

# Study of Medicinal Uses on Fabaceae Family at Rajshahi, Bangladesh

A. H. M. Mahbubur Rahman\*, M. Ismot Ara Parvin

Plant Taxonomy Laboratory, Department of Botany, University of Rajshahi, Rajshahi, Bangladesh

\*Corresponding author: [ahmmahbubur\\_rahman@yahoo.com](mailto:ahmmahbubur_rahman@yahoo.com)

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**Abstract** The research work was initiated to get information and report the medicinal plants on the family Fabaceae of Rajshahi during January 2011 to December 2011. The present study deals with the study of medicinal plants used by local people of Rajshahi, Bangladesh. A total of 32 medicinal plants species belonging to 23 genera were used by the local health healers for the treatment of different diseases. The conventional medicinal plants were mostly used for different abscess, asthma, cough and cold, dysentery, different skin diseases, ulcers and leprosy. The medicinal plants used by the traditional users of Rajshahi are arranged alphabetically followed by botanical name, local name, voucher number, parts used and medicinal uses.

**Keywords:** *Fabaceae, medicinal plants, folk medicine, Rajshahi, Bangladesh*

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## 1. Introduction

The Fabaceae or Leguminosae commonly known as the legume, pea, or bean family, are a large and economically important family of flowering plants. It includes trees, shrubs and herbaceous plants perennials or annuals, which are easily recognized by their fruits (legume) and their compound, stipulated leaves. The group is widely distributed and is the third-largest land plant family in terms of number of species, behind only the Orchidaceae and Asteraceae, with 730 genera and over 19,400 species [8,14]. The largest genera are *Astragalus* (over 2,400 species), *Acacia* (over 950 species), *Indigofera* (around 700 species), *Crotalaria* (around 700 species), and *Mimosa* (around 500 species), which contain around 9.4% of all flowering plant species [12]. The Fabaceae is the most common family found in tropical rainforests and in dry forests in the Americas and Africa [4].

Recent molecular and morphological evidence supports the fact that the Fabaceae are a single monophyletic family [11]. This point of view has been supported not only by the degree of interrelation shown by different groups within the family compared with that found among the Leguminosae and their closest relations, but also by all the recent phylogenetic studies based on DNA sequences [9,15]. These studies confirm that the Leguminosae are a monophyletic group that is closely related with the Polygonaceae, Surianaceae and Quillajaceae families and that they belong to the order Fabales [3].

Along with the cereals, some fruits and tropical roots a number of Leguminosae have been a staple human food for millennia and their use is closely related to human evolution [5].

A number are important agricultural and food plants, including *Glycine max* (soybean), *Phaseolus* (beans), *Pisum sativum* (pea), *Cicer arietinum* (chickpeas), *Medicago sativa* (alfalfa), *Arachis hypogaea* (peanut), *Ceratonia siliqua* (carob), and *Glycyrrhiza glabra* (liquorice). A number of species are also weedy pests in different parts of the world, including: *Cytisus scoparius* (broom), *Ulex europaeus* (gorse), *Pueraria lobata* (kudzu), and a number of *Lupinus* species [13,16].

Traditional knowledge of medicinal plants and their use by indigenous healers and drug development in the present are not only useful for conservation of cultural tradition and biodiversity but also for community health care and drug development in the local people. The indigenous knowledge on medicinal plants appears when humans started and learned how to use the traditional knowledge on medicinal plants [6]. The present study in thus an attempt to document different plant species of Rajshahi used by local health healers to cure different ailments.

## 2. Materials and Methods

In the present survey, a total of 32 plant species under 23 genera on the family Fabaceae were collected and recorded for their use in various ailments. A total of 130 local people having an age range 25-65 years were interviewed using semi-structured interviewed method [2]. Professionally they were peasant, day labor, farmer, house wives, medicine men, small shop keepers etc. Among them 55 were female and rest 75 were male. Regular field studies were made in the study area during the period. The information about the plants used for various diseases was gathered through interviews and discussion with the

elderly people, medicine men and traditional medical practitioners were also consulted. Triangulation methods have been followed for data validation in the field. Plant specimens with flowers and fruits were collected and processed using standard herbarium techniques. Herbal

plants referred by these people were authentically identified with the help of [1,7,10]. The voucher specimens are stored at Rajshahi University Herbarium (RUH) for future reference.

**Table 1. List of selected plants and their folkloric uses**

S/N	Scientific name	Local name	Habit	Part(s) used	Uses	Voucher number
1	<i>Abrus precatorius</i> L.	Kuch	Climber	Seed, root	Paralysis, sciatica, stiffness of the shoulder joint, white leprosy, stimulant.	MIP 12
2	<i>Acacia catechu</i> (L. f.) Willd.	Khair	Tree	Bark	Astringent, anthelmintic, antidiarrhetic, antipyretic, cures itching, inflammations, sore throat, bronchitis, indigestion, ulcers, boils, leucoderma, psoriasis, leprosy and elephantiasis, strengthens the teeth.	MIP 34
3	<i>Acacia nilotica</i> (L.) Willd. ex Delile	Babla	Tree	Leaf, pods, flower	Astringent, tonic to the liver and brain, antipyretic, leucoderma, gonorrhoea, strangury, diarrhea, cystitis, vaginitis, dysentery, ophthalmia, cough and insanity.	MIP 35
4	<i>Albizia lebbek</i> (L.) Benth	Sirish	Tree	Leaf, seed	Ophthalmia, asthma, astringent, tonic to the brain, gonorrhoea, tubercular glands, leucoderma and leprosy.	MIP 55
5	<i>Albizia procera</i> (Roxb.) Benth	Koroi	Tree	Leaf, bark	Insecticidal, ulcer, worms and scabies.	MIP 33
6	<i>Bauhinia acuminata</i> L.	Kanchan	Tree	Leaf, bark	Biliousness, bladder stone, asthma and leprosy.	MIP 27
7	<i>Butea monosperma</i> (Lam.) Taub.	Palash	Tree	Bark	Aphrodisiac, laxative, anthelmintic, dysentery, piles, cold, cough, astringent, diarrhea and stomatitis.	MIP 30
8	<i>Cajanus cajan</i> (L.) Millsp.	Arhar	Shrub	Leaf, Root	Diabetes and jaundice.	MIP 21
9	<i>Caesalpinia bondu</i> L.	Nata	Shrub	Seed	Kidney disease and blood pressure.	MIP 17
10	<i>Caesalpinia pulcherrima</i> (L.) Sw.	Choto-krisnachura	Tree	Whole plant, root, flower, wood	Tonic, stimulant, astringent, cholera, purgative, abortifacient, febrifuge, bronchitis, asthma, malarial fever, intestinal worms, coughs, chronic catarrh, emmenagogue, diarrhea, dysentery and internally in skin diseases.	MIP 15
11	<i>Cassia fistula</i> L.	Badarlathi	Tree	Leaf, root	Burning sensation, leprosy, syphilis and malaria.	MIP 24
12	<i>Clitoria ternatea</i> Linn.	Aparajita	Climber	Bark, leaf, flower	Irritation of the bladder and urethra, earaches and cough of children.	MIP 38
13	<i>Crotalaria alata</i> D. Don.	Jhunjhuni	Herb	Seed	Rheumatism.	MIP 45
14	<i>Dalbergia sissoo</i> Roxb.	Sissoo	Tree	Wood, leaf	Abscess, astringent, haemorrhages, epistaxis, menorrhagia, bleeding piles and acute stage of gonorrhoea.	MIP 58
15	<i>Desmodium gangeticum</i> (L.) DC.	Chalani	Herb	Root	Alterative, tonic, anthelmintic, aphrodisiac, astringent to the bowels, typhoid, fever, piles, asthma, bronchitis, dysentery, diarrhea, biliousness, cough, chronic affections of the chest and lungs and whooping cough.	MIP 67
16	<i>Desmodium triflorum</i> (L.) DC.	Kodaliya	Herb	Leaf, root	Blindness, eye diseases, sores, whitlow, spleen complaints, stomach trouble, colic, diarrhea, menorrhagia, breast pain, galactagogue, laxative, dysentery, wounds, abscesses, carminative, tonic, diuretic, cough, asthma and bilious complaints.	MIP 68
17	<i>Erythrina variegata</i> L.	Madar	Tree	Leaf, bark, root	Toothache, fever and menstrual disease.	MIP 70
18	<i>Lablab purpureus</i> (L.) Sweet	Sim	Climber	Leaf	Fresh leaves pounded and mixed with lime are rubbed over ringworms to cure.	MIP 59
19	<i>Melilotus indica</i> (L.) All.	Banmethi	Herb	Root	The roots of this plant and <i>Amaranthus spinosus</i> are crushed together and taken with water, to stop bleeding through nose and mouth.	MIP 69
20	<i>Mimosa pudica</i> L.	Ljabati	Climber	Root	Fever and snake-bite.	MIP 66
21	<i>Mimosa diplotricha</i> C. Wright ex Sauv.	Sadalajjabati	Herb	Leaf	Skin diseases.	MIP 44
22	<i>Pisum sativum</i> L.	Motor	Herb	Seed	Refrigerant, appetizer, fattening, laxative, alleviative of bile, phlegm, burning of the skin and, emollient.	MIP 40
23	<i>Pithecolobium dulce</i> (Roxb.) Benth	Gilapifol	Tree	Leaf	Febrifuge and enema, Saponins showed significant activity against carrageenin-induced oedema and formaldehyde-induced arthritis. Ethanolic extract of the leaf possesses strong antifungal and moderate antibacterial properties.	MIP 43
24	<i>Pongamia pinnata</i> (L.) Pierre		Tree	Leaf, seed	Ulcers, worms, medicated baths, rheumatic pains, hypotensive properties, produces uterine contractions, febrifuge and tonic, bronchitis and whooping cough, leprosy sores, skin diseases and painful rheumatic joints.	MIP 53
25	<i>Saraca asoka</i> (Roxb.) de Wilde	Asoke	Tree	Bark, leaf, flower	Irregular menstruation, blood-purifying properties, stomachache, excellent uterine tonic, haemorrhagic dysentery.	MIP 64
26	<i>Senna sophora</i> L.	Kalkasundha	Herb	Leaf, root	Dyspepsia.	MIP 76
27	<i>Senna alata</i> (L.) Roxb.	Dadmardan	Shrub	Leaf	Eczema and dad.	MIP 86
28	<i>Senna occidentalis</i> Roxb.	Boro kolkeshundha	Shrub	Root	The root is made into a paste and given to nursing women for purification of the milk.	MIP 94
29	<i>Senna tora</i> (L.) Roxb.	Chakunda	Herb	Leaf	Leaves and seeds are used as remedy for ring worm, skin disease and asthma.	MIP 88
30	<i>Tamarindus indica</i> L.	Tentul	Tree	Fruit, Leaf, bark	Burning sensation, heart disease, astringent and tonic, asthma, amenorrhea, fever, diarrhea and topically for loss of sensation in paralysis.	MIP 77
31	<i>Uraria picta</i> (Jacq.) DC.	Sonkarjata	Herb	Whole plant, leaf, root, pods	Heart trouble, fractured bone, aphrodisiac properties, cough, chills and fevers, antiseptic, gonorrhoea, Pods are useful in sore-mouth of children. Roots and leaves are used for typhoid and tetanus.	MIP 79
32	<i>Vigna mungo</i> (L.) Hepper	Maskalay	Herb	Seed	Laxative, aphrodisiac, tonic, appetizer, diuretic, galactagogue, styptic, piles, asthma, leucoderma, scabies, gonorrhoea, pains, epistaxis, paralysis, rheumatism and affections of the nervous system, liver and cough.	MIP 25

### 3. Results and Discussion

The present study deals with the study of medicinal plants used by local people of Rajshahi, Bangladesh. A total of 32 medicinal plants species belonging to 23 genera were used by the local health healers for the treatment of different diseases. Among different plant parts used by this people, the leaves are used most frequently to cure wounds and they applied mostly on the external surface of the body. Generally fresh part of the plant can be used for the preparation of medicine. The result of this investigation showed that these local people of Rajshahi still depend on medicinal uses of plants for the treatment of asthma, abscess, anthelmintic, astringent, cough and cold, fever, paralysis, piles, diarrhea, worm, heart disease, eczema, dandruff, whooping cough, ulcers, snake-bite, ring worm, diuretic, breast pain, bronchitis, dysentery, gonorrhoea, leprosy, burning sensation, kidney disease, blood pressure, malaria, syphilis, cholera, ophthalmia, psoriasis, sciatica and many types of diseases. These commonly used medicinal plant species are arranged in alphabetical order followed by their scientific name, local name, voucher number, parts used and its uses.

### 4. Conclusions

The present findings are probably the first record of medicinal plants on the family Fabaceae of Rajshahi using standard research protocols. A total of 32 plant species under 23 genera of Fabaceae family have been documented which are used for the treatment of different diseases. The present study may be a preliminary contribution to the medicinal plants of this area using standard research methods, focusing on medicinal plants and their local uses for the healthcare. This healthcare knowledge transmitted orally from one generation to generation. This detailed information will be helpful for the pharmacognosist, ethno-botanists, botanist and pharmacologist for the collection and identification of the plant for their research work.

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