

Review on Pharmacological Activities of Phyllanthus Niruri a Powerful Herb


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Abstract:

Phyllanthus niruri is belonging to the family (Euphorbiaceae) and it consists of broad variety of pharmacological and phytochemical properties and it is well known for traditional uses it will be shown large spectrum of pharmacological activities like antiviral, antispasmodic, ant inflammatory and neproprotective. Phytochemicals, flavonoids, terpenoids, alkaloids, polyphenols, tannins, lignans, coumarins and saponins are the active constituents and have been identified. In this review we discuss about the medicinal herbal powerful plant Phyllanthus niruri Linn. from various parts of P. niruri. Decoction of this herb has been evincing to have many therapeutic have in clinical studies. These studies are related to chemical properties and structural properties of the phytochemicals found in P. niruri are very useful for further research. In this study we learnt about the benefits of bhumi amla, importance of bhumi amla, side effects of bhumi amla, if you take higher doses of bhumi amla it does not give good effect, bhumi amla is harmful for pregnant and breast feeding women, liver disorder, kidney stone, skin treatments, allergies, food poisoning, cancer treatment, malarial treatment and jaundice these all treatments are possible with the help of jangli amla. The aqueous administration of whole plant is responsible for the loss of appetite, carminative laxative and vaginitis.

Keywords: jangli amlai, Powerful, phytochemical

INTRODUCTION

Bhumi amla is derived from local Indian language bhoomi or bhooi this herbal natural drug is thoroughly found in tropic and subtropic regions worldwide and it is tagged as wonder plant and mostly abundant drug with various beneficial effects.

This plant is very important for many medicinal uses and primary health care needs in daily life. Nowadays people prove lots of attention due to its medicinal value.

Bhumi amla is also known as phyllanthus niruri. It is herbal plant that grows about 40-70cm in height phyllanthus niruri is tiny plant present in land called Bhumi usually begin in rainy days or in monsoon fruits of jangli amla are small and found in the form of capsule it contains seed also. It contains flowers also they are in pale green in colour. (15)

Phyllanthus niruri is a natural and powerful tropical shrub or herb and it has been utilize for a broadly area of diseases (1). Bhumi Amla is also known as ‘*Chanca Piedra*’ or ‘stone breaker’ in Brazil. (1) *Phyllanthus niruri* is a natural powerful magical traditional shrub of the genus Phyllanthaceae livelong Ayurvedic, Malay and Chinese ethnobotany records. Bhumi amla have valuable scientific evince for its use. (1)

Ayurvedic and Unani medicine in traditional system have utilized the whole plant in the treatment of jaundice and gallstones. *Phyllanthus niruri* vernacularly is also known as ‘*dukong anak*’ in Malay is used for cough and kidney disorders. (2) Where the herb is called *Bhumyamalaki* in South India. The herb is believed to treat gonorrhoea, constipation and syphilis.(3) This herb locally known as ‘*pitirishi*’ in northern India. It has gained a reputation as a household remedy for tuberculosis, asthma, and even bronchitis. (4)

Phyllanthus niruri is considered beneficial for diabetics as it helps manage blood sugar levels due to balancing of pitta and for indigestion and acidity. property. It might also be due to its tikta (bitter) property according to Ayurveda. Administration of 1-2 tablets or capsules of jangli amla twice a day helps to improve skin disorders due to its blood purifying property. Bhumi Amla powder helps to prevent hair fall as well as promote hair regrowth.

Biological source: Bhumi amla is also known as tamalki, bhayumalik, bahupatra, bahuphala, jangli amlai and bhumi amla is also referred as bhui amla, bhui avla in various states of India. It is obtained from plant **Phyllanthus Niruri** belonging to the family **Euphorbiaceae**.(16)The whole plant of bhumi amla is used as internal medication for oral take generally. Its paste is also used skin infections also.(5),

This herb consists of many therapeutic characteristics. It is commonly used around the world anemia; urinary problems, Bronchitis, asthma, leprosy, and other conditions are also treated by bhumi amla. (6)

Pharmacological activities of *Phyllanthus amarus*

Ethanol extract of *Phyllanthus niruri* contains antidiabetic activity, insulin consist dependent diabetes mellitus rat, and it showed no effect on non–insulin-dependent diabetes mellitus rat [11]. While there is increase in high-density lipoprotein cholesterol) in both insulin-dependent diabetes mellitus and non– insulin dependent diabetes mellitus animals [11]. Concordantly, a one week study carried out on non-insulin dependent diabetic patients using aqueous extract of aerial parts of *Phyllanthus amarus* showed that, it is not effective in lowering both fasting blood glucose and postprandial blood glucose level in untreated non-insulin dependent diabetic patients [12]. Aqueous extract of *Phyllanthus niruri* demonstrated significant hypoglycemic activity in streptozotocin induced diabetic rats [14]. Relatedly, methanol extract of the plant has also been found to reduce blood sugar level in alloxan-induced diabetic rats [13]

Parts used of Bhumi Amla

1-Roots

2- Flowers

3- Stem

4-Leaves

Dosages of Bhumi Amla:

1-Powder (Chooranam)

2- Juices (swaras)

3- Capsule (gutika)

4- Kalka (paste)

Home Remedies of Bhumi Amla:

- 1- Fine paste of Bhumi Amla leaves applied over the infected skin and allergies. It is commonly used as to cure infections or blood purify.
- 2- Fresh juices of whole plant used in the purpose of nasal infections and allergies.
- 3-Finely crushed mixture or paste of Bhumi Amla is properly separated and applied to the eyelids to cure the infections of eyes.
- 4-The tea of bhumi amla leaves is useful in fever also.
- 5- Fresh cold juice of tamalki used to treat food allergies in children below 7 years old in the morning.

The extracts of phyllanthus niruri give medicinal effects in clinical studies. The medicinal importance shows therapeutic effect like tumors, diabetes, tuberculosis, cough, influenza, diarrhea, and diuretics [10]. It is also well known for widely variety of uses like, antihepatitis B, antihepatotoxic, antibacterial, hepatoprotective action, antifungal action lipid lowering action, , analgesic, antihyperglycemic, anti-inflammatory and cardioprotective.

Phytochemical screening of phyllanthus niruri gives the presence of tannins, flavonoids, alkaloids, saponins, coumarins terpenoids, phenols, and steroids. Qualitative screening of it confirms the presence of the secondary metabolites in plants.

Phyllanthus niruri were collected from the field sides of Nagpur, Bela Village, India, and Maharashtra, The sample of plant washed with clean water to remove dust and dirt and after cleaning it is dried under the room temperature about 15 days then air dried the various parts like fruits, roots, the leaves and stem were separated. The dried samples of this plant were finely ground to fine powder with the help of using pestle and mortar and electric grinder.

Table no. 1 Nutritional Value of Bhumi Amla:

| S.no | Nutrient | Content |
|------|---------------|---------|
| 1. | Crude protein | 14.74 |
| 2. | Sodium | 1947 |
| 3. | Ferric | 665 |
| 4. | Phosphorus | 6978 |
| 5. | Potassium | 18252 |
| 6. | Calcium | 2911 |
| 7. | Copper | 2914 |

These are the some nutrients with their content present in bhumi amla they also have their own uses and therapeutic value and play an important role in the treatment of various diseases and infections.

Medicinal properties of Bhumi Amla according to Ayurveda:

- 1-Rochak means enhance the taste and appetite.
- 2- Pittashamak means recommended in bleeding disorders.
- 3- Kaphaja kushta means useful in skin diseases.
- 4- Vishaghan means cure toxic conditions like drug or food poisoning.
- 5- Shwasahari means treat respiratory disorders.
- 6- Trishna shamana means used in thirst and dry mouth.
- 7- Dahahar considered as cure pitta dosha and gastritis.
- 8- Hidhma shamaka considers as relieves from hiccup.
- 9- Kasa hara means cure cures common cold and cough.
- 10- Pittamehahara means treating diabetes.
- 11- Mutrarogahara means used in urinary tract disorders.

These are the some medicinal properties of bhumi amla which helps in the treatment of various disease like kidney stone, digestion, jaundice, antimalarial, anti-cancer, arthritis,

Bhumi amla is considered as a natural traditional herbal ayurvedic remedy to improve the functioning of the brain. The antioxidants properties of bhumi amla bark increase the capacity of memory, concentration, calmness, memory loss, alertness of an individual. It also helps in treating epilepsy, stress, depression, focus, anxiety, Alzheimer's and other neurodegenerative disorders.

Morphology of Bhumi Amla:

Color- The bark and leaves of this plant is in light green color, flowers and fruits are in pale green color.

Odour- Not known

Taste – Slightly bitter

Tamalki can be used in the form of powder, juice, mixture and paste.



FIGURE NO 1.0 PLANT OF BHUMI AMLA

Phytochemical Constituents of Bhumi Amla:

Phyllanthus niruri contains various organic compounds like tannins, alcohols, phenols, alkaloids, terpenoids, hypophyllanthin, glycosides; ricinoleic acid etc. presence of these compounds also helps in the treatment of various diseases like food allergies and nasal allergies.

Indications of jangli amla:

Anemia

Jaundice

Asthma

Cough

Liver disease

Malaria

Kidney stone

Gall bladder stone

Urinary diseases

HIV

Facial palsy

Hypertension

Liver carcinoma

Cystitis

Paralysis

Menorrhagia

Hepatomegaly

Diabetes

Skin ulcers

Cataract

Chronic fever

Veneral diseases

Prostastis

Uses of Bhumi Amla:

Jaundice is also treated by tamalki.

The mixture of leaves applied in the skin and cures the skin diseases.

Ulcer also treated by the roots and leaves of bhumi amla.

Whole plant juice is used for the treatment of many urinary tract diseases like leucorrhoea, gonorrhoea, and menorrhoea.

Used in the treatment of chest pain and diabetes.

Dried powder used in the injuries and wound.

Constipation is also treated by tamalki.

If you chew fresh leaves of tamalki empty stomach it will help you maintain dosha in body.

Hyperacidity is also treated by bahupatra.

Extraction of tamalki is also maintaining your liver function tests.

Plant acts like tonic.

Tamalki is only effective for short duration and should be taken for short duration. If you have arthritisjangli amla is prescribed by doctors or physician. The breast feeding and pregnant women avoid bhui amla powder and its supplements.

In the case of inappropriate dose it should not be effective is used only inappropriate dose because appropriate dose does not contain any side effects when it is used topically also enhancing the skin tone due to its antiseptic nature. Higher dose can cause diarrhea.

After the administration of tamalki in the treatment of liver disease for three weeks it was found that a significant result and it is also gives scientific report for various activity; antioxidant, immunomodulator, hepatoprotective, anti-hepatocellular carcinoma. (7)

Bhumi amla is also responsible for the treatment of burning sensation of urine.

Bhumi Amla Benefits:

Bhumi Amla against HIV & Hepatitis B:

-Tamalki may stop the growth and development of hepatitis B virus (HBV) it blocks the replication of DNA of this virus.

-An aqueous mixture of jangli amla blocks DNA surface antigen of virus from attaching.

-Addition of alkaloidal extract of P. niruri it result inhibition effect against the cytopathic effects of both HIV strains on human MT-4 cells at the doses tested.

The extract was discovered to block woodchuck (Marmotamonax) hepatitis virus (WHV) DNA polymerase by attaching to the virus's surface antigen. (7, 8)

Bhumi Amla Active against Excess Uric Acid and kidney Stone:

-Aggregation of calcium oxalate crystals in the kidney is a prevalent condition that causes urinary calculi (stone) formation, the creation, nucleation and development are also include.(17)

-Also altering their shape and texture by the extract inhibits calculi formation.(17)

-It can change the appearance and texture of the calculus and It can produce a matrix-like material on the surface of prepared calculi.

- The active constituents of tamalki may help in inhibition the development of and aggregation of calcium oxalate [CaOx] crystals in calculi.(18)

-The mixture inhibits calculi formation and also helps in shape and structure.

-The calcium urine levels lowers and excessive urine in body drug also given to hypercalcemic patients, excess uric acid in hyperuricemic individuals. (7)

Anti-cancer Activity of Bhumi Amla:

-Cancer cell development and growth is also block by the utilization of Phyllanthus niruri due to its potential and strong effect.(19)

-Phyllanthus niruri intensifies two-stage skin carcinogenesis, however, because it prolongs cancer formation in the skin and reduces its multiplicity and yield,

-Cytotoxic effect on pre-neoplastic or neoplastic cells resulted in this action by the combination of P. niruri's cytoprotective impact on normal cells

-The addition in potent phytochemicals, such as quercetin and rutin were responsible for a significant reduction in skin carcinoma. (8, 9)

Bhumi Amla Side Effects:

*Commonly there are no side effects or adverse effects of tamalki in human studies when it administered by under the doctor or physician it is likely safe.

-Diabetes or hypoglycaemia and those taking blood sugar-altering medicines, herbs, or supplements should exercise caution. Bhui amla is a plant that may help to reduce blood sugar levels. Your blood glucose levels may need to be checked by

-Patient with bleeding disorders or those taking medicines that may increase the risk of bleeding should exercise caution. (20)

You may need to modify your dosage.

-Patient who are utilize blood pressure-lowering medications should exercise caution. Phyllanthus niruri has been linked to a drop in blood pressure. (9)

Bhumi Amla Precautions:

- If you have liver illness use it cautiously
- If you're taking diuretics, cholesterol-lowering medications, or immuno-modulators use it cautiously.
- If you are pregnant, breastfeeding, or attempting to conceive do not use
- If you have a known allergy or intolerance to them Avoid Phyllanthus niruri or members of the Euphorbiaceae family.
- Can also cause anorexia, chills, diarrhoea, disturbed sleep, fatigue, dizziness, enlarged lymph nodes, hives, fever, headache, increased sodium, potassium, and chloride in the urine, increased urine volume, lung disease, joint pain, malaise (discomfort), skin prickling, muscle pain, nausea, rash, and sore mouth after administration of tamalki. (9), (17)

Conclusion:

Jangli amla is also well known for medicinal natural herb which is most commonly used in many countries including India also. Jangli amla has various activities like therapeutic uses, pharmacological effects, immunomodulator, antiviral, antimalarial, anticancer, kidney stone, fever, skin diseases, food allergies, anorexia, liver disease and jaundice. Jangli amla plays an important role in Ayurveda also.

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