



Traditional Herb For Cosmetic Purposes: *Cyperus Rotundus*

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ABSTRACT:

Cyperaceae is a considered one of the most broadly dispensed species within the global. *Cyperus rotundus* especially observed in Eastern, Asia, Africa, Pacific, Europe, and India. The plant reproduces through seed and rhizomes and tubers. The extent of reproduction is pretty speedy underneath hot and moist circumstance. *Cyperus rotundus* has been extensively used inside the moisturizer and soothing houses and enhance hair texture and manageability. The good plant combines with other plants, releasing many of the toxins found in the basal seed or tuber. All *Cyperus rotundus* used in cosmetics such as ointments, oils, powders, creams and lip balms are extracted from the *Cyperus rotundus* plant. There are many plants that contribute antioxidants. Many of the poisons present in the base seed or tuber are released when the good plant mixes with other plants. The *Cyperus rotundus* plant is the source of all *Cyperus rotundus* used in cosmetics, including ointments, oils, powders, creams, and lip balms. Plants are a great source of antioxidants. Overconsumption of this extract may result in gastrointestinal issues, allergies, and other adverse effects like headaches, exhaustion, and dizziness. *Cyperus* is a plant that is frequently used in traditional medicine for pain relief, inflammation, and calming tea. Cream and Hair Treatment It is also referred to as Nagarmatha, and it contains a variety of medical qualities, including the ability to reduce inflammation and release antibiotics and other inflammatory chemicals from the body.

INTRODUCTION:

The cosmetic products are created for software on the frame cleansing cause, beautifying or changing look and enhancing the beauty.[1] *Cyperus rotundus* is a extremely versatile medicinal plant having ability pharmacological movements used world extensively no longer best to treat various ailments however also as a preventive treatment. *Cyperus rotundus* belongs to own family cyperacea that is the largest circle of relatives of monocotyledons.[2,6]

HISTORY: Its far originated from India however it has been delivered around the world while other agree with that the starting place is more extensive spread along with northern and Jap components of Australia . Its far a international species observed in tropical and sub-tropical temperate region of the arena. It is present in 92 countries. [3] Some authorities believe it originated in India 2,000 years ago while others think its origin may be more wide spread including northern and Easter Australia. Ancient time cyprus rotundus was used by the ancient greeks and romans for its medicinal culinary and cosmetic properties. The greek physician Hippocrates (460 – 370 BCE) mentioned its used in treating various ailments.

Medieval Period – During the middle ages, Cyprus rotundus was used in traditional medicine to traet digestive issues, skin condition and respiratory problems.

16 – 19th Centuries – The plant was cultivated and used Cypriot cuisine, particularly in soups stews and swads. Its leaves and seeds were also used to make teas and infusions. Cyprus rotundus has been and integral

part of Cypriot culture and tradition for centuries valued for its versatility nutritional value and medicinal properties. Its history reflects the island's strategic location at the crossroads of civilization and trade routes. Magnoliophyta cyperaceae is the largest family of monocotyledons. It is a pestiferous perennial weed. Determined generally growing in paddy fields in temperate and tropical locations. [4] It has a rhizome part which is definitely geotropic essentially which has the medicinal houses to being with the coloration of rhizome is white however it will alternate to brown and becomes woody on maturation when it reaches to the top level of ground then it forms a spherical body known as basal bulb from where the shoots will stand up. It also forms a tuber which shops the meals and it will give upward push to new rhizome.[2] Scaly creeping rhizomes bulbous at the base and springing up singly from the tubers which might be about 1-3 cm long. [5] The tubers are externally blackish in shade and reddish white interior with a characteristic odour. The stem grows to approximately 25 cm tall and the leaves are linear, dark inexperienced and grooved on higher surface. [5,6,7]

MICROSCOPY OF CYPERUS ROTUNDUS: underneath microscopy, *Cyperus rotundus* (spherical-leaf Mallow) famous the subsequent traits: [6]

1. Leaf anatomy:

- Epidermal cells: irregularly fashioned, with thickened walls and trichomes (hairs).
- Mesophyll: composed of palisade and spongy parenchyma cells.
- Venation: palmate, with branching veins.

2. Stem anatomy:

- Epidermal cells: rectangular, with thickened walls and trichomes.
- Cortex: composed of parenchyma cells, with scattered sclerenchyma fibers.
- Vascular tissue: prepared in a ring pattern, with xylem and phloem tissues.

3. Flower anatomy:

- Petal epidermal cells: papillate (with finger-like projections).
- Sepal epidermal cells: clean, with trichomes.
- Pollen grains: round, with a easy exine.

4. Root anatomy:

- Epidermal cells: square, with thickened partitions and trichomes.
- Cortex: composed of parenchyma cells, with scattered sclerenchyma fibers.
- Vascular tissue: prepared in a critical cylinder, with xylem and phloem tissues.

5. Powder microscopy:

- indicates a combination of parenchyma cells, trichomes, and sclerenchyma fibers
- might also exhibit starch grains, calcium oxalate crystals, or other inclusions

Cyperus rotundus various part with distinct cosmetics values:

1. Leaves:

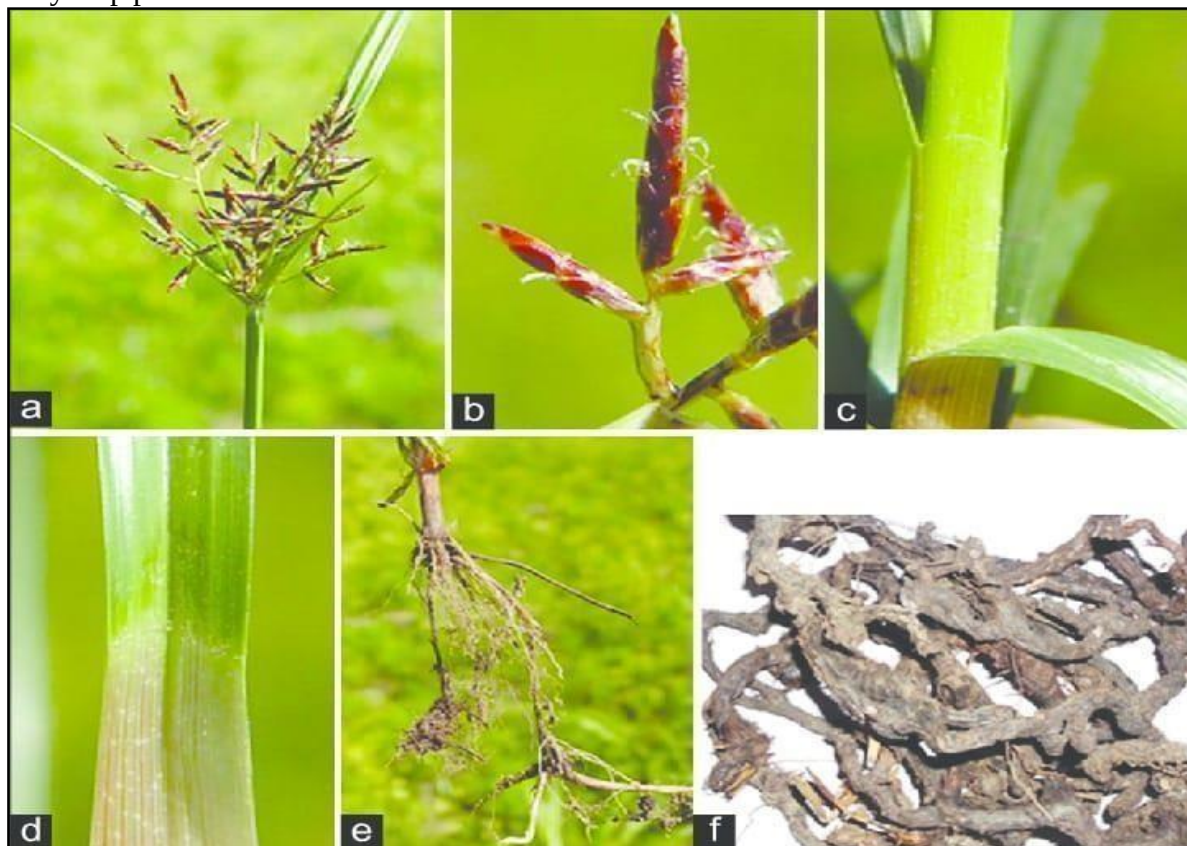
- Antioxidant and anti-inflammatory properties make them useful in anti-aging creams and serums.
- Soothing and calming effects, making them suitable for sensitive skin products.
- Rich in mucilages, which can be used as natural emollients and moisturizers.

2. Bark:

- Contains flavonoids and phenolic acids with antioxidant and anti-inflammatory properties
- Can be used in products for skin protection, soothing, and calming.
- May help reduce appearance of fine lines and wrinkles.

3. Flowers:

- Rich in anthocyanins, powerful antioxidants with anti-aging benefits.
- Can be used in products for skin brightening, evening skin tone, and reducing age spots.
- May help protect skin from environmental stressors.



(Fig no. 1.1) Various part of *Cyperus Rotundus* , (a.Fruits b.Flowers c.Stem d.Leaves e.Roots f. Rhizomes)

4. **Roots:** - Contain polysaccharides with soothing and moisturizing properties - Can be used in products for skin hydration, calming, and comfort. - May help reduce inflammation and irritation.

Seeds - Rich in fatty acids and antioxidants, making them suitable for skin nourishment and protection. can be used in products for skin moisturizing, softening, and soothing.

These parts of *Cyperus rotundus* can be used in various cosmetic products, such as:

- Skincare creams and serums
- Face masks and scrubs Body lotions and moisturizers
- Hair care products (shampoos, conditioners, masks)
- Soaps and bath product

Substitutes:

1. *Malva sylvestris* (Common Mallow): Similar in appearance and properties, but with some differences in leaf shape and flower color.
2. *Malva neglecta* (Dwarf Mallow): Smaller in size, but with similar leaf shape and properties.

3. *Althaea officinalis* (Marshmallow): Different in appearance, but with similar mucilaginous properties.

Adulterants:

1. Other *Malva* species (e.g., *Malva parviflora*, *Malva pusilla*): May be mixed with *Cyperus rotundus* to increase quantity.
2. *Plantago* species (e.g., *Plantago lanceolata*, *Plantago major*): May be added to *Cyperus rotundus* due to similar leaf shape.
3. Inert materials (e.g., starch, cellulose): May be added to bulk up the product. To detect substitution or adulteration:
 1. Morphological examination (leaf shape, size, color, and arrangement)
 2. Microscopic examination (cellular structure, trichomes, and starch grains)
 3. Chemical analysis (HPLC, GC-MS, or TLC) to identify specific compounds
 4. DNA barcoding or molecular markers to confirm species identity

Allied species:

1. *Malva sylvestris* (Common Mallow): Similar in appearance, but with larger leaves and more vibrant flowers.
2. *Malva neglecta* (Dwarf Mallow): Smaller in size, with smaller leaves and pale pink flowers.
3. *Malva parviflora* (Small-flowered Mallow): Similar to *Cyperus rotundus*, but with smaller flowers and leaves.
4. *Malva pusilla* (Dwarf Mallow): Smaller in size, with smaller leaves and pale yellow flowers.
5. *Althaea officinalis* (Marshmallow): Different in appearance, but with similar mucilaginous properties.
6. *Althaea rosea* (Hollyhock): Taller in height, with showy, pink to purple flowers.
7. *Lavatera trimestris* (Tree Mallow): Larger in size, with palmate leaves and showy, pink to purple flowers.
8. *Hibiscus sabdariffa* (Roselle): Different in appearance, but with similar mucilaginous properties.

These allied species may share similar : Morphological characteristics (leaf shape, size, color)- Chemical composition (mucilages, flavonoids, phenolic acids)- Medicinal properties (anti-inflammatory, antioxidant, soothing), Traditional uses (food, medicine, cosmetics) [7,8]

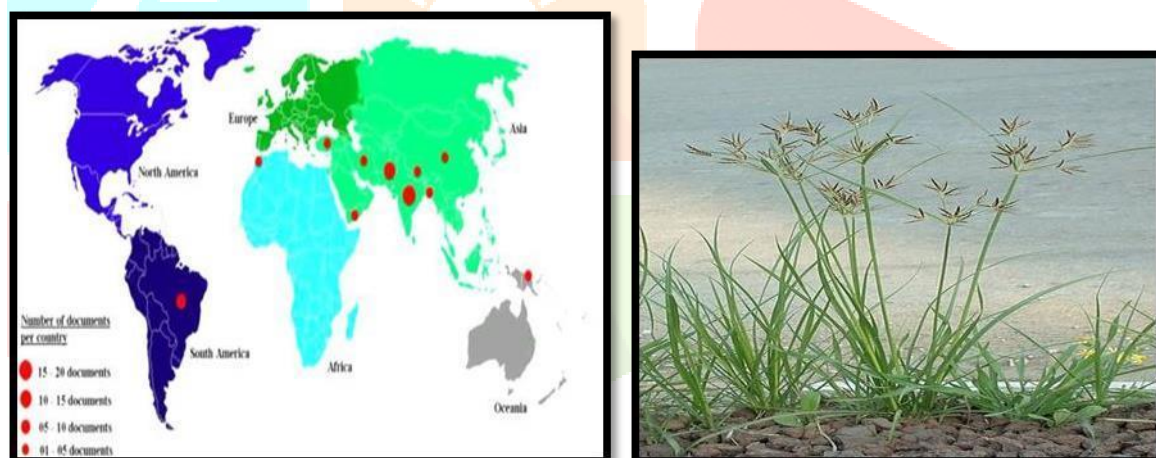
The plant components utilized in cosmetic guidance need to have types of homes like antioxidant, antiseptic, emollient, antiseborrheic, antikerolytic hobby and antibacterial and many others. these herbal merchandise declare to have much less facet outcomes, normally visible with products containing artificial retailers.[14]The elements of the *Cyperus* used are its tuber, leaves, seeds, rhizomes and oil. [15]

GEOGRAPHIC DISTRIBUTION :

It is most ancient herb in India. More than 2000 years old .It is mainly located in some regions of American,Asian, and European (north to France and Australia) and Southern Asia . Eastern Asia -China, Japan,korea,India Nepal, Pakistan . This plants have perennial sludge with triangular stem. Leaves are like grass longer (17cm-20cm) long. The inflorescence is simple or compound reddish brown colour which is supported by the bract of Roots fibres are extensively branched.The plants produced rhizomes and tubers are considerably deep in soil.They may require soil like Clay,Sand. The Tubers mainly fibres and black in colour .It is not common plant in salty soil.The plants main produce rhizomes and tubes under soil and their reproduction mainly fast under soil,it mainly required hot and moist temperature to grow.The weed effectively completed with other plants through the release of Several toxic substances contain either in basal bulbs and tubers. It is mostly grown in mountainsor coastal areas. It will mainly cultivated during summer season.[8]

DISTRIBUTION TABLE : (Table no – 1.1) - [8]

Continent	Nation
Eastern Asia	Austria, Switzerland, Albania, Bulgaria, Croatia, Greece, Romania, Serbia, Slovenia, France, Portugal, Spain
Africa	Algeria, Egypt, Libya, Morocco, Tunisia, Western Sahara, Chad, Djibouti, Eritrea, Ethiopia, Somalia, Sudan, Kenya, Tanzania, Uganda, Burundi, Equatorial, Guinea, Gabon, Rwanda, Democratic Republic of Congo, Benin, Burkina Faso, Cote D'Ivoire, Ghana, Guinea, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo, Angola, Malawi, Mozambique, Zambia, Zimbabwe, Botswana, Namibia, South Africa, Swaziland
Pacific	Marshall Islands, Micronesia, Northern Mariana Islands
Southern America	Brazil, Bolivia, Colombia, Ecuador, Peru, Argentina
Europe	Austria, Switzerland, Albania, Bulgaria, Croatia, Greece, Romania, Serbia, Slovenia, France, Portugal, Spain
Western Asia	Afghanistan, Iran, Iraq, Saudi Arabia, Yemen, Palestine, Lebanon, Syria, Turkey



(Fig no. 1.2) Geographical distribution of CYPERUS RODUNTUS [8]

COLLECTION:

1. Wildcrafting: Harvest from natural habitats, ensuring sustainable and responsible collection practices.
2. Identification: Confirm the plant's identity to ensure correct species and quality.
3. Harvesting: Collect leaves, stems, roots, or seeds, depending on the desired phytoconstituents
4. Drying: Dry the plant material to remove excess moisture and preserve quality

CULTIVATION:

This plant is occasionally cultivated for its fit to be eaten tubers in tropical place. [9]

1. Seed selection: Choose high-quality seeds suitable for cultivation.
2. Sowing: Plant seeds in well-draining soil with adequate sunlight and water.

3. Growth conditions: Provide optimal temperature (15-25°C), humidity, and light conditions.
4. Watering: Water regularly, avoiding overwatering, which can lead to root rot.
5. Fertilization: Apply organic fertilizers to promote healthy growth.
6. Pruning: Prune plants to maintain shape, encourage bushy growth, and increase yields.
7. Pest and disease management: Monitor for pests and diseases, using organic control methods whenever possible.
8. Harvesting: Collect plant material at optimal maturity for desired phytoconstituents.



(Fig.no.1.3) CYPERUS ROTUNDUS [16]

PHYTOCONSTITUENTS :

The presence of tannins, saponin, flavonoids, alkaloids, Quinones, terpenoids and phenols had been discovered to be good sized. Primary flavonoids that display properly labeled systems and nicely defined structure characteristic-relationships. areflavans, flavanones, flavones, flavanonols, flavonols, catechins, anthocyanidins and isoflavone. The biological houses of flavonoids encompass antioxidant, anti-inflammatory, antitumoral, antiviral and anti-bacterial, in addition to an instantaneous cytoprotective effect on coronary and vascular systems, the pancreas and the liver .[10,11]

(Table no. 1.2) : [10]

Tannins	Present
Saponins	Present

Carbohydrates	Present
Proteins	Present
Sterols	Present
Volatil oil	Present
Flavonoids	Present
Triterpenoids	Present

COSMETIC USES:

The beauty uses of *Cyprus rotundus* (round-leaf Mallow) are numerous, way to its wealthy phytoconstituents, including: [8]

1. Skincare:

- Moisturizing and soothing properties
- Anti-inflammatory and antioxidant effects
- Hydrating and calming benefits

2. Haircare:

- Nourishing and conditioning properties
- Improves hair texture and manageability
- Enhances shine and softness

3. Wound healing:

- Topical application for cuts, scrapes, and burns
- Promotes tissue repair and regeneration
- Soothes and calms irritated skin

4. Anti-aging:

- Antioxidant properties combat free radicals
- Improves skin elasticity and firmness
- Reduces appearance of fine lines and wrinkles

5. Sun protection:

- Natural SPF properties
- Protects against UV-induced damage
- Soothes sunburned skin

6. Lip care:

- Moisturizes and soothes dry, chapped lips
- Protects against environmental stressors

7. Eye care:

- Reduces puffiness and dark circles
- Soothes and calms irritated eyes

8. Face masks and scrubs:

- Exfoliates and cleanses the skin
- Nourishes and rejuvenates the complexion

Cyprus rotundus can be incorporated into various cosmetic products, such as:

1. Creams and lotions
2. Oils and serums
3. Shampoos and conditioners
4. Face masks and scrubs
5. Lip balms and lip scrubs
6. Eye creams and gels

ADVERSE EFFECTS:

While taken by way of mouth: crimson nut sedge tuber is in all likelihood secure when taken with the aid of mouth as a medication for up to 8 weeks.

while carried out to the pores and skin: crimson nut sedge critical oil is possibly safe whilst implemented to the skin. [12]

Cyprus rotundus (round-leaf Mallow) is normally considered safe when used appropriately. but, like all natural remedy, it may reason unfavorable outcomes in a few individuals, specifically whilst: [13]

1. Gastrointestinal issues:

- Nausea
- Vomiting
- Diarrhea
- Abdominal pain

2. Allergic reactions:

- Skin irritation
- Itching
- Hives
- Respiratory problems (rare)

3. Interactions with medications:

- Blood thinners (warfarin)
- Diabetes medications
- Blood pressure medications

4. Hormonal effects:

- May affect thyroid hormone levels
- May interact with hormone replacement therapy

5. Pregnancy and breastfeeding:

- Insufficient research; consult a healthcare professional

6. Other potential effects:

- Dizziness
- Headache
- Fatigue

- Sleep disturbances To minimize risks:

1. Consult a healthcare professional before using Cyperus rotundus, especially if you have underlying health conditions or take medications.
2. Start with small doses and monitor your body's response.
3. Avoid excessive consumption (more than recommended).
4. Be cautious when combining with other herbs or supplements.
5. Monitor blood sugar, blood pressure, and thyroid hormone levels if you have related conditions.

MARKETED FORMULATION:

Some marketed formulations of Cyperus rotundus include:

1. Creams and ointments for skin conditions
2. Hair care products for dandruff and scalp issues
3. Oral supplements for digestive issues
4. Topical gels for pain relief
5. Herbal teas for overall well-being

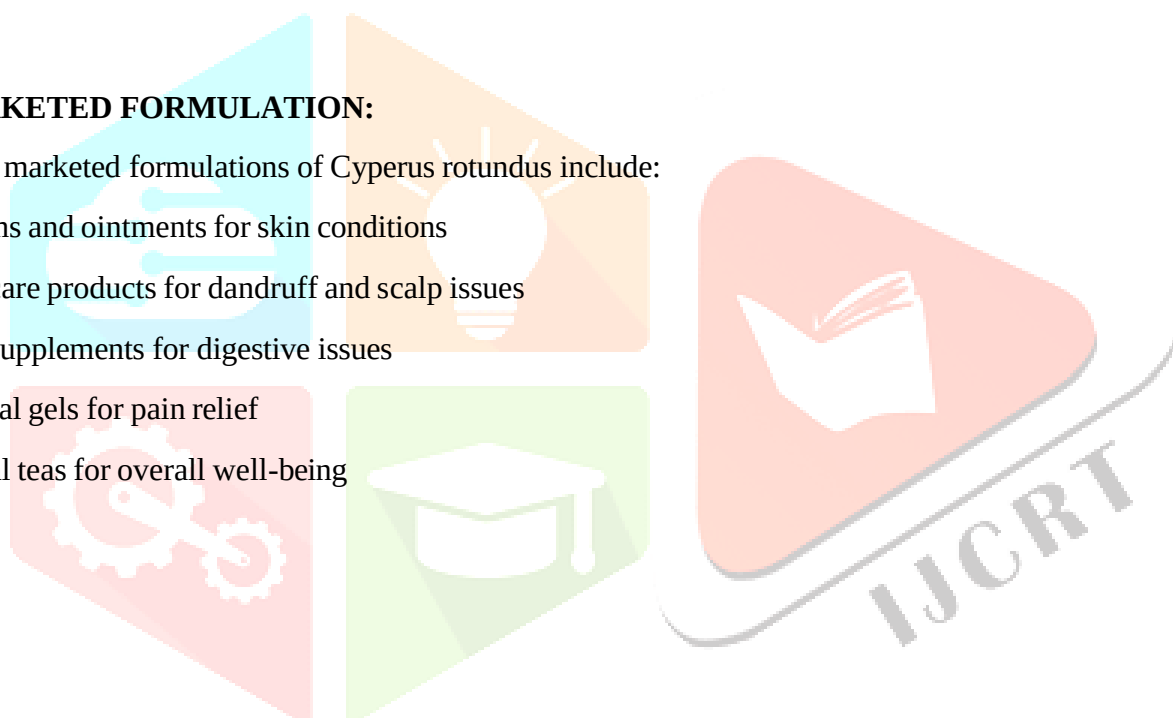


Figure	Type	Brand name	Company	Dose	Prize
	Oil	Asma Perfumes	Asma Perfumes	10 ml	Rs 120 -150
	Lipbalms	Burts Bees Beeswax Lipbalm	Burts Bees	4.25 gm	Rs 389
	Powder	Nagarmotha Powder	Nagarmotha	5 -10 gm	Rs 481
	Cream	Cyrofeet cream	Cyrofeet cream	2- 3 times a day (100 ml)	Rs 16
	Lotion	Aveda Claming Lotion	Aveda Corp	200 ml	Rs 900

(Table no. – 1.3)

HOME MADE REMEDIES:

1. Soothing Tea:

- Steep 1 tablespoon of dried Cyprus rotundus leaves in 1 cup of boiling water for 5-7 minutes.
- Strain and drink to relieve digestive issues, coughs, and sore throats.

2. Skin Soother:

- Infuse 1 tablespoon of dried Cyprus rotundus leaves in 1 cup of boiling water for 5-7 minutes.
- Let cool, then use as a compressor add to bath water for skin irritations, wounds, and eczema.

3. Hair Care:

- Steep 1 tablespoon of dried Cyprus rotundus leaves in 1 cup of boiling water for 5-7 minutes.
- Use as a hair rinse to nourish, condition, and soften hair.

4. Wound Salve:

- Mix 1 tablespoon of dried Cyprus rotundus leaves with 2 tablespoons of olive oil and 1 tablespoon of beeswax.
- Apply topically to minor cuts, scrapes, and burns.

5. Anti-Inflammatory Poultice:

- Mix 1 tablespoon of dried Cyprus rotundus leaves with 2 tablespoons of water to form a paste.
- Apply topically to reduce inflammation and relieve pain.

6. Cough Syrup:

- Steep 1 tablespoon of dried Cyprus rotundus leaves in 1 cup of boiling water for 5-7 minutes.
- Mix with honey and lemon juice to create a soothing cough syrup.

- Mix 1 tablespoon of dried Cyprus rotundus leaves with 2 tablespoons of coconut oil and 1 tablespoon of beeswax.
- Apply topically to soothe and moisturize dry, chapped lips.

CONCLUSION:

The cyperus rotundus is maximum historical herb. The all parts of cyperus rotundus has been utilized in style of pharmacological, therapeutical and cosmetical use. The elements of rhizomes, tubes, stem, bark and roots. Cyperus rotundus is broadly utilized in numerous countries of Asian continent in particular in India and Pakistan and Europe. Cyperus rotundus is an herbaceous perinnal weed. It required clay and sand. It will be grown using a variety of techniques, including seed selection, harvesting, and drying. It will also be harvested using a variety of techniques, including seed selection, sowing, maintaining growth conditions at an ideal temperature of 15 to 25 degrees Celsius, watering, pruning, managing pests and diseases, and harvesting. Next, they added the phytoconstituents (tannis, saponies, and quinones) needed for formulation. The Antioxidant, Antitumoural, Antiviral, and Antibacterial Properties of Flavonoids in Biology. When used cosmetically, Cyperus rotundus is particularly good at moisturising and hydrating skin, enhancing hair's lustre and softness, and aiding in tissue regeneration and wound healing. It may also be used for lip and eye care and has dermatologist-like effects. Their formula is also well-known for usage in powder, cream, lotion, and shampoo, among other products. Additionally, Cyperus rotundus exhibits good effectiveness against a variety of infectious diseases. One other herbal remedy that shows promise is Cyperus rotundus. It also pertains to people's effectiveness and safety. The purpose of this review is to highlight the traditional and cosmetic uses of the Cyperus rotundus plant. The pharmacological and homemade uses of Cyperus will also be examined, according to this review.

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