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COSMATIC PRESPECTIVE OF LOTUS

(*NELUMBO NUCIFERA*)

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Abstract:

In today's time, cosmetic is an essential part of life. In nature, many types of natural herbs are present that are used as cosmetic purposes. A per review Lotus is a natural herb used as cosmetics for anti-oxidant, anti-wrinkle, skin irritation properties, etc. Different types of lotuses (white lotus, lotus blue, pink or red lotus, lotus yellow), taxonomical classification, chemical constituents, extraction (color, scent), available formulation (color lip gloss), application, etc. *Nymphaea lotus* L., or water lily, is a well-known traditional medicinal plant. This ensures maximum efficacy with minimum side effects. In addition to the fragrance and colors, medicinal properties and anti-wrinkle properties.

Keywords: Lotus, Nymphaeaceae, B-sitosterol, Nelumbo Adans, Cosmetic.

I. INTRODUCTION

Cosmetics are a necessary part of modern life. Ayurveda mentions a number of plants that can be utilized to achieve healthy skin and a radiant complexion. More than 200 plants, minerals, and lipids are mentioned in Ayurvedic literature as ways to preserve and improve skin health and beauty. The trend for natural products is back in vogue today, and Indian herbs have been increasingly popular in recent years. India has been using and practicing ayurvedic cosmetics for thousands of years; they have no negative effects and are well-researched and supported. The lotus plant emerges with strong stalks that hold its leaves firmly in place, its roots anchored in the muck. Sometimes the leaves are elevated, and there are always flowers. Cosmetics are now seen as necessary items for daily living. Ayurveda mentions a number of plants that can be utilized to achieve healthy skin and a radiant complexion. More than 200 plants, minerals, and lipids are mentioned in Ayurvedic literature as ways to preserve and improve skin health and beauty. The need for natural products is back in vogue today, and Indian herbs have become increasingly popular in recent years. In India, ayurvedic cosmetics have been used for hundreds of years; they have no known negative effects and are thoroughly researched and supported. The main edible parts of the aquatic vegetable lotus (*Nelumbo nucifera* Gaertn.) are the rhizome, often known as the root, and the seeds. You can eat almost all of the plant's parts. Lotus seeds (*Semmelumbinis*) and their processing byproducts are widely consumed in Asia (China, Japan, India, and other Southeast Asian countries), the Americas, and Oceania because they contain a high concentration of physiologically active chemicals (Mukherjee et al. 2009); see Li et al. 2014 for additional details. Lotus seeds have a 3,000-year cultural legacy in China. (1)

II. TAXONOMIC CLASSIFICATION

Division: Magnoliophyta - Flowering Plants;

Class: Magnoliopsida;

Subclass: Magnoliidae;

Kingdom: Plantae - Plants;

Sub Kingdom: Tracheobionta - Vascular Plants;

Super Division: Spermatophyta - Seed Plants;

Top rank: Protocarya Proteales is the order.

Family: Lotus Family, Nymphaeaceae;

Genus: Lotus, Nelumbo Adans;

The sacred lotus, *Nelumbo nucifera* Gaen, is the species. (2)

III. MORPHOLOGY

1. Leaf:

Large leaves of both airborne and floating varieties, measuring between 20 and 90 centimeters, are present. The leaves are leathery when fresh, but as they dry, they become nearly membranous and brittle, with brownish red blotching on the lower surface. The petioles of the aerial leaves are erect and stout white, while those of the floating leaves are not strong enough. The diameter of the leaves is abruptly acute to form a short tip. Petiolate, entire glaucous, non-wettable, strong cupped in case of aerial leaves and flat in case of floating ones, radiantly nerved.

2. Flower:

Sepals, petals, and stamens are spirally arranged and gradually pass one into another. Solitary, large, 10–25 cm in diameter, white pink or pinkish white fragrant peduncles arising from the nodes of the rhizomes, sheathing at the base, 1-2 cm long, green or blackish green, hard and stout, smooth or rough due to the presence of numerous small scattered prickles.

3. Rhizomes:

The rhizomes have a diameter of 0.5 to 2.5 cm and a length of 60-140 cm. Nodes and inter-nodes are present. The color ranges from yellowish white to yellowish brown. It is smooth and longitudinally striated with brown patches. Freshly sliced, it emits a mucous juice and has numerous larger cavities encircled by a few bigger ones; the fracture is fibrous and strong. (2)

IV. VARIOUS VARIETIES OF LOTUS:

One kind of water lily that is a member of the *Nymphaea* and *Nelumbo* genera is the lotus flower.

1. White lotus:

The *Nymphaea* lotus, or Egyptian white lotus, is a simple yet austere bloom. Grown throughout East Africa and Southeast Asia, this plant is also called the Egyptian White-Water Lily or Tiger Lotus. It grows in shallow waters, has tooth-edged leaves and spherical petals, blooms at night, and is open till midday. (3)



Figure 1 : White lotus

2. Lotus blue:

Nymphaea caerulea, the lesser blue lotus bloom, is indigenous to the Nile. The lotus, sometimes called the Egyptian Blue Water Lily, has smooth-edged, floating leaves and slender, pointed petals. It shuts at sunset and opens its blossoms in the morning. (3)



Figure 2: Lotus blue

3. Pink or red lotus:

The national flower of India is the red or pink lotus (*Nelumbo nucifera*), also referred to as the sacred lotus or Indian lotus. Originally from southern Asia, the lotus flower was brought to Egypt approximately 2,500 years ago. However, it is no longer present in the Nile valley. Usually found on strong stems that rise several centimeters above the water, this plant bears blooms. (3)



Figure 3: Pink or red lotus

4. Lotus yellow:

Native to California, the yellow lotus (*Nelumbo lutea*) is found in the eastern United States and Canada. It goes by the names Water-chinquapin and American lotus as well. The fragrant, pale golden blooms are smaller than the sacred lotus. (3)



Figure 4: Lotus yellow

V. CHEMICAL CONSTITUENTS:

1. Flower Petals:

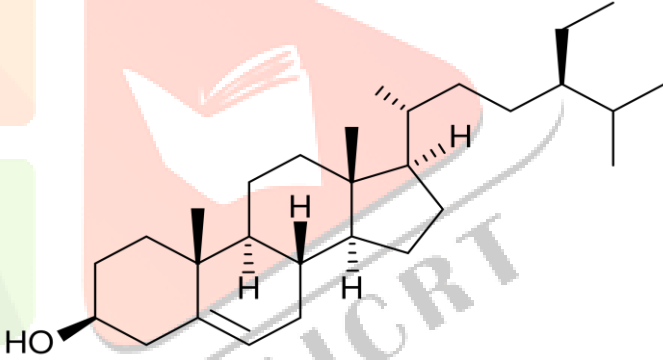
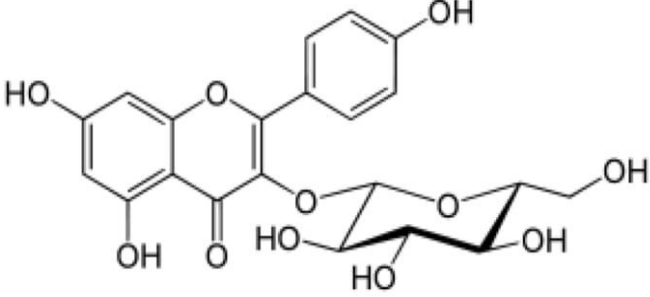
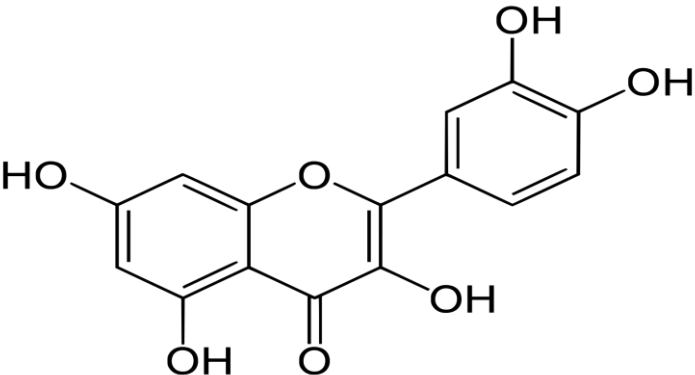
The *Nelumbo nucifera* flower petals' ethanolic extract contains eight distinct compounds:

- A. myricetin-3-O-D-glucopyranoside,
- B. quercetin-3-O-D-glucuronide,
- C. astragalol,
- D. quercetin,
- E. 3,4-dihydroxybenzoic acid,
- F. Kaempferol,
- G. p-hydroxybenzoic acid,
- H. b-sitosterol.

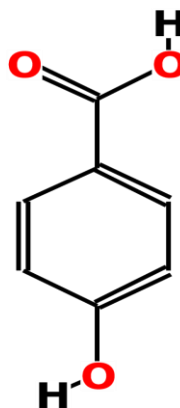
Compounds A, B, D, E, F, G, and H were among those isolated from *Nelumbo nucifera* petals for the first time. Compounds A and E were initially discovered in the genus *Nelumbo*

2. **Rhizomes:** By using chemical and spectroscopic techniques, the rhizomes of *Nelumbo nucifera* yielded maslinic acid, hyptatic acid-A, 2a, 24 diacetoxye 3 beta hydroxyoleane 12 ene 28 oic acid (new triterpenoid), betulin, and lupeol.
3. **Seed Embryos:** Four familiar chemical compounds, liensinine, neferine, anisic acid and isoliensinine, as well as three bisbenzyl isoquinoline alkaloids, nelumborines A and B, and nelumboferined were identified from the embryos of *Nelumbo nucifera* seeds
4. **Seeds:** 1-Heptadecanol; 1-Monolinoleoylglycerol trimethylsilyl ether; 3-hydroxy-7-isopropenyl-1,4 dimethyl-2,3,4,4a,5,6,7,8-octahydronaphthalen-2-yl ester; 4,22-Stigmastadiene-3-one; 9,12-Octadecadienoic acid; Di-n-octyl phthalate; 11-Hexadecenoic acid; Acetic acid. (4)

Table No. 1: Structure of Chemical Constituents

Beta Sitosterol	
Astragalol	
Quercetin	

p-hydroxybenzoic acid



VI. EXTRACTION

1. EXTRACTION OF COLOR FROM LOTUS:

Take fresh pink sacred lotus petals of species *Nelumbo nucifera* from and sun-dried to evaporate moisture. To a preheated mixture of alcohol: water in a ratio of 30:70 dried petals were added and reddish pink pigment was obtained in a few minutes. A pinch of citric acid was added to intensify color. So as to fix the color obtained, benzoin and glycerin were added as shown in figure 6. (5)



Figure 6: Extraction of lotus from lotus (5)

2. Extraction of scent from Lotus:

Nelumbo nucifera pink sacred lotus petals that were fresh and damp were gathered and put to a hot alcohol: water (70:30) mixture. After adding the soaked petals, the container was sealed and let to sit for an hour. After the petals were de-pigmented, the filtrate was separated. Benzoin and glycerin were used to adjust the scent that was obtained as shown in figure 7. (5)



Figure 7: Extraction of scent from lotus (5)

VII. AVAILABLE FORMULATION:

Colored lip gloss:

Liposomal variant of the tinted lip gloss was created with a natural supply of colorant. Mannitol and cholesterol were precisely weighed and placed to a round-bottom flask after being pre-treated in an ultra sonicator to eliminate moisture. Liquid lecithin was added in drops. Olive oil and date seed oil were added. To stop the lecithin from coagulating, the mixture was gently cooked in a water bath. The solvent added was chloroform. After the RBF was put on an agitator for about an hour, a layer started to form. A particular ratio of alcohol, aroma, and color was added. After an hour, the RBF was taken out once more for agitation. After being transferred into a petri plate, the contents were frozen. (5)

Table No. 2: Lotus strengths, weakness, opportunities, and challenges:

STRENGTHS	An excellent source of antioxidants is lotus. It encourages the development of new skin cells and aids in cell turnover. Over time, Lotus has developed innovative products and keeps up the high caliber of its brand. Lotus employs a varied workforce and maintains operations in nearly every part of India. It employs a sizable workforce, who work there in enhancing the company's brand name. Integrated and forceful marketing approach. Constantly at the top of the brand portfolio rankings. Aiming for tiny towns.
WEAKNESSES	For Indian consumers, Lotus items are incredibly expensive. The products' quality ranges widely.
OPPORTUNITIES	Brand growth via increasing usage depth and frequency across all categories. Improving customers to fresh heights of quality and efficiency by means of creativity. Building a brand's image through cooperation with top Lotus fashion designers.
CHALLENGES	The Lotus brand is synonymous with elegance and grace, serving as a formidable competitor in the market. Its aggressive and highly competitive local and international market contest. In tiny towns and rural areas, there are products with false perceptions restrictions. Prolonged absence of a recognizable brand identity. (1)

VIII. APPLICATION:

1.Skin irritation

There were no appreciable differences between the green tea-treated group's skin scaliness levels and the pre-treatment values. When compared to baseline values, a single 5% lotus extract treatment dramatically increased the skin scaliness parameter in the lotus-treated group; however, this effect was statistically only seen after 60 days of therapy ($p = 0.045$). However, the green tea + lotus combined treatment had a significant effect on skin scaliness after 30 days and 60 days of treatment. (6)

2.Wrinkles in skin

At days 30 and 60, the green tea and lotus combo treatment's efficacy in minimizing facial wrinkles was noticeably comparable to baseline values. (6)

3.Antioxidant Activity

As natural antioxidant molecules, flavonoids play a vital function in the natural defense mechanism to detoxify free radicals or reactive oxygen products (e.g., hydroxyl radicals, superoxide or singlet oxygen), which are extremely reactive agents that pass across the human/animal body and cause detrimental effects on cells. The antioxidant potential of *N. lotus* extracts has been intensively investigated, revealing their important role as free radical scavengers to prevent and reduce the damage caused by reactive oxygen species. (7)

IX. CONCLUSION:

A common herb in cosmetics is lotus. According to reports, it contains cooling, whittler, anti-acne, anti-wrinkle, and soothing, relaxing qualities. AHAVA Mineral Botanic Body Lotion, Clarisonic daily acne cleanser, Lotus sunscreen, Veet hair removal gel, and several Neutrogena products are among the marketed items that contain lotus and its parts or extracts. It has consistently shown to be a very helpful and advantageous herb. This page provides the information you need about lotuses. Although it has been widely used, its use is still encouraged and provides a broad range of study exploration opportunities. Lotus is a common herb used in cosmetics. It's said to have cooling, whittler, anti-acne, anti-wrinkle, and calming, relaxant properties. Clarisonic every day and AHAVA Mineral Botanic Body Lotion.

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