



The Diverse Range Of Activities Associated With The Traditional Medicinal Claims Of Patharchatta (Kalanchoe Pinnata)

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Abstract

The plant, which is a member of the Crataegaceae family, is known by its scientific name, *bryophyllum pinnatum*. It was found that this plant showed various pharmacological activities such as anthelmintic, immunosuppressive, wound healing, hepatoprotective, antinociceptive, anti-inflammatory and antidiabetic, nephroprotective, antioxidant activity, antimicrobial activity, analgesic, anticonvulsant, neuropharmacological and antipyretic. The chemicals reported from the plant belong to different classes such as alkaloid, diterpenoidal lactones, glycosides, steroids, phenolics, aliphatic compounds, etc. The phytoconstituents and pharmacological activity of the therapeutic herb *K. Pinnata* are provided in this study, which may aid in the conduct of more complex qualitative research.

Keyword-Kalanchoe pinnata, Phytoconstituent, Pharmacological activity.

Introduction

Kalanchoe, or Patharchatta, is a perennial succulent plant that is commonly cultivated in India. Its long, hollow stems have earned it the nickname "air plant" in common parlance^[2]. Kalanchoe features dark green, thick leaves and pendulous, bell-shaped blooms. Temperate areas of Asia, the West Indies, Australia, New Zealand, etc. are home to patharchatta cultivation. The plant, which is a member of the Crataegaceae family, is known by its scientific name, *bryophyllum pinnatum*. In Sanskrit, Patharchatta is referred to as Pashanabheda. It goes by several names, including miracle leaf, air plant, cathedral bells, and wonder of the world. A variety of therapeutic nutrients are known to be present in the medicinal plant Patharchatta.^[2,7]

A perennial succulent herb used for medicine is called parsley. It has densely cut leaves. This has Kalanchoe's plant's exact appearance. It is a little plant that grows well in any type of container or yard. There are no seeds on this plant; instead, it produces five to ten plants from each leaf. In the garden, the plant is also planted for aesthetic purposes. However, this plant has many advantages. This makes treating the stones simple. Kidney stones can also be treated using the juice of its leaves. The Patharchatta plant is used to treat asthma, blood dysentery, boils, cough, diabetes, insect bites, jaundice, epilepsy, cough, jaundice, nephrolithiasis, painful mites, pneumonia, etc. It stimulates the production of urine and therefore helps in urinary stones^[10,11].

Bioactive substances such as alkaloids, flavonoids, glycosides, triterpenes, cardienolides, bufadienolides, lipids, and steroids may be abundant in patharchatta.

Table 1. Nutritional Component

Sr.no	Nutritional Component	Value (in %)	Sr.no	Nutritional Component	Value (in %)
1	Fats and oils	1.28	9	Potassium	3.49
2	Fibre	6.02	10	Nickel	0.08
3	Protein	5.38	11	Calcium	4.99
4	Carbohydrate	72.92	12	Sodium	0.32
5	Iron	0.18	13	Lead	0.03
7	Copper	0.03	14	Cadmium	0.23
8	Zinc	0.26			

Properties of Patharchatta

- It may protect the kidneys.
- It may reduce mutations caused by cancer-causing cells.
- It may reduce blood glucose levels.
- It may inhibit the growth of fungus.
- It may inhibit the growth of microorganisms.
- It may reduce inflammation.
- It may prevent the formation of ulcers in the stomach.
- It may enhance liver health.
- It may strengthen the immune system.

Medicinal Properties of Patharchatta Leaves^[6, 12]

1. Astringent

Its characteristics, which reduce pore size, can aid in improving the appearance of the skin. Astringents are often applied after cleaning but before moisturizing. Astringents are great for all skin types when used in their natural form. You may maintain clear, fit skin by using an astringent two to three times a day.

2. Analgesic

This characteristic serves as a kind of medication that essentially reduces discomfort. Kind-hearted pain relievers function similarly to aspirin by obstructing the enzyme-regulated production of prostaglandins. By limiting the production of prostaglandins, it lowers inflammation, fever, and pain.

3. Anti-aggregate

Also referred to as anticoagulants or antiplatelets, they aid in preventing blood clots or lowering their risk. Despite not really thinned blood, it is frequently referred to as blood thinners. It functions by obstructing or dissolving potentially fatal blood clots that form in the heart or blood arteries.

4. Anti-dysenteric

It is an attribute that may aid in the treatment or avoidance of dysentery. It works well for colic, constipation, diarrhea, and other ailments. One condition called dysentery can be brought on by a variety of infectious organisms, including bacteria, viruses, and parasites.

5. Anti-inflammatory

It is a characteristic that works on the body's systems to assist reduce inflammation. Generally speaking, inflammation starts when substances from the body's white blood cells are discharged into the circulation or damaged tissues. In order to protect itself against foreign objects, the body releases chemicals that cause the area of the wound or infection to receive more blood flow, giving rise to redness and warmth.

6. Antiseptic

It's a characteristic that can stop the spread of harmful chemicals, therefore preventing infection. It functions similarly to a chemical that breaks down or stops the growth of illness microorganisms, like cetrimide or chlorhexidine. Antiseptics are used both internally to treat bladder and intestinal infections and externally to clean wounds.

The best examples of antiseptics are iodine, hydrogen peroxide, povidone-iodine, polyhexanide, boric acid, alcohol, benzalkonium chloride, etc.

7. Antispasmodic

These kinds of qualities are employed to ease impulsive muscle spasms and smooth muscle relaxation, especially in the gastrointestinal tract's tubular organs. It works well at preventing intestine, bladder, and stomach spasms. It works by relaxing the muscles in the stomach and intestines and postponing the normal activity of the gut.

8. Cytotoxic

Known by another name, antineoplastics are a class of medications that contain substances that are either poisonous or lethal to cells. They specifically stop cells from growing or replicating; this is how cancer is treated. In addition, qualities have the potential to treat a variety of other illnesses, including rheumatoid arthritis and multiple sclerosis.

9. Diuretic

It is also known as a "water pill" because of its qualities, which assist treat a number of ailments include edema, high blood pressure, and glaucoma. It works well because it encourages the excretion of urine and/or agents that increase the volume of urine expelled. It causes the kidneys to release more sodium into your urine and aids in the removal of water and salt from the body.

10. Disinfectant

Generally speaking, disinfectant qualities are employed to eradicate microorganisms from inanimate things and non-living surfaces like floors. Primarily utilized as an antiseptic, disinfectant is applied to clean wounds prior to medicine administration. Certain disinfectants are capable of eliminating a broad spectrum of microorganisms, whereas others are limited to eliminating a particular kind of bacterium.

11. Emollient

It is an attribute that maintains the skin supple and moisturized while warding off skin fissures. These are natural or non-cosmetic moisturizers in the form of lotions, gels, ointments, and creams. Emollients can make one feel more at ease and less irritated while also being safer for the skin. It is an essential component that hydrates and restores the skin's natural tissues while protecting and soothing irritated or inflamed skin.

12. Hemostatic

A drug known as an antihemorrhagic is one that aids in hemostasis, or the cessation of bleeding. Hemostasis is a particular class of antihemorrhagic agent that functions by contracting tissue to seal damaged blood arteries. It is also referred to as a hemostatic or styptic agent. It is beneficial during the initial phase of wound healing.

13. Immunomodulatory

It contains a chemical substance (azathioprine or methotrexate) that either enhances or modulates the immune response. Put differently, it stimulates the production of antibodies or suppresses the activity of white blood cells. It inhibits allergic reactions and the degeneration of immune effectors while producing toxic or immunotoxic effects.

14. Styptic

When administered topically to a wound, it possesses the ability to halt bleeding. Coagulation, the process of clot production, is what causes a wound to stop bleeding. These days, tiny cuts and nicks—especially those from wet shaving—are sealed with styptic pencil.

Features of patharchatta

- The juice of its leaves is also used for kidney stones.
- This plant produces about 5 to 10 plants from its own leaf, there are no seeds of this plant.
- Patharchatta is a very useful succulent medicinal herb.
- It stimulates the production of urine and therefore helps in urinary stones.
- Low maintenance and easy to grow.

Uses of Patharchatta

- Bryophyllum pinnatum (Patharchatta) is traditionally used for the treatment of kidney stones and urinary insufficiency.
- The extracts of Bryophyllum pinnatum attenuate the decrease in body weight caused by ethylene glycol-induced renal calculi.
- Treatment with Bryophyllum pinnatum extracts decreases serum creatinine, uric acid, urea, calcium, phosphorus, and magnesium levels.
- Bryophyllum pinnatum has been used in traditional medicine to treat gastrointestinal disorders such as diarrhea and dysentery.
- The plant extract of Bryophyllum pinnatum has demonstrated antimicrobial activity against various pathogens

Ayurvedic Medicinal Uses of Patharchatta Plant ^[2,5,7]

1. Eye pain: Rub fresh leaf juice all over the eyes; this relieves pain in the white portion of the eyes.
2. Constipation: Prepare a tea with dried leaves; drink it to relieve constipation.
3. Heart health: Juice consumption in the morning will strengthen the heart.
4. Dysentery: Drink a leaf juice extract mixed with honey to relieve your dysentery.
5. Wounds: Apply crushed leaves that have been slightly warmed to the wound to hasten its healing process.
6. Fever: Drink the liquid; the leaves' antipyretic qualities will help reduce fever symptoms.
7. Mucous: Drink the leaf and stem juice every day to help the body get rid of waste products and mucus.
8. Swelling: Apply the leaf paste to the area; its anti-inflammatory qualities will greatly lessen the swelling.
9. Pile prevention: Drink juice made from the leaf extract twice a day to help prevent piles.
10. Grey hair: Regularly applying juice to hair can not only make it healthier but also assist to prevent greying.
11. Hemorrhages: To halt hemorrhages, pound a few leaves and apply them as poultices to the foot soles.
12. Liver: Drinking juice can help treat conditions like jaundice and improve liver function.

13. Kidney: Juice can aid with a variety of kidney-related conditions when it is regularly consumed.
14. Ear pain: Apply a few drops of juice to an ear to relieve pain.
15. People with diabetes: Drink leaf juice twice a day to noticeably lower blood sugar levels.
16. Boils: Use fresh juice on the boils; it also helps with skin swelling and redness.
17. Coughs and colds: Eat sugar candies and leaf juice; this will also benefit those with asthma.
You're better at combating free radicals
18. Immunity: Drink two or three cups of tea made from dried leaves each day to strengthen your defenses against free radicals.
19. Pain in the stomach: Drink a decoction prepared from the leaves; it will provide comfort.
20. Worms: Bryophyllum pinnatum has an anthelmintic characteristic that can assist successfully remove worms from the intestine. Consume the juice from the leaves.
21. Weight management: Regularly consuming the juice of Bryophyllum pinnatum leaves can aid in weight loss. Purifies blood: It is a miracle leaf that has a blood-purifying agent, it removes the toxins from the body and helps improve your health.
22. Skin ulcers: You can treat and alleviate skin ulcers by applying juice prepared from crushed leaves to the affected area.

How to use Patharchatta Leaves?^[2,3,4]

1. kidney stones

Take two doses of the 40–50 ml whole plant decoction each day.

Alternatively, you can drink a decoction made of 500 mg Shilajit and 2 grams of honey.

Combine it and drink it twice daily.

2. Diarrhea that bleeds

Measure out 3–6 grams of fresh leaf juice, add cumin seeds, and then double the ghee. Three times a day, take the combination. It will support blood flow management in cases of diarrhea.

3. Disorders of the urinary system

For urinary system diseases, use 5 milliliters of leaf juice twice a day.

Take 40–60 ml of a decoction along with 2 gram of honey twice a day for diseases related to the urine.

4. Diuretic action

Drink 40–60 milliliters of the decoction every morning and evening. It is effective in treating the majority of urinary diseases and can also be used to treat excessive thirst.

5. Headache

Crush three to four fresh leaves, then apply the leaves to your forehead to help relieve headaches.

6. Hypertension

Harvest two to five fresh leaves from the aerial portions, then eat them to help lower blood pressure.

7. Ulcer/sprains/insect stings

Crush five to six fresh leaves, then use the crushed leaves as a poultice to the affected region. This will help with all of these ailments if you repeat it twice a day, in the morning and the evening.

8. Chest cold

Juice three to four leaves, season with a little salt, and drink three times a day for as long as necessary.

9. Leukemia

Extract five to ten fresh leaves from the aerial sections, then eat them twice a day to help prevent blood cancer.

10. Vaginal disorders

Take 40–60 ml of a fresh leaf decoction, stir with 2 gram of honey, and drink twice a day to treat vaginal disorders.

11. Boils

Take some leaves, smash them in a frying pan, and apply them as a poultice to the afflicted area. It also relieves edema, redness, and boils.

Table 2. Medicinal uses of B. Pinnatum.⁸

Country/language	Vernacular name	Uses	Parts used
India (Bengal)	Patharkuchi	Urinary stones, bleeding disorder, ulcers, and diarrhea	Leaf juice
India (Maharashtra)	Panfuti	Wound, ulcers, cough	Leaves
India (Odisha)	Amarapoi	Headache, general body pain, urinary disorders	Leaves and juice
India (Kerala)	Thukotali	Cancer, burn wound	Leaves
India (Sanskrit)	Parnabeeja, Asthibhaksha	Headache, wound, hypertension	Leaves
India (Hindi)	Zakhmhaiyat, Pathharchoor	Diabetes, burns, wounds	Leaves
India (Kannada)	Gandukalinga, Kadu basale	Joint pains, headaches and body pains, wound	Leaves
India (Malayalam)	Elamarunga	Wounds and body pains	Leaves
India (Tamil)	Malaikalli, Ranakalli	Cough, wound, pains	Leaves
India (Telugu)	Ranapala	Cough, wound, pains	Leaves
India (Marathi)	Gayamari	Cough, sore	Leaves
India (Odisha)	Basampatri	Flatulence	Leaves
Southern India and Bengal	Parnabeeja,	Renal disease, wound	Leaves
India (Bundelkhand)	Pather Chat or Paan-futti	Jaundice	Leaves
Caribbean (English speaking)	Leaf of Life	Diabetes, burns, wounds, pains	Leaf juice

How to Use Patharchatta?^[2,6]

- A few patharchatta leaves can be taken, soaked in hot water, and then eaten.
- Herbal powder supplements containing patharchatta are available.
- Before taking any herbal supplements or patharchatta in large doses, you should speak with a licensed physician. Without first consulting a trained physician, never stop taking contemporary medication or switch to an ayurvedic or herbal formulation of patharchatta.

Side effect of patharchatta

- It may cause fatigue.
- It may cause a dry throat
- It may cause agitation

- It may cause difficulty in digestion

Precautions to Take with Patharchatta

The following precautions can be taken before consuming patharchatta:

- People with heart diseases should be cautious before consuming patharchatta.
- Pregnant women and lactating mothers should take special care. You must consult your doctor before having patharchatta.
- Precaution should be taken before giving patharchatta to the elderly or children. You must consult your doctor before you consume patharchatta if you have any pre-existing diseases.

Interactions with other drugs

There is insufficient data to determine how patharchatta interacts with other medications. It is necessary to conduct more research on the interaction of patharchatta. Thus, before taking patharchatta, you should speak with your doctor if you are on any other medications.

References: -

1. Lakshmikanta, panda. Arun, uniyal. 2023. Ethnomedicinal investigation of medicinal plants from tribal communities of Uttarakhand. *the pharma innovation journal*, 12(3): 24-31.
2. Barode, smita. 2023. Patharchatta: uses, benefit, side effect. *Pharmaeasy*, Oct 11, 2023
3. Tajudin, n j. Ismail in. Antimicrobial activity of kalanchoe pinnata: a review. *Malaysian journal of science health & technology*. 2022 feb 1;8(1):31-7. Available from: <https://mjosht.usim.edu.my/index.php/mjosht/article/download/245/147>
4. Selvakumar, P. 2022. Phytochemical and Pharmacological Profile Review of Bryophyllum Pinnatum. *Biomedical and Biotechnology Research Journal (BBRJ)* 6(3):p 295-301.
5. Taiwo O. Elufioye, Adebola O. Oyedeji. 2022. A Review of the Traditional Uses, Phytochemistry and Pharmacology of Bryophyllum pinnatum (Lam.) (Crassulaceae). *JOURNAL of Biologically Active Products from Nature* 12 DOI: 10.1080/22311866.2021.1988706.
6. Subrata kumar biswas, chowdhury, joyshree das. 2021. a review of the traditional medicinal uses of kalanchoe pinnata. *international scholars journal*, 10(1) pp. 001-005.
7. Harjinder. singh, amar pal. singh, ajeet pal singh, 2021. A review on kalanchoe pinnata (crassulaceae). *indian journal of pharmacy and pharmacology*, 8(3):182–188.
8. Diksha sharma, sushmita dwivedi, shweta ranghar, mamta baunthiyal.2020. Systematic review of medicinal plants as potential anti-urolithiatic agent. *international journal of advance research*. 8(08), 470-484.
9. Rafia rahman, jamal nesser alsabahi.2019. phytochemical, morphological, botanical and pharmacological aspects of a medicinal plant: kalanchoe pinnata-a review article. *International journal of chemical and biochemical sciences*, 5-10.
10. P. B. Rajsekhar, r. S. Arvind bharani. 2016. The “wonder plant” kalanchoe pinnata (linn.) Pers.: a review. *journal of applied pharmaceutical science*. 6 (03); 151-158.
11. Nagaratna a, prakash l hegde. 2015 a comprehensive review on parnabeeja [bryophyllum pinnatum (lam.) Oken. *journal of medicinal plants studies*, 3(5): 166-171.
12. Quazi majaz a, a.u. Tatiya, molvi khurshid. 2011 the miracle plant (kalanchoe pinnata): a phytochemical and pharmacological review. *International journal of research in ayurveda & pharmacy*, 2 (5) 1478-1482.