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MANJISTHA: A COSMETIC POWERHOUSE FOR SKIN CARE

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ABSTRACT

In Ayurveda by using herbal product we can improve the external as well as internal skin cell. Rubia cordifolia L., commonly known as Manjistha, is a plant with a long history of use in traditional medicine system. It is a climbing or scrambling herb, with red rhizomatous base and root. It is well-regarded for its skin care benefits due to its properties that help improve complexion, even out skin tone, lighten dark spots and cure acne. Its effectiveness is attributed to its qualities due to its Varnya, Rakta-prasadaka, Rakta-shodhaka, Vishaghna, Rasayana. Its phytochemical constituents include anthraquinones, glycosides, saponins, phenols, lactones and oils (essential and fixed) flavonoids, alkaloids, and tannins. Manjistha also exhibits anti-inflammatory, anti-oxidant, anti-acne, immunity-enhancers, wound healing, anti-allergic etc. Manjistha is associated with wide range of therapeutic properties. Conventional treatments for acne frequently fall short, with limitations related to efficacy, cost, and potential side effects.

KEYWORDS: *Rubia cordifolia L.,Manjistha, roots, Skin, anti-oxidant.*

INTRODUCTION

Beauty refers to the combination of features in a person that brings joy to the senses or uplifts the mind and spirit[1]. The stem of Rubia cordifolia, also called as Indian Manjistha, from the Rubiaceae family, is used to enhance skin colour, texture, and appearance of skin[2].

Historical records indicate that Manjistha was a key natural dye for hair, food in China and India. In 2000 B.C. it was employed in traditional remedy to treat wounds, ulcers, skin conditions, and inflammatory diseases. It was first documented in the Huangdi Neijing and found in several classical Chinese texts like the Bencaijing Jizhu, 52 Neijing, Shu Bencao, and History of Chinese Traditional Medicine[3]. Appearance of Manjistha show in fig. no.1

Microscopy

The mature stem has a cork layer that peels off in places, forming a dome like structure with multiple layers of squarish, thin-walled cells. Beneath this, the secondary cortex has 3-5 layers of thin-walled cells, some with calcium oxalate crystals or blank sandy masses. The secondary phloem is a wide, reddish area with sieve elements and phloem parenchyma, lacking fibers. The phloem parenchyma cells are smaller inward and larger outward, some also containing calcium oxalate crystals. The secondary xylem is a continuous reddish cylinder with vessels, tracheids, fibers, and xylem parenchyma, where vessels very in size and shape, and fibers have different thickness and size[4]. Taxonomy and Vernacular names of Manjistha show in table no.1 and table no.2

Part of Plant Used

Roots: Manjistharoots are long, smooth, and reddish with multiple cork layers containing tannin. They have a distinct cambium, thin-walled secondary cortical cells, and a continuous reddish secondary xylem of vessels and tracheids. The secondary phloem lacks fibers but has sieve elements and phloem parenchyma. In roots phellogen are not distinct. The red colour suggests anthraquinones[7]. Appearance roots of Manjistha show in fig.no.2

Stem: The stems are long, rough, and slightly woody at the base with white bark and angular, prickly petioles. They can be smooth or shiny. In cross-section, the stem is circular and smooth with pyramidal hairs on the surface and a sclerenchymatous hypodermis at the corners. The cortex, which is chlorenchymatous, aids in photosynthesis. The periderm has 4 to 11 layers of compact rectangular cells, followed by 8 to 12 layers of flattened parenchyma. The central xylem contains small vessels and parenchyma, while secondary xylem includes various tissues and larger vessels at the periphery[8] (fig.no 3)

Leaves: The leaves are smooth yet rough, 3.8-9 to 1.6-3.5 cm long, arranged in whorls of four, ovate-lanceolate with 3-9 veins. Lower leaves are larger, with a slightly cordate base and minute white prickles. The leaf structure includes a cuticle, pyramidal hairs, compact palisade cells, multilayered spongy cells, and collenchymatous layers in the midrib. Vascular bundles are collateral, closed, and consistent in number[9]. (fig.no 4)

Flowers: Manjisthahas small, fragrant clusters of white or greenish-yellow flowers. It blooms and bears fruits between August and October[10]. (fig.no 5)

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Fruits: The fruit is paired, round, smooth, and glossy, turning dark purple when ripe. It contains red juice and id tender and juicy[10]. (fig.no 6)

Substitute: Manjisthastems are frequently mixed with Rubia tinctorum (Irani Manjistha) stems in crude drugs or their formulations because they look alike. This mixing is dangerous because Rubia tinctorum contain a harmful compound, lucidin, which can cause birth defects and miscarriages. It's challenging to distinguish between the powdered or extracted forms of the two species just by looking at them under a microscope or through standard phytochemical tests[2].

GEOGRAPHIC DISTRIBUTION

Manjisthagrow in the lower hills of the Indian Himalayas, the North and Western Ghats, as well as in Japan, Indonesia, Malay, Peninsula, Java and tropical Africa. It prefers moist forests in both temperate and tropical climates, up to 3500 meters in elevation. It is a large group of hardly climbing plants with long-lived roots, found in both temperate and tropical areas. India has about 15 species, such as Indian Madder (Rubia cordifolia), Naga Madder (Rubia sikkimensis), and European Madder (Rubia tinctorum) [11].

COLLECTION & CULTIVATION

Manjisthagrows best in moist, loamy soil with heavy rainfall and needs support to climb. It can be propagated by seeds being more economical and offering high germination rates. To start a nursery, sow seeds or use treated cutting in January. While cuttings have a 90% success rate, germinating 80%-85% within 20 days. About 350 grams of seeds are required for 1 hectare in a nursery, with more needed for direct field sowing[12].

PHYTOCONSTITUENTS

Table 3 : Phytoconstituents of Manjistha[13-19]

COSMETIC USES

Manjistha can be used both internally and externally to bring a glow to human skin. Manjistha may also help to clean up pimples and skin discolouration and it can promote the healing of the skin tissues damaged by injury or infections.

For use on the skin

Manjistha is highly beneficial for managing stretch marks and itching to its medicinal properties.

Prevents Burning and Itching: Manjistha is known for its cooling properties, which can help soothe the skin and alleviate discomfort caused by burning and itching. By calming inflammation and reducing irritation, manjistha contributes to a more comfortable skin experience and promotes overall skin health.

Fights Infections: Its anti-bacterial and anti-fungal activities prevent skin infections that can result from persistent itching, keeping the skin healthy and protected.

Promotes Skin Healing: Manjistha has ability to enhance collagen formation aids in the healing of the skin tissues, making it effective in reducing the appearance of stretch marks. Its Ropana -sothahar properties further support wound healing and reduce swelling or oedema caused by itching.

Reducing Allergic Reactions: Kandughana and Vishghana properties helps prevent allergic reactions and irritation, providing relief from itching and protecting against secondary skin infections.

Enhances Skin Appearance: By balancing Pittashamak and Varnya (improving skin complexion), Manjistha enhance the texture, colour, and overall glow of the skin, making it look healthier and more radiant.

In essence, Manjistha serves as a natural remedy for various skin issues, particularly those related to itching, irritation and scarring while also promoting overall skin health and appearance.

As formulate the Face Wash, Manjistha has skin brightening properties, is rich in anthraquinones, which helps to even out skin tone and reduce the appearance of the dark spots and hyperpigmentation. When used in face wash formulations, Manjistha works to cleanse the skin by removing dirt, oil and impurities. Over time, its detoxifying effect can leave the skin looking brighter, more radiant and with a clearer complexion. Incorporating Manjistha into your Skincare routine can help you achieves a re3freshed and rejuvenated appearance.

Beauty Product: The natural dye extracted from Manjistha roots is commonly used in cosmetics and beauty products. It is a key ingredient in natural lip balms, blushes and other beauty items[13].

For use on the Hair

Manjistha has mild dyeing properties and beneficial for hair, scalp care and hair conditioning properties[14]. As it comes from a reddish root vine known as madder root which contains a red pigment used for dyeing and can be used with henna to give red tones which comes from alizarin and purpurin present in the roots of the plant. It has more potent red stain than hibiscus and beetroot. It will stain red and will noticed it even on blank hairs but this is semi-permanent colour[12].

For use on the Skin

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ADVERSE EFFECTS

Manjistha is generally safe and has no known adverse side effects.

MARKETED FORMULATIOS

Table 4 : Marketed formulations of the Manjistha

HOME REMEDIES

For Acne and Pimples

- Take 1/2- 1 teaspoon of Manjistha powder or se per your requirement.
- Add honey or rose water and make paste.
- Apply it on the affected area.
- Wait for 1-2 hours.
- Wash thoroughly with tap water.
- Use this remedy 2-3 times a week for effective relief from acne and pimples.

For Skin Disease

- Take 2-5 drops of Manjistha oil or as per your requirement.
- Mix with coconut oil.
- Apply it on the affected area once or twice a day.
- Repeat daily to get rid of the symptoms of the skin disease .

For Wound Healing

- Take 1/2 -1 teaspoon of Manjistha powder or as per your requirement.
- Add coconut oil and make a paste.
- Apply it on the affected area.
- Leave at least 4-5 hours for quick wound healing.

For Skin Glow

1. Make a paste of 1 teaspoon aloe vera gel, 1 teaspoon Manjistha powder, 1 teaspoon neem powder, pinch of turmeric and rose water.
   Apply this paste all over the face and neck for radiant[15].
2. teaspoon of besan, 1 teaspoon of Manjistha powder, and 2 pinches of wild turmeric powder. Add rose water to create a smooth paste.
   Apply to your face and neck, leave it on for 20-25 minutes, then rinse off [15].
3. Mix 1/2 teaspoon of Manjistha powder with 1 teaspoon of rice flour.
   Apply to your face, leave on for 30 minutes, and rinse off [15].

For Soothe Inflammation and Reduce Redness

- Prepare a Manjistha tea by steeping Manjistha roots or powder in hot water for 10-15 minutes.
- You can also find Manjistha tincture available commercially.
- Allow the tea or tincture to cool, then use it as a toner by applying it to the skin with a cotton pad. Which can help soothe inflammation and reduce redness[15].

CONCLUSION

Manjistha(Rubia cordifolia) holds substantial promise as a beneficial ingredient in cosmetics, supported by both its historical significance in Ayurvedic medicine and contemporary scientific research. This herb is recognized for its powerful anti-oxidant, skin-brightening, anti-acne and anti-inflammatory properties which make it effective in treating various skin concerns such as hyperpigmentation, acne and signs of aging. The therapeutic benefits of Manjistha are largely attributed to its bioactive compound, including anthraquinones and tannins, which provide these effects through their ability to reduce inflammation, neutralize oxidative stress, and even out skin tone. By integrating traditional knowledge with modern scientific validation, Manjistha emerges as a promising component for advancing skincare solutions. Further research is needed to optimize its application and confirm its safety and effectiveness in cosmetic product, but its current potential suggests it could play a significant role in future skincare innovation.

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Fig. 1: Manjistha



Fig. 2 : Roots of Manjistha



Fig. 3 : Stem of Manjistha

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Fig.4 : Leaves of Manjistha



Fig.5: Flowers of Manjistha



Fig.6 : Fruits of Manjistha

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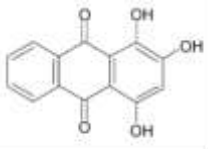
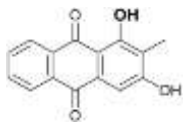
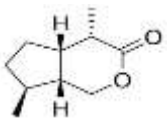
Table 1: Taxonomy of Rubia cordifolia[5]

Kingdom	Plantae
Class	Dicotyledons
Subclass	Sympetalae
Order	Rubiales
Family	Rubiaceae
Genus	Rubia
Species	Cordifolia
synonym	Jingi, Samanga, Vikasa

Table 2: Vernacular names of Rubia cordifolia[6]

English	Indian Madder
Hindi	Manjit, Manjistha
Sanskrit	Aruna, Bhandi
Marathi	Manjestha
Tamil	Mancitti
Gujarati	Majitha

Table 3 : Phytoconstituents of Manjistha[13-19]

Chemical	Type	Description	Structure
Anthraquinone	Organic compound	Include purpurin and manjistin present in root part if the plant, Purpurin has anti-genotoxic activity. Other Anthraquinones are present in plant are Mollugin, 1,3-dihydroxyanthraqunone, 7-hydroxy-2-methylanthraquinones, Alizarin, Lucidin, Ruberythric acid, 1-methoxymethylanthraquinone etc. Mollugin is good anti-inflammatory agent.	 (fig.1.7: purpurin)
Saponins	Glycosides	Contribute to the overall pharmacological activity of the plant. Example. rubioside and cordifoliside.	
Alkaloids	Organic compound	Include compound like Rubiadin, which show hepatoprotective effects.	 (fig.1.8: Rubiadin)
Iridoid	Glycosides	6-methoxygeniposidic acid is the iridoid phytochemical which has anti-inflammatory and hepatoprotective activity.	 (fig.1.9: Iridoid)
Essential oils	Volatile compounds	Some of the identified volatile compounds include various terpenes and aldehydes. Can have anti-microbial and soothing effects.	

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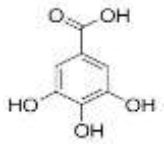
Tannins	Polyphenolic compound	Which shows anti-oxidant activity. Example. gallic acid	 (fig.2.0: Gallic acid)

Table 4 : Marketed formulations of the Rubia cordifolia

Sr. No.	Type	Brand Name	Company Name	Price	Dosage
1.	Powder	Genius Herbs	Genius Nature Herbs Private Limited	240	½ teaspoon once or twice a day
2.	Tablets	Himalaya	The Himalaya Drug Company	240	1 tablet twice a day
3.	Syrup	KERALA ayurveda	Kerala Ayurveda, Kerala Ayurveda Limited.	175	15ml with 60ml water twice a day before food
4.	Face Wash	ROOT & HERBS	ARUESA AYURVEDA	890	-
5.	Cream	Auritta	Vivaamart Enterprises India Pvt. Ltd.	499	-
6.	Capsule	Vita Green	Green Cross Health Innovation	259	1 capsule thrice a day

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