

SHEA BUTTER

The revival of an African wonder

*By M. Pobeda and L. Sousselier**

For centuries, Shea butter has been used traditionally on the African continent. Citing its outstanding properties, cosmeticians, too, have utilized Shea butter for decades. Ground-breaking data produced integrating the latest industry trends now revives the interest of this amazing “ecologically correct” ingredient.

Drenched in Culture

Shea butter is completely enmeshed with the history and culture of the wooded Savannah between Senegal and Nigeria. It is the link between the gathering civilization and agriculture: a product that grows and is harvested in the wild, and is processed for yearlong conservation.

Africa’s relationship with Shea butter is intimate in nature. The funeral beds of late kings are carved in the noble wood of an old Shea tree.

Shea butter has always served as a staple of African pharmacology. It acts as an effective decongestant, for example. Used for its draining and anti-inflammatory properties, it is soothing in sprains and strains, and is a widely used anti-arthritic treatment. This wonderful healing agent is also used for accelerating the cicatrization of the umbilical cord and after a circumcision.

Shea butter is exceptionally versatile, as expressed in the usage of its by-products: for cooking (as a sauce or for frying), for lamp fuel, and as an insulating material for housing..

Something to Write Home About

Almost all historical references we have from pre-19th century Africa mention Shea butter. Even as early as Cleopatra’s Egypt, there is mention of caravans bearing clay jars of the valuable Shea butter for cosmetic uses

Many of history’s great travelers recorded their observations about Africa’s culture and her use of Shea butter. Ibn Batouta was a 14th century historian and ambassador entrusted by the Morocco sultan with a diplomatic mission at the court of Mali. He traveled through West Africa in 1348 and reported the various uses of Shea butter.

The first European to travel the Niger River was the Scot Mungo Park, who was also the first to describe the botanical characteristics of the Shea tree, and the various applications of the “butter” derived from it.

Traditional Beauty

It is, however, mostly for skin care that Shea butter is hailed for its protecting and emollient properties. Many local soap manufacturers use Shea butter as a raw material. Protecting the skin and the hair from the harsh African climate is vital, and this natural product does so beautifully. Newborn babies are welcomed by a vigorous massage with Shea butter to protect them from the extreme weather.

As early as 1940, many scientific observations verified that, among the populations using Shea butter, the occurrence of skin diseases was scarce and the population’s skin was exceptionally supple and smooth.

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Botanical aspects

A hardy tree not unlike the oak, the Shea tree (*Butyrospermum parkii Kotsch.*) grows up to 15 to 20 meters high. It usually lives for a couple of centuries, covering vast areas. The dark green foliage is dense during the rainy season. The deciduous leaves are regenerated at the same time as they fall, so the Shea tree never looks depleted. The bark resists quite well to the Savannah fires due to its thickness.

Shea tree is the only Sapotacea on the dry soils of the African Savannah. Odoriferous brownish flowers bloom from December to March. Shea fruit resembles a small avocado with flavorful pulp. The central kernel yields the butter, which represents half of its content. Each mature tree bears 15 to 20 kilos of fruit.

Shea tree has many names in Africa: it is called karité in Wolof, karé or kolo in Peuhl and sé in Bambara (which gave shea in English).

A Market for Change

For agricultural reasons, planting Shea trees in regions other than continental Africa is not possible. Moreover, industrially, the market is saturated with butters extracted by using the solvent hexane. Today, however, “ecologically correct” products are highly attractive. The demand for natural products and traditional methods modifies today’s production methods. Using Shea butter obtained by traditional craft methods or by mechanical crushing without chemical solvents is no longer optional.

“Green Belt” is an NGO active in Western Africa for promoting reforestation. It recognizes only environmentally sound products. Green Belt has certified mechanically crushed Shea butter, making it the optimal choice among all of today’s Shea butters.

Cosmetic applications

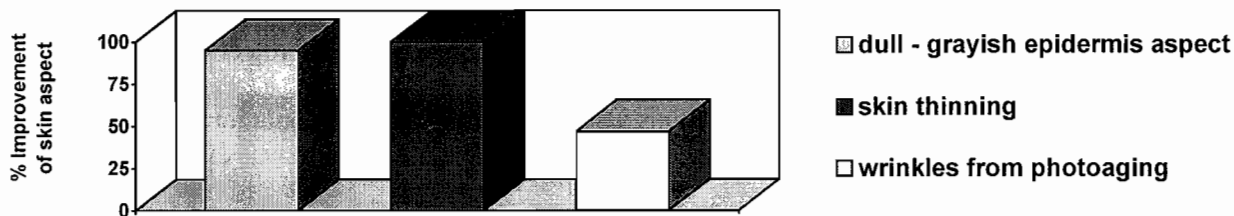
Cosmetic chemists have been using Shea butter for more than 20 years. Some may consider it just as they consider many lipids: as a good emollient. We believe it is much more.

SHEA BUTTER: EMOLLIENT OR ACTIVE INGREDIENT?

A thorough study has been published in a French Ph. D. thesis in pharmacy by F. Renard. In it, 2 clinical studies are described:

Skin aging treatment

A clinical study has been performed on 30 volunteers aged 29 to 82. Shea butter was applied by a daily massage as a balm for 4 to 8 months.



Various skin conditions have shown major improvements:

- epidermis aspect: in a few weeks, the rough aspect of a dull - grayish complexion was eliminated, giving way to a smoother, clearer skin.
- combating skin “thinning” for better skin texture: a regenerating effect is observed probably related to the action of the unsaponifiables that are known to reactivate collagen synthesis.
- wrinkles from photoaging due to prolonged sun exposure are visibly diminished in half of the volunteers.

Shea butter proves to be a valuable active for diminishing various aging signs.

Protecting and regenerating treatment

Another clinical study was performed for studying dry, delicate or aging skin. 49 volunteers applied twice a day either 15% or pure shea butter. Both products lead to similar results:



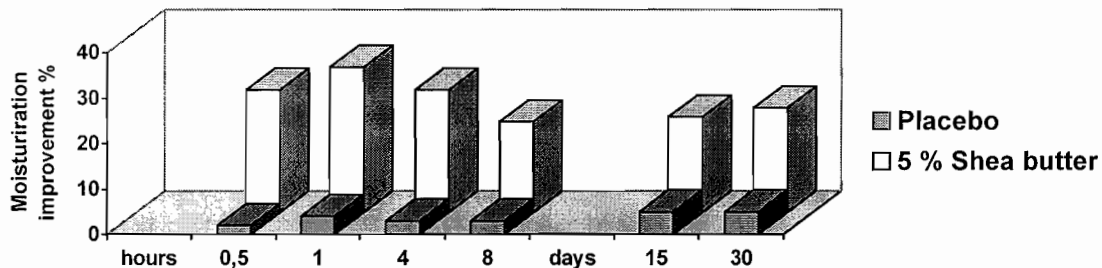
- A cicatrizing action was observed in 70% of cases concerning hand dermatitis, sun burns and scars.
- A reduction in wrinkles and an improvement of skin suppleness was obtained for 75% of the volunteers.

Shea butter demonstrates regenerating properties that target it towards photoaging prevention.

Other tests have been performed for demonstrating additional benefits:

Moisturizing properties

A cream containing 5% shea butter and a placebo cream are applied at the beginning of the experiment (Poelman & al.) and reapplied on a daily basis on the volar forearm of 10 volunteers. The results are the average of 10 measures of skin conductimetry differences between treated and untreated skin.

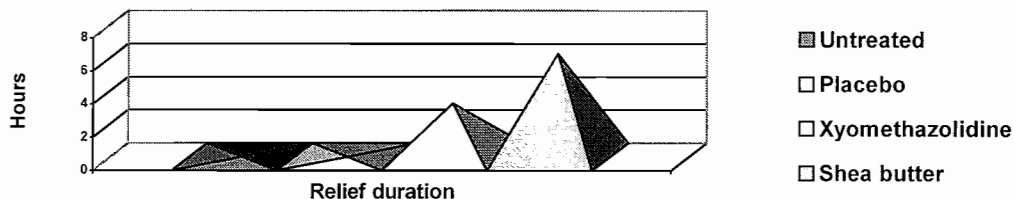


Short-term moisturization is observed, it peaks after 1 hour and persists for 8 hours. For all subjects, a daily application maintains a very good moisturization of the superficial layers of the skin.

Anti-inflammation properties

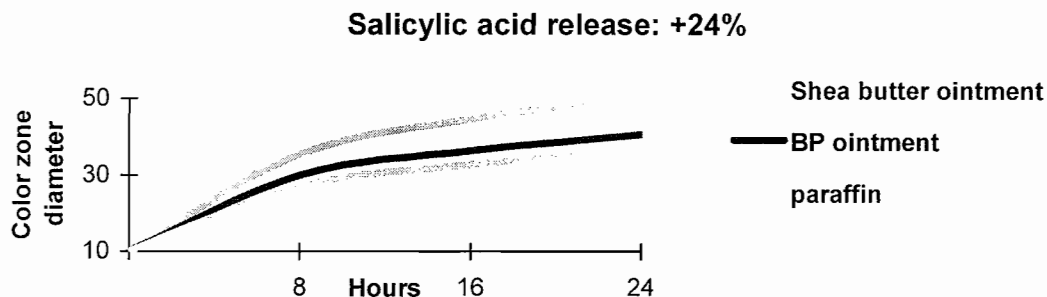
Shea butter is traditionally used for alleviating rheumatism, which suggest an anti-inflammatory activity. This has been substantiated (Tella) in a study of severe nasal congestion. Shea butter is tested on 33 volunteers against conventional nasal drops containing xylomethazoline (as recommended in the British Pharmacopoeia), a placebo and a control.

Nasal congestion is created by an edema that can be relieved by two mechanisms: a vasoconstrictor or an anti-inflammatory. Only the second mechanism applies for Shea butter that has never demonstrated any vasoconstricting activity.



Efficient release of active ingredients

This study (Konning) has been conducted on ointments and demonstrates that Shea butter releases faster salicylic acid crystals. 75 μ crystals of salicylic acid are incorporated in the ointment (75 % shea butter –15% arachid oil and 10% paraffin). A petri dish is filled with agar containing ferric chloride. A hole is cut at the center and filled with the ointment. When salicylic acid diffuses it gives a color reaction and the color zone diameter provides an easy measurement of salicylic acid release.

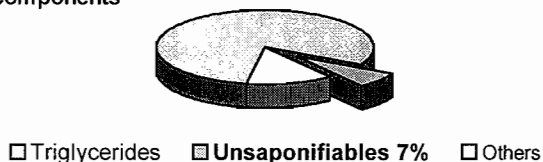


Incorporating active ingredients in Shea butter may prove a valuable alternative for ensuring their efficient release on the skin.

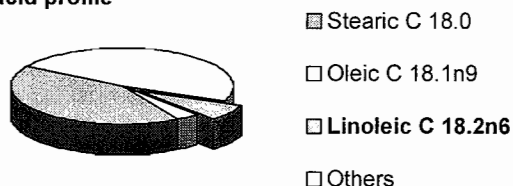
What is shea butter?

It is a slightly ivory granulated butter consisting mostly of triglycerides (which include a fair amount of linoleic acid) and unsaponifiables: mostly: Karisterols (α spinasterol – Δ^7 stigmastenol) – Parkeol – Lupeol – Butyrospermol- Katitene and cinnamic esters.

Major components



Fatty acid profile



Shea butter helps to:

- protect skin against climate and UV aggressions
- prevent wrinkle formation

- soothe irritated and chapped skin
- moisturize the epidermis
- improve the release of polar active ingredients

Due to its unique blend of unsaponifiables (with UV-B absorbing properties), and essential fatty acid triglycerides, Shea butter is a prime active ingredient for Cosmetics. It leaves a pleasant smooth feeling to the skin while improving its softness. Shea butter is particularly recommended in oil free formulations, it has a good spreadability and quick rub-in properties.

Shea butter may be used in many different cosmetic applications:

- | | |
|--|--|
| Skin care: up to 15% in | - Protecting - regenerating - moisturizing - anti aging products |
| | - Dry skin products – sensitive skin products |
| | - Anti stretch mark products |
| | - Hand creams - body lotions – winter sports products |
| | - Baby products – shaving & after shaves - after waxing |
| Sun care: up to 25% in | - SPF booster for sun protection |
| | - Soothing and moisturizing after sun products |
| Lipsticks – lip balms: from 10% | Liquid make up: up to 3% |
| Aromatherapy, Athletic and Ethnic products: may be used pure – body butters | |
| Soap bars: up to 10% | Bath & shower products: up to 2% |
| Hair care: up to 3% in | - dry hair nourishing shampoos & conditioners |
| | - after coloring repairing shampoos |

Let's conclude by listing Shea butter regulatory agreements:

INCI:	Shea butter (<i>Butyrospermum parkii</i>)
CAS n°:	91080 – 3 – 8
Europe ELINCS n°:	293 – 515 – 7
Japan CLS n°:	523 110 – 42

and by giving a formulation example:

PROTECTIVE CREAM FOR DRY SKIN (% Weight)

Phase A	Water	35.26	Phase D	Cetyl Palmitate	3.00
	Cetareth 2 Phosphate	4.00		Cetyl Alcohol	2.00
	Glycerin	3.00		Sorbitan Stearate	0.70
	Tetrasodium EDTA	0.10		Polysorbate 60	2.30
Phase B	Water	4.00		Glyceryl Stearate	3.00
	Sodium Hydroxide	0.34		Dimethicone	2.00
Phase C	Water	25.00		Octyl Stearate	9.00
	Xanthan Gum	0.50		Tocopheryl Acetate	0.05
Phase E	Water	1.00		Sheabutter BKN 36 *	4.00
	Imidazolidinyl Urea	0.15		Methyl Paraben	0.20
Phase F	Perfume	0.30		Propyl Paraben	0.10

* TECO

Process: Heat A at 75°C. Prepare separately Xanthan gel. When homogeneous, add under moderate agitation to A. Heat D at 70°, until completely homogeneous. Add D to (A+B+C). Cool under mixing. Then add E and F.

Defining qualities

Shea butter is a versatile active ingredient bearing excellent anti-aging, soothing, and moisturizing properties. Its qualities defy that of any conventional lipid. Introducing environmentally sound Shea butter in a cosmetic product maximizes its potential in the current “ecologically sensitive” market and structures it for optimal growth.

References

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