties of Shea butter oil?
3. Why the need to evaluate the physico chemical properties, phytochemicals and mineral compositions of the Shea butter oil?

### 1.4 Objectives of the Study

The major objective of the study is to evaluate the physico chemical properties, phytochemicals and mineral composition of commercially available Shea butter oil.

### 1.5 Significance of the Study

This Study investigated the physicochemical properties, phyto chemicals and mineral composition of commercially available Shea butter oil. It also gives a clear insight into the factors responsible for its medicinal uses and the benefits derived from it as food.

### 1.6 Scope of the Study

These research focuses on the evaluation of physico chemical properties, phytochemical and mineral composition of commercially available Shea butter oil in Nigeria.

### 1.7 Limitations of the Study.

Only selected samples of commercially available Shea butter oil was procured.

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