

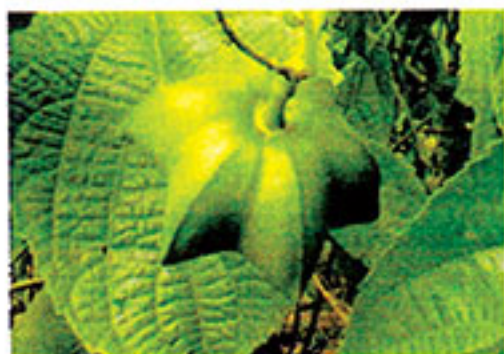
Inca omega oil

A highly concentrated botanical source of alfa omega Oil

INCA OMEGA OIL contains one of the highest amounts of polyunsaturated fatty acids (PUFA) among all oily seeds used for human consumption. It reaches an average of 48% content of alfa-linolenic acid (Omega 3) and an average of 37% content of linoleic acid (Omega 6). Additionally it contains approximately 8% of oleic acid (Omega 9).

INCI name

Plukenetia Volubilis Seed Oil



Description

FAMILY: Euphorbiaceae

GENUS: Plukenetia

SPECIES: Plukenetia Volubilis Linneo sp.

SYNONYMS :Plukenetia peruviana muell. arg., Plukenetia macrostyla Ule

COMMON NAMES: Inca peanut, Inca Inchi, Sacha Inchi, Sacha Yuchi

BOTANICAL NAME:

Plukenetia volubilis, *Tetracapidium conophorum*

HABITAT

Highland tropical jungles. Plant native to the high altitude rain forests of the Andean region of South America

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Lipids are important multifunctional ingredients commonly used in cosmetic and personal care products. They might function as emollients, moisturizers, emulsifiers, binders, lubricants, solubilisers, dispersing agents, penetration enhancers, carries, viscosity modifiers, spreading agents, antimicrobials as well as biologically actives ingredients in a wide range of applications including skin care, hair care, decorative cosmetics and toiletries.

Natural lipids are closely link to biochemical processes including the regulation of epidermal growth, reduction of skin irritation and provision of a skin barrier function. The barrier properties of the skin are known to be exclusively dependent on the presence of epidermal lipids

LIPIDS IN SKIN CARE

Natural lipids are important ingredients in all skin care categories and of special importance for dry and sensitive skin, for anti-aging, protecting and caring skin care formulation. Since dry skin have become a wide spread occurrence, many people need refatting and smoothing skin care products.

The skin functions as a barrier to protect the body from excessive water loss and from penetration of foreign substances. The optimal state of the skin is typified by a balanced ratio of skin lipids to skin moisture. The health of the skin depends on the moisture retention supplied by the outer layer of the epidermis.

Dry skin is characterized by a reduced content of water and a deficient lipid composition. A defect skin barrier results in increased water evaporation and an enhanced sensitivity to the environment. Thus, an ideal skin care formulation should contain ingredients that improve the barrier function and repair as well as supplement the natural epidermal lipids.

ESSENTIAL FATTY ACIDS

The essential fatty acids are the polyunsaturated fatty acids (PUFA) that are necessary for good health but can not be synthesized in the body.

The Straum Corneum requires three main types of lipids to perform its barrier function: Ceramides, Cholesterol and polyunsaturated fatty acids. If these lipids are tightly packed into the spaces between the keratinocytes, the alienate substances cannot penetrate the skin surface and enter the body. On the contrary, if there is a disruption in the number or tightness of the intercellular lipids, the skin barrier becomes permeable

Deficiency of PUFA leads to skin disorders such as:

- * Dry skin
- * Desquamation (scaly skin)
- * Wounds fail to heal
- * Loss of humidity
- * Erratic keratinisation process (blocking of follicles)
- * Increase of rate of mitosis (disorganized skin layers)
- * Tendency towards eczema and itchiness

Linoleic acid is an important precursor of ceramides and essential for the barrier function of the skin. Both topical application and dietary intake of essential fatty acids have been shown to



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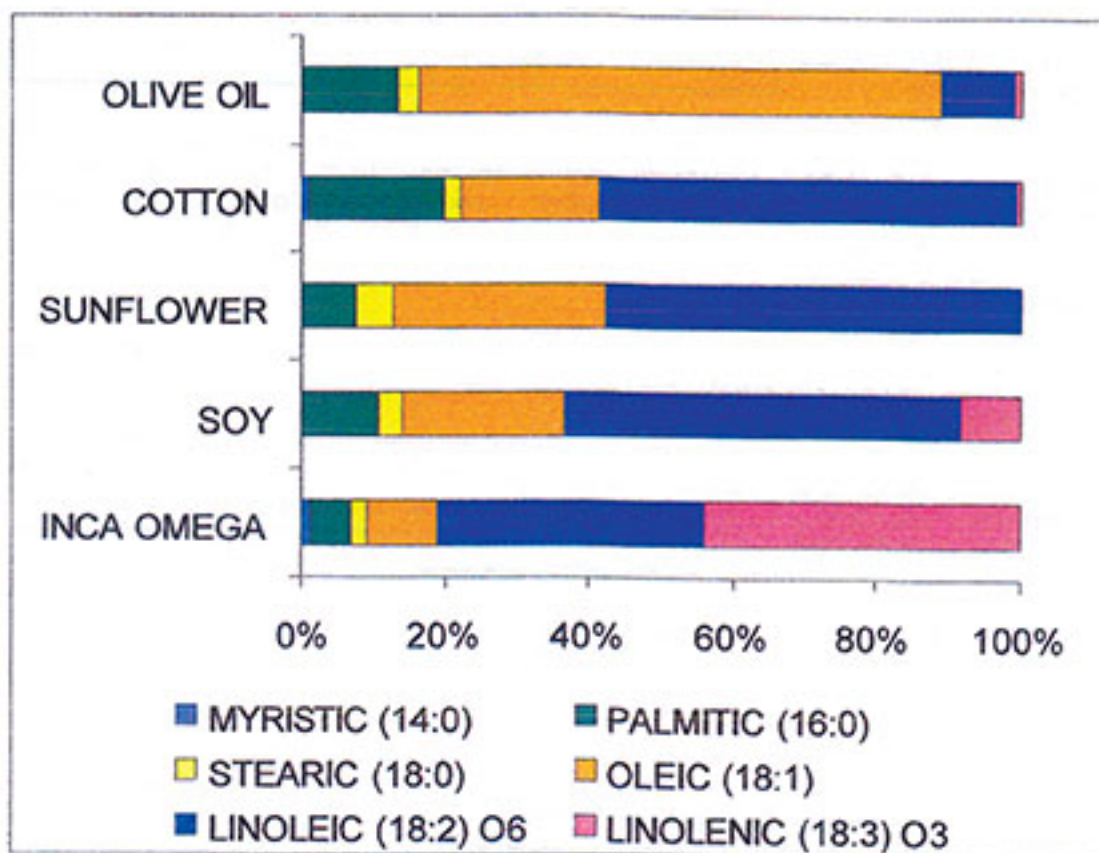
restore dry skin conditions as well as therapeutic effects on skin disorders such as atopic dermatitis, psoriasis and acne.

Skin displays highly active metabolism of PUFAs, but is not able to perform all desaturation / elongation steps. PUFAs can be incorporated into the structure of the skin through topical application. Fatty acids can be metabolized by the skin.

Cutaneous application of PUFAs lead to:

- * Reduction of Trans-epidermal Water Loss
- * Improvement of "Normal" Barrier Function of the Skin
- * Normalization of Keratinization Process

MAJOR FATTY ACID COMPOSITION OF SOME OILS



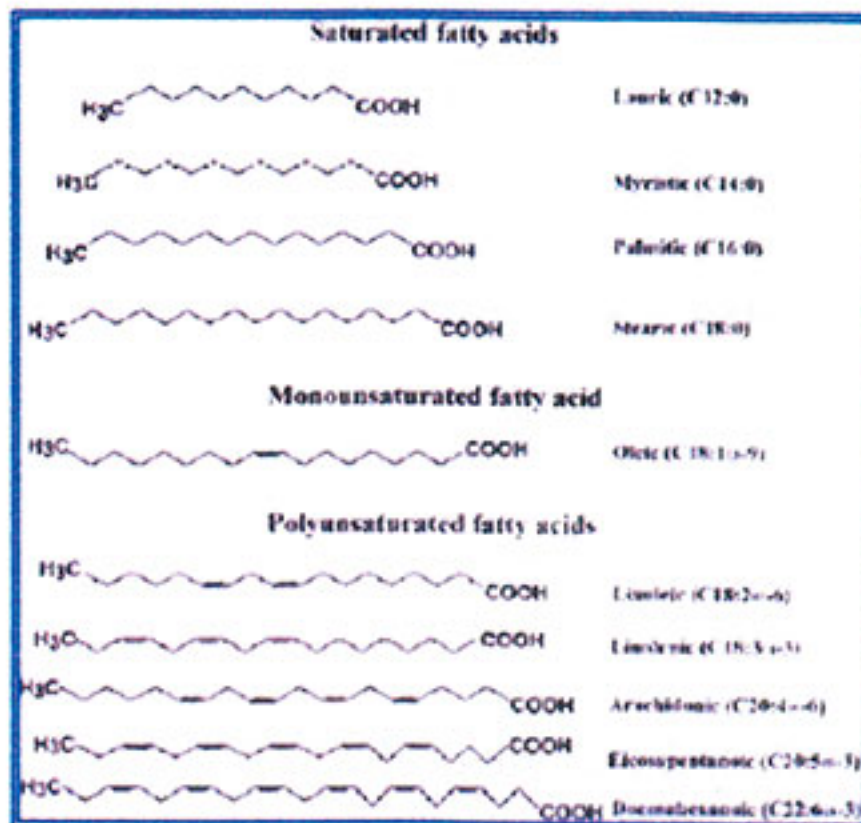
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TOCOPHEROLE OF PLUKENETIA VOLUBILIS

Tocopherole	[mg/100 g]
α-Tocopherol	0,54
γ-Tocopherol	112,2
Plastochromanol-8	0,55
γ-Tocotrienol	0,48
δ-Tocopherol	62,17
Gesamt	175,94

CHEMICAL STRUCTURAL FORMULA OF MAIN SATURATED, MONOSATURATED AND POLYSATURATED FATTY - ACIDS

5/5





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Dosage – Solubility – Processing

A- DOSAGE:

From 2 to 10%.

B- SOLUBILITY:

Lipo-soluble.

C- PROCESSING:

INCA OMEGA OIL is compatible with most of the raw materials normally used in cosmetics, nevertheless, it is the duty of the formulator to make sure of the stability of the formulae with the necessary tests.

It would be preferably incorporated into cosmetic preparations during the oil phase preparation.

Analytical Data

- APPEARANCE: Liquid, yellow colored.
- Relative Density (at 20 °C): 0,90 – 0,93
- Refractive index (at 20 °C): 1,48
- Saponification material: 0,23 – 0,25
- Acidity index: =1
- Peroxyde index (meq/kg): =20

- PRESERVATIVES: None

- MICROBIOLOGY: Total germs: =
1.000 cfu/gr Yeasts
and molds: =1.000
cfu/gr Pathogen:
Absence

- TOLERANCE: Excellent

- STORAGE: Store at room temperature, dry and away from light.

If original container is opened, to avoid secondary microbiological contamination handle with special care and keep refrigerated.