



## Folk Medicinal Practices of a Village Practitioner in Jessore District, Bangladesh

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### ABSTRACT

*The medicinal plants and formulations of a folk medicinal practitioner practicing in Ichapur village of Jessore district, Bangladesh was documented. The practitioner was observed to use a total of 33 plants distributed into 26 families for treatment of a number of diseases, which included menstrual problems, various types of pain, abscess, pus in ears, rickets, bleeding from external cuts and wounds, tumor in scrotum, gastric and liver disorders, insomnia, sexual disorders, gastrointestinal tract disorders, jaundice, respiratory tract disorders, skin disorders, burning sensations during urination, helminthiasis, burning sensations in chest, and hair loss. This type of rural phytotherapeutic practice gives scientists an opportunity to conduct suitable research on the plant species used and which may in turn lead to discovery of more affordable and efficacious medicines.*

**Keywords:** Folk medicine; Ichapur; Jessore; Bangladesh

### INTRODUCTION

Diseases and their treatment possibly appeared immediately following the advent of human beings. Over a number of millennia, this treatment of various diseases through possibly trial and error took various forms in different countries, which are now collectively referred to as traditional medicinal systems. Bangladesh has several forms of traditional medicinal systems like Ayurveda, Unani, homeopathy, and folk medicine, the latter including tribal medicine. Folk medicine is the most common form of medicine practiced in Bangladesh for anybody can practice folk medicine simply by having a rudimentary knowledge of medicinal plants and practicing as a side-occupation. This is not to say that all folk medicinal practitioners are quacks or do not possess information of much value. In fact, a folk medicinal practitioner, who may be using a single plant to treat a single disease (usually folk medicinal practitioners or FMPs use plants in their treatment formulations), may prove to be of value for that plant may be really a good therapy for that particular disease. As such documentation of the plant species is important for they can give leads to scientists in conducting appropriate pharmacological and therapeutic research on medicinal plants. Since Bangladesh has more than 86,000 villages besides cities and towns, and since practically all villages have at least one FMP and towns and cities have multiple FMPs, it is a colossal task to document folk medicinal practices in Bangladesh in totality. However, we have taken on this task and have documented folk medicinal practices of different FMPs and have noted considerable variations in their use of plant species for therapeutic purposes [1-31]. These variations in use of plant species led us to document the phytotherapeutic practices of a FMP practicing in Ichapur village of Jessore district, Bangladesh. The ultimate objective of these documentations is to build up a data base of medicinal plants in Bangladesh.

## EXPERIMENTAL SECTION

The survey was conducted in Ichapur village situated in Jessore district, Bangladesh. Prior Informed Consent was obtained from the male FMP (Md. Alamgir Kabir, age 40 years), for the survey and who resided in Ichapur village. Actual interviews were carried out with the help of a semi-structured questionnaire and the guided field-walk method of Martin [32] and Maundu [33]. In this method, the FMP took the interviewers on guided field-walks through areas from where he collected his medicinal plants, pointed out the plants, and described their uses. Interviews were carried out in the Bengali language, which was spoken alike by the FMP and the interviewers. Plant specimens were photographed, collected, pressed and dried and identified at the Bangladesh National Herbarium.

## RESULTS AND DISCUSSION

The practitioner was observed to use a total of 33 plants distributed into 26 families for treatment of a number of diseases, which included menstrual problems, various types of pain, abscess, pus in ears, rickets, bleeding from external cuts and wounds, tumor in scrotum, gastric and liver disorders, insomnia, sexual disorders, gastrointestinal tract disorders, jaundice, respiratory tract disorders, skin disorders, burning sensations during urination, helminthiasis, burning sensations in chest, and hair loss. The diversity of diseases treated suggests that the FMP had quite good knowledge on the medicinal properties of at least a number of plants. Most often, a single plant or plant part was used to treat a single ailment. However, the leaves of *Heliotropium indicum* were used to treat both rickets and to stop crying in babies who cried excessively and apparently without cause. In a few instances, two plant parts were used in combination. One example was the use of roots of *Achyranthes aspera* along with fruits of *Piper nigrum* to treat menstrual pain.

Rural people in Bangladesh lack access to modern doctors, diagnostic centers, and hospitals. What is also important is that they in most cases cannot afford modern treatment. A further problem is that even if they are given modern (allopathic) medicines, there are instances of over-dosage, not taking full prescribed dose of antibiotics or medicines, or taking over dosage of over the counter (OTC) drugs. On the other hand, the formulations used by FMPs are on the most part simple and over-dosage is usually not possible because the FMP dispenses medications for only a few days. Self-medication is not possible because the FMP prepares all medications. As such, scientific validation of any FMP's formulations is important not only to ensure proper safety of medication dosage but also if a FMP medication is found to be useful the plant used in that medication can be subjected to further research leading to possible discovery of newer and better drugs.

A random search on several plants suggests that the plants used by the FMP (at least a few) are scientifically validated in their uses. The FMP used *Achyranthes aspera* for relieving menstrual pain. Antinociceptive activity has been reported for leaves of the plant [34]. *Calotropis procera* was also used by the FMP to treat pain arising from sprain. Such pain is also usually accompanied by inflammation. Interestingly, analgesic and anti-inflammatory effects have been described for this plant [35]. *Eclipta alba* was used by the FMP to treat waist pain. The analgesic effects of this plant have been reviewed [36].

*Crataeva nurvala* was used by the FMP for treatment of tumor in the scrotum and *Carica papaya* used for treatment of gastric and liver disorders. The first plant has been shown to be useful in benign prostrate hyperplasia [37] and so may be useful for other forms of tumor, while the fruits of the second plant have been shown to have hepatoprotective activity [38], suggesting that the plant may be good against liver disorders. In Bangladesh, both the ripe (in raw form) and unripe fruits (in cooked form) are widely taken for digestive disorders, acidity, flatulence, and diarrhea or dysentery. Leaf extract of the plant has been shown to protect rats against gastric damage [39]. *Tamarindus indica*, used by the FMP for jaundice, also has reported hepatoprotective activity [40]. Thus, even a random survey of some plants used by the FMP shows scientific validity behind their uses further suggesting that all the plants used by the FMP deserve scientific attention and research.

**Table 1: Medicinal plants and formulations of the FMP from Ichapur village in Jessore district, Bangladesh**

Serial Number	Scientific Name	Family Name	Local Name	Parts used	Ailments and mode of medicinal use
1	<i>Hygrophila auriculata</i> (Schum.) Heyne.	Acanthaceae	Kele pora	Leaf	Menstrual irregularity. Pills are prepared from a mixture of crushed leaves and table salt. Then while bathing in a pond, the pills are taken orally while standing in waist deep water.
2	<i>Achyranthes aspera</i> L.	Amaranthaceae	Uhut lengra	Root	Menstrual pain. Pills are prepared from crushed roots and fruits of <i>Piper nigrum</i> . Five tablets are taken orally daily on an empty stomach for 15 consecutive days.
3	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Kata khuria	Root	Abscess. Paste of root with a pinch of table salt is topically applied on top of abscess.
4	<i>Calotropis procera</i> (Aiton)	Apocynaceae	Akondo	Leaf	Pain due to hand or leg sprain. Oil is rubbed over the leaf surface followed by warming the leaf and applying it to painful areas in the morning.
5	<i>Heptapleurum venulosum</i> (Wight & Arn.) Seem.	Araliaceae	Dakuni	Leaf	Pus in ears. 2-3 drops of leaf juice is applied inside the ears thrice daily for 6 consecutive days.
6	<i>Eclipta alba</i> (L.) Hassk.	Asteraceae	Kalo keshari	Leaf	Waist pain. Paste of 1-4 leaves and a pinch of table salt are topically applied to painful area for immediate reduction of pain.
7	<i>Tagetes erecta</i> L.	Asteraceae	Gada ful	Leaf	Bleeding from external cuts and wounds. Leaf paste is topically applied.
8	<i>Heliotropium indicum</i> L.	Boraginaceae	Hatishur	Leaf	Rickets, babies who cry excessively. Paste of leaf and mustard oil is topically applied all over the body till cure.
9	<i>Crataeva nurvala</i> Buch.-Ham.	Capparaceae	Borun	Leaf	Tumor in scrotum. Seven leaves are crushed with one unripe fruit of <i>Capsicum frutescens</i> , half bulb of <i>Allium cepa</i> , a pinch of table salt and taken orally with warm rice for 3 consecutive days.
10	<i>Carica papaya</i> L.	Caricaceae	Pepe gach	Fruit	Gastric and liver disorders. 2-3 slices of ripe fruit are orally taken every day on an empty stomach.
11	<i>Acalypha indica</i> L.	Euphorbiaceae	Mukta jhuri	Leaf	Excessive menstrual discharge. Leaves are fried with cloves of <i>Allium sativum</i> and taken orally.
12	<i>Albizia saman</i> F. Muell.	Fabaceae	Rain tree	Leaf	Insomnia. 5-6 leaves are boiled and taken with mishri (crystalline sugar).
13	<i>Mimosa diplotricha</i> C. Wright	Fabaceae	Lojjaboti	Leaf	Low semen density. Young leaf is chewed daily in the morning on an empty stomach till cure.
14	<i>Pongamia pinnata</i> L.	Fabaceae	Korchona	Leaf	Dysentery. Two and a half gram leaves are squeezed in one and half kg water followed by straining the water. The water is then taken orally once daily till cure.
15	<i>Tamarindus indica</i> L.	Fabaceae	Tetul gach	Root	Jaundice. Paste of roots with water and table salt is taken orally in the morning for 3 consecutive days.
16	<i>Allium cepa</i> L.	Liliaceae	Peyaj	Bulb	Cold and mucus in children. Bulbs are sliced into fine pieces, mixed with honey, slightly warmed and taken orally. See <i>Crataeva nurvala</i> .
17	<i>Allium sativum</i> L.	Liliaceae	Roshun	Bulb	See <i>Acalypha indica</i> .
18	<i>Psidium guajava</i> L.	Myrtaceae	Peyara	Young leaf	Toothache. 3-4 leaves are boiled in one and half kg water. One cup of the still warm water is used for gargling which is repeated daily till cure.
19	<i>Nelumbo nucifera</i> Gaertn.	Nelumbonaceae	Lal padda ful	Leaf	Itch, itch due to allergy. Leaf paste mixed with a little table salt is topically applied to the body for 3 consecutive days.
20	<i>Bougainvillea glabra</i> Choisy	Nyctaginaceae	Bagan bilash	Leaf	Bloating. Two spoonfuls of leaf juice are mixed with 100 ml water and taken orally.
21	<i>Nymphaea rubra</i> Roxb.	Nymphaeaceae	Lal shapla	Whole plant	Scabies, eczema, skin infections. Paste of whole plant is topically applied.

22	<i>Nyctanthes arbor tristis</i> L.	Oleaceae	Sheuli gach	Leaf	Coughs, cold. Half glass leaf juice is taken orally with honey in the morning on an empty stomach.
23	<i>Piper nigrum</i> L.	Piperaceae	Gol morich	Fruit	See <i>Achyranthes aspera</i> .
24	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Durba ghas	Whole plant	Passing of semen with urine. 50g whole plant is made into a paste and taken orally in the morning on an empty stomach for 21 consecutive days.
25	<i>Morinda angustifolia</i> Roxb.	Rubiaceae	Ranga gach	Stem, root	Burning sensations during urination. Paste of stem and root is orally taken in the morning on an empty stomach till cure.
26	<i>Aegle marmelos</i> (L.) Correa ex Schultz	Rutaceae	Bel gach	Leaf	To diminish excessive sexual drive. Leaf juice is taken orally once daily for 7 consecutive days.
27	<i>Glycosmis arborea</i> (Roxb.) DC.	Rutaceae	Motkila	Leaf	Helminthiasis. Leaves are crushed and smelt. Alternately, leaf juice is orally taken with a little sugar for 2 consecutive days.
28	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Shibnath	Root	Excessive bleeding during menstruation. Roots are taken orally.
29	<i>Capsicum frutescens</i> L.	Solanaceae	Morich	Unripe fruit	See <i>Crataeva nurvala</i> .
30	<i>Centella asiatica</i> (L.) Urban	Umbelliferae	Taka gor	Leaf	Burning sensations in chest, watery stool. Two spoonfuls of leaf juice are taken daily on an empty stomach till cure.
31	<i>Clerodendrum viscosum</i> Vent.	Verbenaceae	Vatui gach	Leaf	Hair loss. Leaf juice is applied to scalp.
32	<i>Leea indica</i> (Burm.f.) Merr.	Vitaceae	Achila gach	Leaf	Joint pain. Paste of leaf is mixed with coconut oil, warmed and massaged on painful areas.
33	<i>Curcuma longa</i> L.	Zingiberaceae	Holud	Rhizome	Menstrual irregularities. Juice obtained from one crushed rhizome is taken on an empty stomach in the morning for 21 consecutive days.

### CONCLUSION

The plants used by the FMP can form a readily available and affordable means of treatments of a number of diseases.

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### REFERENCES

- [1] MS Hossan; P Roy; S Seraj; SM Mou; MN Monalisa; S Jahan; T Khan; A Swarna; R Jahan; M Rahmatullah, *Am.-Eur. J. Sustain. Agric.*, **2012**, 6(4), 349-359.
- [2] A Wahab; S Roy; A Habib; MRA Bhuiyan; P Roy; MGS Khan; AK Azad; M Rahmatullah, *Am.-Eur. J. Sustain. Agric.*, **2013**, 7(3), 227-234.
- [3] A Islam; AB Siddik; U Hane; A Guha; F Zaman; U Mokarroma; H Zahan; S Jabber; S Naurin; H Kabir; S Jahan; M Rahmatullah, *J. Chem. Pharmaceut. Res.*, **2015**, 7(2), 367-371.
- [4] RT Esha; MR Chowdhury; S Adhikary; KMA Haque; M Acharjee; M Nurunnabi; Z Khatun; Y.-K Lee; M Rahmatullah, *Am.-Eur. J. Sustain. Agric.*, **2012**, 6(2), 74-84.
- [5] M Rahmatullah; AR Chowdhury; RT Esha; MR Chowdhury; S Adhikary; KMA Haque; A Paul; M Akber, *Am.-Eur. J. Sustain. Agric.*, **2012**, 6(2), 107-112.
- [6] A Biswas; WM Haq; M Akber; D Ferdausi; S Seraj; FI Jahan; AR Chowdhury; M Rahmatullah, *Am.-Eur. J. Sustain. Agric.*, **2011**, 5(1), 15-22.
- [7] KR Biswas; T Ishika; M Rahman; A Swarna; T Khan; MN Monalisa; M Rahmatullah, *Am.-Eur. J. Sustain. Agric.*, **2011**, 5(2), 158-167.
- [8] N Islam; R Afroz; AFMN Sadat; S Seraj; FI Jahan; F Islam; AR Chowdhury; MS Aziz; KR Biswas; R Jahan; M Rahmatullah, *Am.-Eur. J. Sustain. Agric.*, **2011**, 5(2), 219-225.

- [9] M Rahmatullah; MNK Azam; MM Rahman; S Seraj; MJ Mahal; SM Mou; D Nasrin; Z Khatun; F Islam; MH Chowdhury, *Am.-Eur. J Sustain Agric.*, **2011**, 5(3), 350-357.
- [10] M Rahmatullah; KR Biswas, *J. Altern. Complement Med.*, **2012**, 18(1): 10-19.
- [11] M Rahmatullah; A Hasan; W Parvin; M Moniruzzaman; Z Khatun; FI Jahan; R Jahan, *Afr. J. Tradit. Complement. Alternat. Med.*, **2012**, 9(3), 350-359.
- [12] M Rahmatullah; Z Khatun; A Hasan; W Parvin; M Moniruzzaman; A Khatun; MJ Mahal; MSA Bhuiyan; SM Mou; R Jahan, *Afr. J. Tradit. Complement. Alternat Med.*, **2012**, 9(3), 366-373.
- [13] M Rahmatullah; MNK Azam; Z Khatun; S Seraj; F Islam; MA Rahman; S Jahan; MS Aziz; R Jahan, *Afr. J. Tradit. Complement. Alternat Med.*, **2012**, 9(3), 380-385.
- [14] M Rahmatullah; Z Khatun; D Barua; MU Alam; S Jahan; R Jahan, *J. Altern. Complement. Med.*, **2013**, 19(6), 483-491.
- [15] M Rahmatullah; SR Pk; M Al-Imran; R Jahan, *J. Altern. Complement. Med.*, **2013**, 19(7), 599-606.
- [16] A Khatun; MAA Khan; MA Rahman; MS Akter; A Hasan; W Parvin; RJ Ripa; M Moniruzzaman; MJ Mahal; M Rahmatullah, *Am.-Eur. J Sustain. Agric.*, **2013**, 7(5), 319-339.
- [17] MN Nahar; J Ferdous; FZ Samanta; KA Shuly; S Nahar; R Saha; S Islam; MJ Mahal; S Seraj; M Rahmatullah, *Am.-Eur. J. Sustain. Agric.*, **2013**, 7(5), 403-414.
- [18] SA Hasan; MM Uddin; KN Huda; A Das; N Tabassum; MR Hossain; MJ Mahal; M Rahmatullah, *Am.-Eur. J. Sustain. Agric.*, **2014**, 8(1), 10-19.
- [19] I Malek; N Mia; ME Mustary; MJ Hossain; SM Sathi; MJ Parvez; M Ahmed; S Chakma; S Islam; MM Billah; M Rahmatullah, *Am.-Eur. J. Sustain. Agric.*, **2014**, 8(5), 59-68.
- [20] JK Nandi; MF Molla; MK Mishu; M Hossain; MS Razia; SI Doza; KMH Rahman; CS Sarker; M Rahmatullah, *J. Chem. Pharm. Res.*, **2015**, 7(2), 722-726.
- [21] T Rahman; M Marzia; M Noshine; S Afrin; SA Sheela; F Sultana; TI Mouri; MT Islam; PR Das; MS Hossain; M Rahmatullah, *World J. Pharm. Pharmaceut. Sci.*, **2015**, 4(3), 101-111.
- [22] A Islam; AB Siddik; U Hanee; A Guha; F Zaman; U Mokarroma; H Zahan; S Jabber; S Naurin; H Kabir; S Jahan; M Rahmatullah, *World J. Pharm. Pharmaceut. Sci.*, **2015**, 4(3), 180-188.
- [23] A Islam; AB Siddik; U Hanee; A Guha; F Zaman; U Mokarroma; H Zahan; S Jabber; S Naurin; H Kabir; S Jahan; M Rahmatullah, *World J. Pharm. Pharmaceut. Sci.*, **2015**, 4(3), 189-196.
- [24] Aiubali; MM Rahman; MY Hossain; N Aziz; MN Mostafa; MS Mahmud; MF Islam; S Searj; M Rahmatullah, *Am.-Eur. J. Sustain Agric.*, **2013**, 7(4), 290-294.
- [25] ASMHK Chowdhury; MH Shahriar; MS Rahman; MP Uddin; M Al-Amin; MM Rahman; MTA Bhuiyan; S Afrin; S Chowdhury; MM Rahman; AK Azad; M Rahmatullah, *World J. Pharm. Pharmaceut. Sci.*, **2015**, 4(1), 171-182.
- [26] M Akbar; S Seraj; F Islam; D Ferdausi; R Ahmed; D Nasrin; N Nahar; S Ahsan; F Jamal; M Rahmatullah, *Am.-Eur. J. Sustain. Agric.*, **2011**, 5(2), 177-195.
- [27] AR Chowdhury; FI Jahan; S Seraj; Z Khatun; F Jamal; S Ahsan; R Jahan; I Ahmad; MH Chowdhury; M Rahmatullah, *Am.-Eur. J. Sustain. Agric.*, **2010**, 4(2), 237-246.
- [28] D Jabin; S Jahan; MS Hossain; M Rahmatullah, *World J. Pharm. Pharmaceut. Sci.*, **2016**, 5(4), 255-268.
- [29] S Nahar; M Rahmatullah, *World J. Pharm. Pharmaceut. Sci.*, **2016**, 5(4), 2422-2439.
- [30] MJ Akhter; MR Khatun; S Akter; S Akter; TT Munni; I Malek; M Rahmatullah, *World J. Pharm. Pharmaceut. Sci.*, **2016**, 5(8), 212-222.
- [31] S Akter; I Jahan; PR Chowdhury; E Islam; MS Hossain; ABMA Bashar; M Rahmatullah, *J. Chem. Pharm. Res.*, **2016**, 8(8), 795-798.
- [32] GJ Martin, *Ethnobotany: a 'People and Plants' Conservation Manual*, Chapman and Hall, London, **1995**, pp268.
- [33] P Maundu, *Indigenous Knowledge and Development Monitor*, **1995**, 3(2), 3-5.
- [34] CC Barua; A Talukdar; SA Begum; LC Lahon; DK Sarma; DC Pathak; P Borah, *Indian J. Exp. Biol.*, **2010**, 48, 817-821.
- [35] AB Saba; PC Oguntoke; OA Oridupa, *Afr. J. Biomed. Res.*, **2011**, 14, 203-208.
- [36] LS Chokotia; P Vashistha; R Sironiya; H Matoli, *Int. J. Res. Dev. Pharm. Life Sci.*, **2013**, 2(4), 499-502.
- [37] A Bhattacharjee; SC Shashidhara; Aswathanarayana, *Asian Pac. J. Trop. Biomed.*, **2012**, S1162-S1168.
- [38] MZ Sadeque; ZA Begum; BU Umar; AH Ferdous; S Sultana; MK Uddin, *Faridpur Med. Coll. J.*, **2012**, 7(1), 29-32.
- [39] MA Elgadir; M Salama; A Adam, *Int. J. Pharm. Pharmaceut. Sci.*, **2014**, 6(1), 880-884.
- [40] NJ Shammi; ZK Choudhry; MI Khan; MM Hossain, *Bangladesh J. Med. Biochem.*, **2013**, 6(2), 63-67.