

# Commonly Used Medicinal Plants in Bangladesh to treat Different Infections

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## Abstract

**Background:** Plants and herbs have been the mainstay of treatment in many rural and tribal areas of Bangladesh for the immense availability of medicinal plants in this region. Nature and natural remedies are widely accepted by people around the world from ancient times. Barks, root, stem, flower, seed various parts of plants were used against ailments or infections caused by microbes even before the discovery of various microorganisms. So it is rational to believe that these herbs and plants possess immense medicinal potential with definite pharmacological action.

**Methods and findings:** Secondary data have been collected from different reputed international and recognized journals and websites.

**Conclusion:** This review enlists the medicinal plants used against infectious diseases in Bangladesh.

**Keywords:** Infections, Medicinal Plants, Traditional

cultural diversity has also enriched the use of medicinal plants. This traditional attempt to treatment has survived the enormous take-over of modern medicine systems because of the belief of people in mother-nature. As a consequence the knowledge behind the use of medicinal plants have passed down from ancestors to predecessors. Some definite preparations and validation protocols for the use of some medicinal plants have been determined. Still the rural, tribal and folklore society admire the traditional use of plant extract or simple preparations like infusion, decoction, powder from plants due to the great availability of the plants. One of the major use of medicinal plants is in infectious diseases to treat them or to reduce the symptoms. Infectious diseases are diseases caused by pathogenic microorganisms like bacteria, virus, fungi. Pneumonia, meningitis, food borne infection, ear infection, urinary tract infection, STD like gonorrhea, syphilis are being treated by various plants. The most common use is still in treating common cold, sinus infection and skin infections. Besides, with the advancement of science people have come to know that the plants at our reach contain magically bioactive components like alkaloids, glycosides, flavonoids, tannins, terpenes, resins, gums, mucilages, antioxidants at small dose. People still rely on these remedies generally in conditions which are not generally regarded as life threatening.

## Introduction

Discovery of medicines began through serendipity and man's quest for drug in nature. Since plants existed on earth from the very beginning of human evolution, the use of plants in the daily lives and in alleviating human sufferings is as old as human civilization on earth. In many countries traditional medicines or herbs are considered primary treatment option [1]. Indo-Aryans noted down the use of medicinal plants in Rig-veda at around 4500-1600 BC [2]. Bangladesh being a country of this Indian sub-continent also possess a great diversity in plants. Around two thousands medicinal plants in this sub-continent and 449 medicinal plants are enlisted in Bangladesh [3]. Though the exact number of used plants is unknown there are some common medicinal plants which are in use by kavirajes, traditional medicines for a long time. The existence of various tribes like Chakma, Marma, Rakhain, Tipra, Garo, Khashia with

## Methods

Secondary data have been collected from different reputed international and recognized journals and websites.

## Discussion

Medicinal plants are the most traditional and widely used sources of treatment of any diseases. The role of commonly used medicinal plants in Bangladesh is as follows-

### *Abutilon indicum* L.

*Abutilon indicum* L. is form *Malvaceae* family and commonly known as monkey bush, country mallow and mandii. Potari is its

local or Bengali name. Stem bark, leaf paste, infusion of leaves, cooked leaves, root and seeds are the main parts that are used to treat infections. Ethanolic extract of *Abutilon indicum* L. shows greater efficacy compared to albendazole. It is found to possess *in vitro* anthelmintic activity. The leaf is used for treating bladder infections. The leaf extract is used for gonorrhoea, vaginal infections. Further the plant possesses antimycotic, antifungal activity and antidiarrhoeal activity. *Abutilon indicum* L. shows activity against malarial vectors. *Abutilon indicum* L. leaf extracts can be used against vector mosquitoes viz., *Aedes aegypti*, *Anopheles stephensi* and *Culex quinquefasciatus* [4-12]. It shows activity against *Bacillus cereus*, *Staphylococcus aureus*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Candida albicans* [13]. It is active against various skin infections, dysentery and vaginal infections.

### *Adina sessilifolia* L.

*Adina sessilifolia* L. is from *Rubiaceae* family. It is known as Kom. in Bangladesh. It is commonly known as Kam gass by Chakma tribe. Leaf paste is generally used in treatment of various infectious diseases [14]. Impetigo, folliculitis, minor cellulitis, fungal infections are some common skin infections treated by this. Leaf paste is applied on the affected surface of skin.

### *Bridelia retusa* L.

*Bridelia retusa* L. belongs to family *Euphorbiaceae*. It is known in various Bengali names like Kamkui, kankakui, kankakhasi, kankakosoi. It is known as Shukujja ghas among Chakma, bobipui among khumi tribe. Ripe fruits, leaf paste, bark obtained from the plant are used in skin infections like impetigo, erysipelas, folliculitis, minor cellulitis, fungal infections are treated by *Bridelia retusa* L. [15]. Leaf paste is applied on the affected surface of skin generally.

### *Caesalpinia bonduc* L.

*Caesalpinia bonduc* L. belongs to *Fabaceae* family. Nata, naitai, touri, lalkanta, jhangragota, kokoi, dahara are the Bengali names used for it. It is commonly known as Kamujja ludi (chakma), fever nut, physic nut, nicker beam. Boiled water containing extracts of leaves and roots, powder of dried leaves, young leaf paste, seed, seed oil, pod, decoction of pod and seed are used. Aqueous extract of the plant or boiled root and leaves or tablets of dried powdered leaves are used in urinary tract infection. This is generally used by Rakhain tribe. Leaf paste is used for skin infection by Chakma tribe. Leaf paste is applied on the affected surface of skin. It is also used in helminthiasis [14-15].

### *Ixora nigricans* L.

*Ixora nigricans* L. belongs to *Rubiaceae* family. It is renowned among local people as Rongon. It is also called as Dikrang chuillya (chakma and Tripura), rongma, farareka (marma). Root and leaves extract, pastes are used. *Bacillus subtilis* is susceptible to the extract of this plant. So food poisoning is treated by this. Root and bark paste is used for otitis media or

ear infections. Root extract is used by Chakmas in diarrhea and leaf extract is used by Tanchangyas for dysentery [16-18].

### *Premna esculenta* L.

*Premna esculenta* L. belongs to *Verbenaceae* family. Bengali names for this plant are Lalana, Lalong. It is also known as Silazra (Chakma), Lelom pada (Chakma), Lahana shak (Marma), Lamur (Marma), Angkung-gam (Khumi), Unarei (Bawm), Orai (Tripura), Kamrah (Marma), Kramu-rauh (Marma). Curry of leaves or boiled leaves, paste of leaves and root are used for ailments. *Premna esculenta* L. is active against *Pseudomonas aeruginosa* which causes folliculitis. It is used topically for fungal and other skin infections. It is used with fermented rice water for urinary tract infections [14,16,18].

### *Urena lobata* L.

*Urena lobata* L. belongs to *Malvaceae* family. Banokra, Atlera, Jangli Ghagra, Belaz-gota are the Bengali names for this plant. Known in various names among tribal people like; Kuney gaas (Chakma), Phophi (Marma), Pobibaong (Marma), Faw Ma (Marma), Wakkhansu Buphang (Tipra). Seeds, roots, decoction of stem and root, flowers are used for medicinal purpose. Extract from the root of *Urena lobata* shows broad spectrum activity against *Bacillus subtilis*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Micrococcus luteus*, *Escherichia coli*, *Klebsiella pneumoniae*, *Shigella dysenteriae*, *Vibrio cholerae*. This is used in pneumonia, dysentery, skin infections, food poisoning [19,20].

### *Ocimum sanctum* L.

*Ocimum sanctum* L. belongs to *Labiatae* family. In Bengali it is known as Tulsi. It is widely popular as Basil, holy basil. Leaves, aqueous decoction of leaves are used. The major constituents of tulsi being eugenol attributes to minimizing a wide range of diseases or symptoms. The most common use of Tulsi is in common cold. Tulsi preparations reduce sufferings of people from viral hepatitis and viral encephalitis. Tulsi along with black pepper is used as a prophylactic agent against malaria. It possess strong activity against *Plasmodium vivax*, *Plasmodium falciparum*, *Aspergillus niger* and helminthes [21,22].

### *Nyctanthes arbor-tristis* L.

*Nyctanthes arbor-tristis* L. belongs to *Oleaceae* family. It is known as a flower and called Shefali in Bengali. Parijat, night jasmine are also very popular names used for this ornamental plant. Leaves, bark, flower, stem, seeds every part of the plant is used. Shefali or night jasmine is considered as a sacred medicinal plant with immense potentials. Flower extract possess antifilarial properties. Seed extract is used for antifungal and antileishmanial infections. Leaves are potent contributor against antibacterial and anthelmintic infections [23].

### *Hiptage benghalensis* L.

*Hiptage benghalensis* L. belongs to *Malpighiaceae* family. Madhobi lota is known as a flower actually among Bengali

people. It is also commonly known as Myrtle. Flower, root are used against various diseases like skin infection, and leprosy. Kavirajes include whole plant, leaves, stems, roots, barks, flowers, fruits, seeds, tubers, and gum [24].

### *Holarrhena antidysenterica* L

*Holarrhena antidysenterica* L. belongs to *Apocynaceae* family. Bengali name for this plant is Kurchi. It is commonly known as Bitter oleander. Flower, bark, seed are used widely by khashia and Assamese. As the name suggests it is widely used in dysentery by local people. It is used in helminthiasis and skin infection [25,26].

### *Phyllanthus niruri* L

*Phyllanthus niruri* L. belongs to the *Phyllanthaceae* family. In Bengali it is known as Bhui amla or Bhui amlaki. It is also known as Tamalaki. Extract of roots and leaves or crushed powder of dried leaves and root are used along with fenugreek, cumin seeds or milk. It possess anti-malarial activity, antiviral activity against hepatitis B virus. It is also potent antibacterial, antifungal, antifilarial (*Culex quinquefasciatus*) [26-28].

## Conclusion

Presence of various bioactive components have made the traditionally used plants highly effective against various infectious diseases. As these are in use for a long time these are considered safe by native people. People attempt to stick to the indigenous plants for prophylactic use, cure or prevention of infectious diseases. As the discovery of various antibiotics and their irrational use has contributed to the emergence of resistance and various side effects, concern has developed among people. Herbal medicines can be considered safe alternative to modern medicines in some infectious diseases in which the use has been established from time immemorial.

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