



A REPORT ON SOME ETHNOMEDICINAL PLANTS OF MUNSHIGANJ DISTRICT, BANGLADESH

Jannatul Ferdous Mukta and Mohammed Rahmatullah*

Department of Pharmacy, University of Development Alternative, Lalmatia, Dhaka-
1207, Bangladesh.

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*Corresponding Author

**Prof. Dr. Mohammed
Rahmatullah**

Department of Pharmacy,
University of Development
Alternative, Lalmatia,
Dhaka-1207, Bangladesh.

ABSTRACT

Background. Plants have throughout history proved to be excellent sources for discovery of drugs and treatment of ailments. Knowledge of the traditional therapeutic uses of plants is usually obtained through documentation of therapeutic practices of traditional medicinal practitioners. The objective of this study was to document the medicinal plants used by a folk medicinal practitioner (FMP) of Munshiganj district, Bangladesh. **Methods.** Interview of the FMP was carried out with the help of a semi-structured questionnaire and the guided field-walk method. **Results.** The FMP used a total of 9 plants distributed into 9 families in his formulations. **Conclusion.** A perusal of available ethnomedicinal literature on the plants showed that the

phytotherapeutic uses of the present FMP are for the most part previously unreported.

KEYWORDS: Folk medicinal practitioner, medicinal plants, Munshiganj, Bangladesh.

BACKGROUND

Folk medicine and tribal medicine are perhaps the most common form of mainly plant-based traditional medicinal systems among, respectively, the mainstream and tribal people of the country. Folk medicinal practitioners (FMPs) can be found all over the country and can be practiced by anybody who has even a preliminary working knowledge of the therapeutic properties of plants or merely the courage to experiment with plant-based treatment of diseases. Since adequate regulations do not exist on folk medicinal practice and since FMPs can come from highly diverse backgrounds, they use a wide spectrum of floral species coupled with polyherbal formulations, herbo-metallic preparations and combination of phytotherapeutic and zootherapeutic practices in their treatment.^[1,33] Thus, although some

FMPs may be merely charlatans, overall the practices of FMPs in Bangladesh call for adequate documentation towards discovery of novel therapies for existing and emerging diseases. The objective of this study was to document the phytotherapeutic practices of a FMP in Munshiganj district, Bangladesh.

METHODS

The FMP who was interviewed was named Abdul Bari, by gender male and who practiced in Pathorghata village of Munshiganj district, Bangladesh. Prior informed consent was initially obtained from the FMP. The FMP was informed as to the nature of our visit and consent obtained to disseminate any information provided, including his name both nationally and internationally. The FMP agreed to divulge a few information regarding his phytotherapeutic practices, which he mentioned are of a novel nature. Actual interviews were conducted in the Bengali language, which was spoken fluently by the FMP as well as the interviewers. The interviews were conducted with the help of a semi-structured questionnaire and the guided field-walk method of Martin^[34] and Maundu.^[35] In this method the FMP took the interviewers on guided field-walks through areas from where he collected his medicinal plants or plant parts, pointed out the plants, and described their uses. All plant specimens were photographed and collected on the spot, pressed, dried and brought back to Bangladesh National Herbarium at Dhaka for identification. Voucher specimens were deposited with the Medicinal Plant Collection Wing of the University of Development Alternative.

RESULTS

The FMP divulged the names of 9 plants distributed into 9 families, which he used in both monoherbal and polyherbal formulations. The results are shown in Table 1. The polyherbal formulations were used to treat inability to talk, asthma, paralysis, vomiting, diarrhea, acidity, physical weakness, leucorrhea, and helminthiasis. The monoherbal formulations were used to treat eye disorder, abscess, and gastric ulcer. One of the three polyherbal formulations used by the FMP contained whole plant or plant parts from five different plants.

Table 1. Medicinal plants and formulations of the FMP from Munshiganj district, Bangladesh.

Serial Number	Scientific Name	Family Name	Local Name	Parts used	Ailments and mode of medicinal use
1	<i>Acorus calamus</i> L.	Acoraceae	Boch	Leaf	Inability to talk, asthma, paralysis. Leaf juice is mixed with rhizome juice of <i>Zingiber officinale</i> and taken orally twice daily for 10-12 days (in the morning on an empty stomach and in the evening after meals).
2	<i>Asparagus racemosus</i> Willd.	Asparagaceae	Shotomuli	Whole plant	See <i>Terminalia chebula</i> .
3	<i>Bombax ceiba</i> L.	Bombacaceae	Shimul	Root	See <i>Terminalia chebula</i> .
4	<i>Heliotropium indicum</i> L.	Boraginaceae	Hatishur	Root, leaf	Vomiting, diarrhea, acidity. Juice obtained from crushed root is orally taken in the morning with rhizome juice of <i>Zingiber officinale</i> . If taken often, can create constipation. Eye disorder, abscess. 2-3 drops of leaf juice is applied to eyes or abscess.
5	<i>Terminalia chebula</i> Retz.	Combretaceae	Hortoki	Fruit	Physical weakness, helminthiasis, leucorrhoea. Fruits of <i>Terminalia chebula</i> , whole plants of <i>Asparagus racemosus</i> , roots of <i>Bombax ceiba</i> , dried young fruits of <i>Aegle marmelos</i> , and aerial parts of <i>Mimosa pudica</i> are boiled in water. Half cup of the decoction is taken orally twice daily on an empty stomach for 7-8 days.
6	<i>Mimosa pudica</i> L.	Fabaceae	Lojjaboti	Aerial part	See <i>Terminalia chebula</i> .
7	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Durba ghas	Whole plant	Gastric ulcer. Whole plant is boiled in water. Half cup of the decoction is taken orally twice daily on an empty stomach for 15-20 days.
8	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	Bael	Young fruit	See <i>Terminalia chebula</i> .
9	<i>Zingiber officinale</i> Roscoe	Zingiberaceae	Ada	Rhizome	See <i>Heliotropium indicum</i> . See <i>Acorus calamus</i> .

DISCUSSION

Since the FMP claimed that his use of plants were novel for the diseases treated, it was of interest to compare some reported traditional medicinal uses of the plants versus uses by the

present FMP. The traditional uses of *Acorus calamus* are quite extensive; in Ayurveda, the plant is used as an emetic, expectorant, emmenagogue, laxative, diuretic, aphrodisiac, carminative, anthelmintic, and for treatment of mental disorders, gastrointestinal disorders, respiratory tract disorders, kidney and liver troubles; folk medicinal uses include nervous system diseases, gastrointestinal disorders, respiratory disorders, snake bite, gout and rheumatism.^[36] Thus the FMP's use of the plant to treat inability to talk appears to be a novel use.

Asparagus racemosus is used in traditional medicine to prevent ageing, immunostimulant, improve mental function, and to treat nerve disorders, dyspepsia, tumors, neuropathy and hepatopathy. Ayurvedic uses, particularly of the roots, include being used as galactagogue, emollient, nervine tonic, constipation, aphrodisiac and as a diuretic.^[37] In Unani system of medicine, *Bombax ceiba* is considered to be constipative, siccative, uterine tonic, beneficial in leucorrhea, increase consistency of semen; ethnomedicinal uses have been reviewed to be used in diarrhea, asthma, impotency, skin diseases, and helminthiasis.^[38] In India, *Heliotropium indicum* is used to treat skin disorders, poisonous bites, stomachache and nervous disorders; in Jamaica, the plant is used for fevers, ulcers, venereal diseases and sore throat; in other parts of the world, it is used for treatment of kidney stone (reviewed by Dash and Abdullah.^[39]).

In Ayurvedic formulations, *Terminalia chebula* is used for chronic ulcers, leucorrhea, pyorrhea, and fungal infections of the skin.^[40] It has been reviewed that ethnomedicinal and traditional uses of *Mimosa pudica* include treatment of leprosy, dysentery, vaginal and uterine complaints, asthma, leucoderma (Ayurveda); bilious fevers, piles, jaundice, leprosy (Unani); and gynecological disorders, toothache and skin disorders in folk medicine.^[41] Folk medicinal uses of *Cynodon dactylon* include treatment of cancer, gastrointestinal disorders, respiratory tract disorders, skin disorders, hypertension, measles, rubella and eye disorders (reviewed by Nagori and Solanki^[42]). The plant extract is used to stop bleeding from cuts and wounds,^[43] and experimentally has been proved effective against gastric ulcer.^[44]

Ethnomedicinal uses of *Aegle marmelos* include wound healing, digestive disorders, ulcers, headache, hypertension, diabetes, and gastrointestinal disorders; in Ayurveda, fruits are used to treat tuberculosis and loss of appetite (reviewed by Upadhyay^[45]). In Ayurveda, *Zingiber officinale* rhizomes are used for respiratory tract disorders, indigestion, flatulence, loss of appetite, nausea and pain.^[46]

Taken together, the phytotherapeutic uses of the Munshiganj FMP shows some novel uses. The use of *Acorus calamus* to treat inability to talk and paralysis merits scientific attention. The same applies to the use of *Cynodon dactylon* to treat gastric ulcer. Analgesic drugs like aspirin, as well as stress (a common phenomenon in today's world) can cause ulcers and an affordable and readily available remedy can prove beneficial to human beings throughout the world.

CONCLUSION

The phytotherapeutic practices of the FMP appear to be novel and can be expedient for new drug discoveries.

Conflicts of interest

The authors declare that there are no conflicts of interest.

REFERENCES

1. Rahmatullah M, Ferdausi D, Mollik MAH, Jahan R, Chowdhury MH, Haque WM: A Survey of Medicinal Plants used by Kavirajes of Chalna area, Khulna District, Bangladesh. *Afr J Tradit Complement Alternat Med.*, 2010; 7(2): 91-7.
2. Rahmatullah M, Khatun MA, Morshed N, Neogi PK, Khan SUA, Hossan MS, Mahal MJ, Jahan R: A randomized survey of medicinal plants used by folk medicinal healers of Sylhet Division, Bangladesh. *Adv Nat Appl Sci.*, 2010; 4(1): 52-62.
3. Rahmatullah M, Kabir AABT, Rahman MM, Hossan MS, Khatun Z, Khatun MA, Jahan R: Ethnomedicinal practices among a minority group of Christians residing in Mirzapur village of Dinajpur District, Bangladesh. *Adv Nat Appl Sci.*, 2010; 4(1): 45-51.
4. Rahmatullah M, Momen MA, Rahman MM, Nasrin D, Hossain MS, Khatun Z, Jahan FI, Khatun MA, Jahan R: A randomized survey of medicinal plants used by folk medicinal practitioners in Daudkandi sub-district of Comilla district, Bangladesh. *Adv Nat Appl Sci.*, 2010; 4(2): 99-104.
5. Rahmatullah M, Mollik MAH, Ahmed MN, Bhuiyan MZA, Hossain MM, Azam MNK, Seraj S, Chowdhury MH, Jamal F, Ahsan S, Jahan R: A survey of medicinal plants used by folk medicinal practitioners in two villages of Tangail district, Bangladesh. *Am-Eur J Sustain Agric*, 2010; 4(3): 357-62.
6. Rahmatullah M, Mollik MAH, Islam MK, Islam MR, Jahan FI, Khatun Z, Seraj S, Chowdhury MH, Islam F, Miajee ZUM, Jahan R: A survey of medicinal and functional

- food plants used by the folk medicinal practitioners of three villages in Sreepur Upazilla, Magura district, Bangladesh. *Am-Eur J Sustain Agric*, 2010; 4(3): 363-73.
7. Rahmatullah M, Jahan R, Khatun MA, Jahan FI, Azad AK, Bashir ABMA, Miajee ZUM, Ahsan S, Nahar N, Ahmad I, Chowdhury MH: A pharmacological evaluation of medicinal plants used by folk medicinal practitioners of Station Purbo Para Village of Jamalpur Sadar Upazila in Jamalpur district, Bangladesh. *Am-Eur J Sustain Agric*, 2010; 4(2): 170-95.
 8. Rahmatullah M, Ishika T, Rahman M, Swarna A, Khan T, Monalisa MN, Seraj S, Mou SM, Mahal MJ, Biswas KR: Plants prescribed for both preventive and therapeutic purposes by the traditional healers of the Bede community residing by the Turag River, Dhaka district. *Am-Eur J Sustain Agric*, 2011; 5(3): 325-31.
 9. Rahmatullah M, Azam MNK, Rahman MM, Seraj S, Mahal MJ, Mou SM, Nasrin D, Khatun Z, Islam F, Chowdhury MH: A survey of medicinal plants used by Garo and non-Garo traditional medicinal practitioners in two villages of Tangail district, Bangladesh. *Am-Eur J Sustain Agric*, 2011; 5(3): 350-7.
 10. Rahmatullah M, Biswas KR: Traditional medicinal practices of a Sardar healer of the Sardar (Dhangor) community of Bangladesh. *J Altern Complement Med*, 2012; 18(1): 10-9.
 11. Rahmatullah M, Hasan A, Parvin W, Moniruzzaman M, Khatun Z, Jahan FI, Jahan R: Medicinal plants and formulations used by the Soren clan of the Santal tribe in Rajshahi district, Bangladesh for treatment of various ailments. *Afr J Tradit Complement Alternat Med*, 2012; 9(3): 350-9.
 12. Rahmatullah M, Khatun Z, Hasan A, Parvin W, Moniruzzaman M, Khatun A, Mahal MJ, Bhuiyan MSA, Mou SM, Jahan R: Survey and scientific evaluation of medicinal plants used by the Pahan and Teli tribal communities of Natore district, Bangladesh. *Afr J Tradit Complement Alternat Med*, 2012; 9(3): 366-73.
 13. Rahmatullah M, Azam MNK, Khatun Z, Seraj S, Islam F, Rahman MA, Jahan S, Aziz MS, Jahan R: Medicinal plants used for treatment of diabetes by the Marakh sect of the Garo tribe living in Mymensingh district, Bangladesh. *Afr J Tradit Complement Alternat Med*, 2012; 9(3): 380-5.
 14. Rahmatullah M, Khatun Z, Barua D, Alam MU, Jahan S, Jahan R: Medicinal plants used by traditional practitioners of the Kole and Rai tribes of Bangladesh. *J Altern Complement Med*, 2013; 19(6): 483-91.

15. Rahmatullah M, Pk SR, Al-Imran M, Jahan R: The Khasia tribe of Sylhet district, Bangladesh and their fast-disappearing knowledge of medicinal plants. *J Altern Complement Med*, 2013; 19(7): 599-606.
16. Akter S, Nipu AH, Chyti HN, Das PR, Islam MT, Rahmatullah M: Ethnomedicinal plants of the Shing tribe of Moulvibazar district, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2014; 3(10): 1529-37.
17. Azad AK, Mahmud MR, Parvin A, Chakraborty A, Akter F, Moury SI, Anny IP, Tarannom SR, Joy SK, Chowdhury SY, Akter S, Rahmatullah M: Medicinal plants of a Santal tribal healer in Dinajpur district, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2014; 3(10): 1597-1606.
18. Azad AK, Mahmud MR, Parvin A, Chakraborty A, Akter F, Moury SI, Anny IP, Tarannom SR, Joy SK, Chowdhury SY, Akter S, Rahmatullah M: Ethnomedicinal surveys in two Mouzas of Kurigram district, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2014; 3(10): 1607-20.
19. Kamal Z, Bairage JJ, Moniruzzaman, Das PR, Islam MT, Faruque MO, Islam MR, Paul PK, Islam MA, Rahmatullah M: Ethnomedicinal practices of a folk medicinal practitioner in Pabna district, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2014; 3(12): 73-85.
20. Anzumi H, Rahman S, Islam MA, Rahmatullah M: Uncommon medicinal plant formulations used by a folk medicinal practitioner in Naogaon district, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2014; 3(12): 176-88.
21. Amin R, Hasan MM, Rahman MA, Nargis T, Akter MH, Islam MT, Das PR, Rahmatullah M: Home remedies of a rural housewife in Jamalpur district, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2015; 4(10): 329-335.
22. Rahman F, Rahmatullah M: Medicinal plant formulations of the Musohor tribe of Birganj in Dinajpur district, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2015; 4(11): 177-185.
23. Alam MS, Alamin M, Bari AN, Adhikary AC, Khatun MM, Parvin MR, Islam E, Rahmatullah M: Medicinal uses of plants by a female folk medicinal practitioner of Narayanganj district, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2015; 4(11): 361-368.
24. Zaman T, Keya KF, Akter S, Sagar MH, Khan MS, Bhuiyan MB, Malek I, Rahmatullah M: Plants as medicines: documentation of medicinal plants used by a Khasia tribal practitioner in Habiganj district, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2015; 4(12): 55-63.

25. Kundu MK, Alam MM, Arefin Z, Yasmin S, Yeasmin S, Islam E, Rahmatullah M: Phytotherapeutic practices of a folk medicinal practitioner of Jhenaidah district, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2016; 5(2): 127-136.
26. Mukti M, Rahman MA, Bashir ABMA, Hossain S, Rahmatullah M: Medicinal plants of the Khatriya and Kasya clans of the Bagdi people in Rajbari district in Bangladesh. *Am.-Eur J Sustain Agric*, 2013; 7(3): 170-177.
27. Kabir MH, Hasan N, Rahman MM, Rahman MA, Khan JA, Hoque NT, Bhuiyan MRQ, Mou SM, Jahan R, Rahmatullah M: A survey of medicinal plants used by the Deb barma clan of the Tripura tribe of Moulvibazar district, Bangladesh. *J Ethnobiol Ethnomed*, 2014; 10: 19.
28. Amin R, Hasan MM, Rahman MA, Nargis T, Akter MH, Islam MT, Das PR, Rahmatullah M: Home remedies of a rural housewife in Jamalpur District, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2015; 4(10): 329-335.
29. Chowdhury ASMHK, Shahriar MH, Rahman MS, Uddin MP, Al-Amin M, Rahman MM, Bhuiyan MTA, Afrin S, Chowdhury S, Rahman MM, Azad AK, Rahmatullah M: Home remedies of rural folks: a study in Kadipur village of Chuadanga District, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2015; 4(1): 171-182.
30. Mahmud MR, Parvin A, Anny IP, Akter F, Tarannom SR, Moury SI, Joy SK, Akter S, Chowdhury SY, Chakraborty A, Azad AK, Rahmatullah M: Home remedies of village people in six villages of Dinajpur and Rangpur Districts, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2015; 4(2): 63-73.
31. Rahman S, Rahmatullah M: Medicinal plant home remedies in several villages of Patuakhali district, Bangladesh. *J Chem Pharmaceut Res.*, 2015; 7(6): 147-151.
32. Nahar S, Rahmatullah M: Plants, animals, birds, insects, minerals – all are medicines to a folk medicinal practitioner in Nilphamari district, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2016; 5(4): 2422-2439.
33. Akhter J, Khatun R, Akter S, Akter S, Munni TT, Malek I, Rahmatullah M: Ethnomedicinal practices in Natore district, Bangladesh. *World J Pharm Pharmaceut Sci.*, 2016; 5(8): 212-222.
34. Martin GJ: *Ethnobotany: a 'People and Plants' Conservation Manual*, Chapman and Hall, London, 1995; pp268.
35. Maundu P: *Methodology for collecting and sharing indigenous knowledge: a case study*. *Indigenous Knowledge and Development Monitor*, 1995; 3(2): 3-5.

36. Mukherjee PK, Kumar V, Mal M, Houghton PJ: *Acorus calamus*: Scientific validation of Ayurvedic tradition from natural resources. *Pharmaceutical Biol.*, 2007; 45(8): 651-666.
37. Joshi RK: *Asparagus racemosus* (Shatawari), phytoconstituents and medicinal importance, future source of economy by cultivation in Uttarakhand: A review. *Int J Herbal Med*, 2016; 4(4): 18-21.
38. Rani S, Rahman K, Sultana A: Ethnomedicinal and pharmacological activities of *Mochrus (Bombax ceiba* Linn.): An overview. *TANG (Humanitas Medicine)*, 2016; 6(1): 1-9.
39. Dash GK, Abdullah MS: A review on *Heliotropium indicum* L. (Boraginaceae). *Int J Pharmaceut Sci Res.*, 2013; 4(4): 1253-1258.
40. Dinesh MD, Soorya TM, Vismaya MR, Divya J, Athira TP, Nidhin KB, Ajeesh PP: *Terminalia chebula* A traditional Herbal drug – A short review. *Int J Pharmaceut Sci Invent*, 2017; 6(2): 39-40.
41. Varnika S, Ashish S, Imran A: A review on ethnomedical and traditional uses of *Mimosa pudica* (Chui-Mui). *Int Res J Pharm*, 2012; 3(2): 41-44.
42. Nagori BP, Solanki R: *Cynodon dactylon* (L.) Pers.: A valuable medicinal plant. *Res J Med Plant* 2011, DOI: 10.3923/rjmp.2011.
43. Ashokkumar K, Selvaraj K, Muthukrishnan SD: *Cynodon dactylon* (L.) Pers.: An updated review of its phytochemistry and pharmacology. *J Med Plants Res.*, 2013; 7(48): 3477-3483.
44. Babu KS, Shaker IA, Kumaraswamy D, Basha SS, Sailaja I: Indigenous effect of *Cynodon dactylon* in experimental induced ulcers and gastric secretions. *Int Res J Pharm*, 2012; 3(5): 301-304.
45. Upadhyay RK: Bel plant: A source of pharmaceuticals and ethno medicines. *Int J Green Pharm*, 2015; 9(4): 204-222.
46. Gupta SK, Sharma A: Medicinal properties of *Zingiber officinale* Roscoe – A Review. *IOSR J Pharm Biol Sci.*, 2014; 9(5): 124-129.