

Rosehip Seed Oil



BOTANY

Rosa moschata Herrm. (synonym *Rosa eglanteria*). Common name *rosehip*. This wild shrub is a member of the Rosaceae family. It reaches more than 2 m in height; stems are flexible and bent, covered by purplish thorns; leaves are deciduous, pinnate, glossy, margins serrate; flowers have 5 pink petals, brightly yellow stamens and a musk-like aroma; they are arranged in thick terminal cobs. Flowering occurs once per season. The fruit is an ovoid red- or orange-colored cynorrhodon with rests of thorny sepals at the tip.

This shrub is native to Europe; it is cultivated especially in the United Kingdom because of its beautiful pale-colored flower. However, it grows wild in the foothills of the southern Andean Mountains, in Chile and Argentina, and in the Mendoza piedmont.

Rosehip seed oil is produced from the seeds of *Rosa moschata* Herrm

CHEMISTRY

Fatty acids

Rosehip seed oil contains a high percentage of poly-unsaturated essential fatty acids.

Table 1 lists the main fatty acids in rosehip.

	%
Poly-unsaturated fatty acids:	
Oleic acid (C18:1)	10-20
Cis-linoleic acid (C18:2 n-6)	41-50
α-linolenic acid (C18:3 n-3)	26-37
Saturated fatty acids:	
Palmitic acid (C16:0)	3-5,3
Stearic acid (C18:0)	1-3

Table 1. Rosehip seed oil fatty acid composition (Council of Europe, 2001; Flores Ahumada DA, 2005).

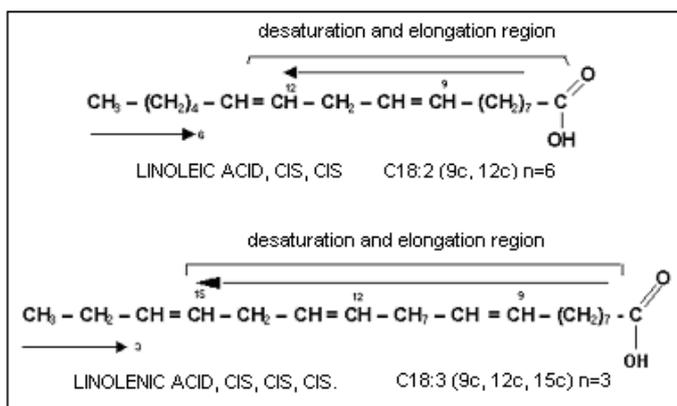


Fig.1. Chemical formulas of the linoleic and linolenic acids (Flores Ahumada DA, 2005).

Other active principles

It also contains other substances such as transretinoic acid, tannins, flavonoids, vitamin C and β -carotene (Flores Ahumada DA, 2005).

TRADITIONAL USES

Rosehip seed oil is a unique product that provides amazing benefits to the skin, and has consequently become of interest worldwide. The high nutritive content of rosehip seed oil and its natural corrective and cell regeneration properties make this product the best ally for different cosmetology and dermatology treatments.

COSMETIC PROPERTIES

Skin conditioning activity

Rosehip seed oil is essential fatty acids-rich oil with an important action on the regulation of skin elasticity and the restoring of skin moisture.

Essential fatty acids are major components of all cell membranes, to which they provide permeability and elasticity. These acids play an essential role in the formation of ceramides – the most important lipids for the epidermis barrier – and are therefore, essential for the stability and function of the skin barrier (Flores Ahumada DA, 2005).

Emollients (mainly lipids and oil) enhance skin flexibility and have moisturizing and soothing actions. These compounds repair the skin and influence skin permeability, thus improving the barrier function. The stearic, linoleic, oleic, linolenic and lauric acids are habitually used emollients in cosmetics (Kraft, JN & Lynde CW, 2005).

Because of their lipophilic nature, vegetable fats and oils are good emollients. These compounds efficiently prevent water loss through the epidermis because of their occlusive properties. Different studies have indicated that higher unsaturation degrees correspond to lower viscosities and larger penetration rates into the skin.

Much research has been conducted in recent decades about the role of essential fatty acids in the formation and function of the barrier on the superficial skin layers. Some studies showed reduced transepidermal water loss (TEWL) after application of linoleic acid (LA) and γ -linolenic acid (GLA) for some days. Different LA or GLA treatments resulted in stable TEWL for several days; however, if other fatty acids were applied, this effect immediately reverted. It was concluded that the action of LA and GLA on TEWL was not only due to their occlusive effects, but that these fatty acids also produced structural changes in the epidermis, in particular in the horny layer (Le Poole, H.A.C., 1995).

Fatty acids deficiency in humans produces skin lesions and deterioration, which result in desquamation, dry skin, loss of flexibility and impaired smoothness. Keratinization becomes disorganized and the mitotic index and DNA synthesis are reduced. Skin protection is largely reduced and perspiration is noticeably increased. Skin lesions that result from essential fatty acid deficiency can be reverted by percutaneous application of oils containing a major proportion of these acids; therefore these oils are used in dermatology and cosmetology for the treatment of dry and wrinkled skin, and to promote wound healing by stimulating tissue regeneration (Holguera, M.C., 1993).

Therefore, rosehip seed oil is highly recommendable to formulate cosmetic products with skin repairing and conditioning activity.

Regenerative activity

Rosehip seed oil is rich in unsaturated fatty acids, linoleic and linolenic acids, known to be involved in prostaglandin synthesis, membrane generation, defense mechanisms, growth and other cell regeneration related processes. Therefore this oil is of great use to promote epithelization (Moreno Jiménez JC et al., 1990).

A study was carried out with women between 45 and 68 years, who had undergone unilateral or bilateral mastectomy. These women applied rosehip seed oil after suture removal, twice a day (morning and evening) for a three months period. After three months, less apparent scars, no skin thickening and improved skin elasticity and color were observed (Pareja B & Kehl H, 1990).

In a study, 10 patients suffering from varicose ulcers and post-surgery wounds were applied a 26% rosehip seed oily solution. Enhanced epithelization was observed in these patients as compared with a control group. No side effects were observed. These results lead the researchers to the conclusion that this preparation is helpful to treat this kind of processes (Moreno Jiménez JC et al., 1990).

Camacho F et al (1994) also evaluated the effects of pure rosehip seed oil on post-surgery scars and defects.

Some authors attribute the beneficial actions of rosehip seed oil particularly to transretinoic acid since this compound has marked anti-inflammatory activity, which improves cell irrigation thus accelerating tissue regeneration (Flores Ahumada DA, 2005; Gille et al, 1997).

Therefore, rosehip seed oil is of great use to formulate cosmetic products with regenerative activity on the superficial skin layers and for the reduction of scars of any etiology.

Invigorative activity

Additional to its effects on the outermost layers of the skin, rosehip oil also has invigorative activity on the innermost skin cell layers, fibroblasts and cells that produce collagen, elastin, hyaluronic acid and which are responsible for skin firmness and elasticity (Kasayama S et al, 1994; www.elcuerpo.es/01_rosamosqueta.php).

Doctors Pareja B and Kehl H (1990) attributed rosehip seed oil invigorative activity mainly to transretinoic acid.

Therefore, rosehip seed oil is recommended to formulate cosmetic products with firming action on deep skin layers.

Photo-ageing preventive and corrective activity

Rosehip seed oil has also shown beneficial effects on photoaged skin. Exposure to sunlight produces important morphological changes to the skin (photoaging, dermatoheliosis).

Dermatoheliosis occurs in different ways and at different intensities, from superficial wrinkles or active keratosis to variations in the distribution of melanin granules. Pareja B and Kehl H (1990) carried out a study with persons, who habitually used to spend the summer in beach areas. The study involved 20 women between 25 and 35 years. The most frequently found signs were superficial wrinkles and spots. These women applied rosehip seed oil on their faces for a 4 months period (from May to August, 1988). Significant changes were observed from the third week on: superficial wrinkles and spots were reduced. By the end of the fourth month, their skin appeared smooth and fresh, almost without spots.

Therefore, rosehip seed oil is recommended to prevent and correct photoaging and skin disorders related to sunlight radiation, as well as to reduce skin spots.

Finally, we would like to mention that the reference publication *Plants in cosmetic* Vol.II (Council of Europe Publishing, 2001) includes a monograph on rosehip seed oil, where the following cosmetic effects are attributed to it:

- moisturizing, emollient, antiaging
Up to 6% in emulsions aimed at the reduction of superficial wrinkles
- other possible effects: anti-inflammatory, skin ulcers treatment

COSMETIC APPLICATIONS

Action	Active	Cosmetic Applications
Regenerative	Fatty acids Transretinoic acid	-Epithelizing -Firming agent for superficial skin layers -Anti-ageing
Invigorative	Transretinoic acid	-Firming agent for deep skin layers
Skin conditioning	Fatty acids	-Moisturizing -Soothing
Against photo-ageing	-	-Anti-ageing -Reduces skin spots

RECOMMENDED DOSE

The recommended dose is between 0.5% and 5.0%.

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