

SHEA TECH CERTIFICATION

ONLINE COURSE MODULE 1



The Source and Characteristics of Shea Butter

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SHEA BUTTER: WHAT IS IT?

Shea Butter is the oily extract from the seed of the Shea nut. The extract contains a number of ingredients with biological activity (bioactive nutrients). This biological activity includes moisturizing and the healing of minor skin ailments. In the USA, Shea Butter has already attracted the interest of several industries, including but not limited to cosmetics, personal care, food, healthcare and applied science.



SOURCE OF SHEA BUTTER

A. The Shea Tree

This unique tree grows only in Africa. The secret within its fruit has been known for centuries. The Europeans re-discovered the tree about 200 years ago. Today, the tree may be found in 19 contiguous countries across Africa from Senegal to Ethiopia. These 19 countries are also considered the Shea Belt. The African Shea Belt covers a vast area, that expands some 3000 miles across Africa, including the nations of Benin, Ghana, Chad, Burkina Faso, Cameroon, Central African Republic, Ethiopia, Guinea Bissau, Cote D'Ivoire, Mali, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Togo, Uganda, Zaire and Guinea. As one travels from Senegal in the west to Ethiopia in the east, one finds that the variety of the Shea fruit also changes.



SOURCE OF SHEA BUTTER

B. Varieties of the Shea Tree

Paradoxa is the variety found in West Africa, while Nilotica variety is found in East Africa. The appearance and the chemical composition of the two varieties are profoundly different. You may consult the Shea Butter Handbook for more details on these differences. Geographically, as you travel from the west to the east, you will find the Shea Belt nestled between two of Africa's geographic landmarks, the Sahara desert to its North and the African Rain Forest to the South.

Two Varieties of Shea Trees:

- Vitellaria Nilotica eastern variety
- Vitellaria Paradoxa western variety



SOURCE OF SHEA BUTTER

The Shea Tree's Relatives

Name	Location	Use and Reference
<i>Vitellaria paradoxa</i>	Senegal to Ethiopia	Shea nut; shea butter
<i>Diploknema butyracea</i>	India	Illipe nut; mahua
<i>Baillonella toxisperma</i>	Nigeria to Zaire	False shea butternut; or African pearwood
<i>Argania spinosa</i>	Morocco	Argan Fruit



SOURCE OF SHEA BUTTER

C. The Fruit

Statistically, about 1 in 3 trees will give fruit during each season (Spring-Summer). Trees bearing fruit will produce a fruit about the size of a plum. When ripened, the fruit is a green-orange or yellowish orange color with very sweet custard content when eaten. A nut is found in the center of the fruit.

D. The Nut/Seed

When the nut is properly removed from the fruit and dried it is a brown oval structure about the size, shape and color of a pecan. The nut has a shell about the thickness of a pecan shell. Within the nut is a seed. The seed is removed from the nut, and Shea Butter is the oily extract of this seed.

Over 1 million tons of Shea nuts are harvested annually. It is estimated that the annual harvest represents only about 1/3 of the nuts produced each year. Only a very small portion of the annual nut harvest is converted to Shea Butter in Africa. Most of the annual nut harvest is exported to international destinations outside the African Continent. Much if not all of this nut export is used in the chocolate industry, to prepare a product for use as a cocoa butter substitute by chocolate manufacturers.



CHARACTERISTICS OF SHEA BUTTER

A. Healing Fraction of Shea Butter

"100 % PURE SHEA BUTTER" is a superior moisturizer, containing remarkable healing properties for various skin ailments. For example, 100 % Unrefined Shea Butter contains the one vitamin that is absolutely necessary for healthy skin, Vitamin A. Additionally 100% Unrefined Shea Butter contains several natural anti-inflammatory agent and a minor sunscreen agent. Clinical studies have shown unrefined Shea Butter transforms the skin in as little as 4-6 weeks, into softer, smoother, and better-looking skin. Those who routinely use Shea Butter report a number of other special benefits for skin ailments, including blemishes, itching, sunburns, small skin wounds, eczema, skin allergies and wrinkles.



CHARACTERISTICS OF SHEA BUTTER

B. Moisturizing Fraction

The MOISTURIZING FRACTION is also known by its scientific name the saponifiable fraction. This moisturizing fraction accounts for more than 90% of the butter.

IMPORTANT INGREDIENTS IN THE MOISTURIZING FRACTION

- Triglycerides;
- Diglycerides;
- Monoglycerides;
- Complex derivatives of Monoglycerides;
- Complex derivatives Diglycerides;
- Free fatty acids;

These natural ingredients are produced and stored within the cells of the shea seed. At the time of Shea Butter extraction the moisturizing ingredients are harvested from the seed as part of the Shea Butter.



CHARACTERISTICS OF SHEA BUTTER

B. Moisturizing Fraction (Continued)

Fatty Acid Profile

Fatty Acid Profile	Normal Distr.	Excellent	%	Ce le-91
Palmitic	3.69	Normal	%	Ce le-91
Stearic	41.40	Normal	%	Ce le-91
Oleic	45.77	Normal	%	Ce le-91
Vaccenic	0.41	Normal	%	Ce le-91
Linoleic	6.15	Normal	%	Ce le-91
Arachidic	1.62	Normal	%	Ce le-91
Linolenic	0.14	Normal	%	Ce le-91
Behenic	0.16	Normal	%	Ce le-91
Lignoceric	0.11	Normal	%	Ce le-91
Eicosenoic	0.29	Normal	%	Ce le-91
Unknown	0.26	Normal	%	Ce le-91



CHARACTERISTICS OF SHEA BUTTER

C. What is Raw, Virgin, unrefined, and refined retail Shea Butter?

On the market, you will find unrefined Shea Butter by one of three names: Unrefined, Raw, and Virgin. You should remember that unrefined, raw, or virgin are names that refer to the exact same product, unrefined Shea Butter.

- Shea Butter comes in two forms--Refined and Unrefined.
- Similarities in the two forms: refined and unrefined Shea Butters are excellent moisturizers.
- Differences in the two forms:



CHARACTERISTICS OF SHEA BUTTER

Refined Shea Butters are an excellent moisturizer, but have little to no healing benefits. Unrefined Shea Butters are an excellent moisturizer, and have an abundance of healing benefits, that are useful for skin ailments mentioned in the article, “21 reasons to use Shea Butter”; for details GO TO: <http://www.sheainstitute.com/21reasons>

Shea Butter is refined to remove among other things, odor and color. Unfortunately, the refining process removes not only the odor and color, but also removes the important healing nutrients; leaving a snow white butter without an odor and significantly decreases the bioactive fraction. Scientists are only recently becoming more aware of the valuable nutrients in the healing fraction. For many years the healing ingredients were discarded to get the fatty acids and triglycerides for moisturizing and of confectionary purposes.

During the refining process, up to 75% or more of the healing nutrients can be lost. The amount and degree of refining determine the amount of healing nutrients lost; therefore, you can expect ultra-refined Shea Butter to have the least amount of the important healing nutrients.



CHARACTERISTICS OF SHEA BUTTER

D. Physical Properties

What is the melting point of Shea Butter?

Shea Butter does not have a melting point. It has a melting range. Usually, a melting point is appropriate for a substance that is composed of a single chemical compound or a single molecule. Since Shea Butter consists of a dozen or more natural compounds, with each compound having its own unique melting point, it is difficult for a substance of such composition to have a melting point. Therefore, when Shea Butter is heated one sees the butter melt over a temperature range not a sharp point, as seen with substances made of a single substance or a single compound. The melting range for Shea is 28 - 37°C. This range implies the butter will start the melting process at about 28°C and will complete the melting process by 37°C.



CHARACTERISTICS OF SHEA BUTTER

D. Physical Properties

What is the true smell of natural, unrefined shea butter?

Shea Butter has a rather unique and characteristic aroma. Once you smell unrefined Shea Butter, you may have some difficulty finding words to describe its unique aroma. However, in the future you will always be able to identify the smell of unrefined Shea Butter. For that reason, we describe the smell of Shea Butter as CHARACTERISTIC. In our experience, about 4 out of 5 people, exposed to the aroma of unrefined Shea for the first time will express displeasure with the aroma for cosmetic use. Of those who expressed an initial displeasure with the aroma about 1 out of 4 would have nothing more to do with un-fragrance unrefined Shea Butter. This observation explains why it is mandatory to add fragrance to unrefined shea.



CHARACTERISTICS OF SHEA BUTTER

D. Physical Properties

What is the true color of natural, unrefined shea butter?

The most common colors for natural, unrefined Shea Butter is Ivory to light Yellow to Beige. (Do not mistake Snow White for Ivory) The major contributors to the color of Shea Butter are the yellow to orange carotenes native to the butter. In some areas of Ghana a small portion of the root from *Cochlospermum tinctorium* is added which gives additional yellow color. *Cochlospermum tinctorium* contains Polyphenols 9% (an Antioxidant), and polysaccharides 59% (Complex Sugars). Many times you will be able to identify Shea Butter from Ghana because of the dull yellow color of *Cochlospermum tinctorium*.

