



## ETHNODIVERSITY OF MEDICINAL PLANTS USED BY TRIPURA COMMUNITY OF HAZARIKHIL IN CHITTAGONG DISTRICT OF BANGLADESH

Omar Faruque and Shaikh Bokhtear Uddin\*

Department of Botany, University of Chittagong, Chittagong 4331, Bangladesh

### ABSTRACT

An ethno-medicinal plant study of Tripura ethnic community living in Hazarikhil of Chittagong district of Bangladesh was carried out. Information recorded in this paper has been documented by interviewing local herbal practitioners (Baidaya) and men and women of various ages knowledgeable about use of medicinal plants. A total of 43 species in 41 genera, belonging to 35 families have been used for the treatment of various diseases/illness. Voucher specimens were collected during documentation and preserved at the herbarium of Chittagong University (CTGUH). Family and vernacular names of the species are listed along with the information of plant parts used, methods of preparation, doses and mode of application.

**Key words :** Ethno-medicinal plants, Tripura community, herbal practitioners, indigenous healthcare, Bangladesh.

### INTRODUCTION

For centuries, Bangladesh has been the dwelling place of different ethnic groups. In fact, now 35 smaller groups of ethnic communities covering about two percent of the total population are living in different pockets of the hilly north east zones and some areas of the plain lands of Chittagong. They are maintaining their own traditional culture and life style different from other communities of Bangladesh. They live in close contact to nature and depend on it for their daily needs. This dependency makes them aware of proper utilization of plants around them. In course of time they have inherited the unique knowledge of the use of medicinal plants for their primary healthcare (Uddin, 2001).

Chittagong is situated in the southeastern part of Bangladesh and stands on the bank of the River Karnaphuli. It was under the kingdom of Arakan during sixth and seventh centuries and has an area of 8196 sq kilometers, which is 10% of the entire Bangladesh. It has a unique territory with mountains and beautiful landscapes inhabiting three tribal communities *viz.*, Chakma, Hajong, and Tripura.

Bangladesh is endowed with vast resources of medicinal plants. About five thousand plant species have been estimated to be present in Bangladesh, of which about 250 are reported to be used in traditional medicines for the health care of the millions of people of this country (Kadir, 1990). Some medicinal plants from Bangladesh are being used in the preparation of Kabiraji, Hekimi, Unani, Ayurvedic, Homeopathic and Allopathic systems of medicines (Kritikar and Basu, 1993, Chopra *et al.*, 1982). Treatment with medicinal plants is getting importance day by day. Ghani (1998) and Yusuf *et al.* (2009) documented more than 500

plants with their medicinal properties. Recently Uddin (2010) compiled about 750 plants and posted on a website ([www.ethnobotanybd.com/index.php](http://www.ethnobotanybd.com/index.php)).

In 1909, Hutchinson published a book on Chittagong Hill Tracts (CHTs) which is considered to be the pioneer work on ethnobotany in the Indian sub continent. The other reference to the use of plants by local tribes is found in Lewin (1912). Several other works are available on this area in the subcontinent. Rajput (1965) worked on the tribes of CHTs and it was another ethnobotanical work in this part. Later, works of Sirajuddin (1971), Saigal (1978), Tanchangya (1982) and Shelly (1992) are less detailed and largely dependent on Hutchinson's (1909) work. Khan and Huq (1975), Hasan and Khan (1986), Mia and Huq (1988) also worked on medicinal plant of Bangladesh. Some further works on ethnobotany of the tribal people of Chittagong and CHT are available, most of which were done after 1990. Kadir (1990) worked on medicinal plants of Bangladesh and their conservation strategy. Alam (1998) documented the ethnobotanical information and medicinal plant use by Marma community. Chemical properties of some medicinal plants were studied by Rahman and Yusuf (1996), Rahman (1997, 1999), Rahman and Uddin (1998), Rahman *et al.*, (2000, 2003), and Uddin *et al.*, (1998). Some recent works are Gain (2000), Uddin *et al.*, (2006), Rahman *et al.*, (2007, 2008), and Uddin (2010).

### MATERIALS AND METHOD

The present study documented information in the field by following field interview, plant interview and group interview techniques from February 2007 to July 2008. During the field interview, information were noted in the documentation data sheet. In addition, audio recordings were made with a digital voice recorder. The

\* Corresponding author: E mail : roben68@gmail.com

interview involved spoken interactions between two or more people. Its value as a tool of inquiry depends on the context in which it takes place and on the interviewer's skills (Alexiades, 1996). All information regarding plant species, biological forms, habitat, local name and use were documented. Ethnobotanical information was obtained through informal interviews following semi structured and open-ended techniques from knowledgeable people, particularly baidyas (traditional healers) and elderly people.

Voucher specimens were collected during documentation and preserved as herbarium sheets in the Chittagong University Herbarium (CTGUH). The specimens were identified in consultation with experts, by comparing authentic herbarium specimens, and studying available literatures. The descriptions were compared with those described in Hooker (1872-1897), Prain (1903), Heinig (1925), Sinclair (1956), Hassan

(1971), Huq and Khan (1984), Dassanayake and Fosberg (1980-1991), Rahman and Willcock (1993).

## RESULTS AND DISCUSSION

A list of the species with their local name, tribal name, family, illness treated, parts used, mode of preparation and application are presented (Table-1).

Identification of the voucher specimens revealed 43 species in 41 genera under 35 families which are used for treatment of 25 different types of diseases /illness by the Tripura community. Fabaceae is most frequently used in context to the number of species. Similarly, other important families used as medicines are, Euphorbiaceae, Acanthaceae, Verbenaceae and Asteraceae. The most frequently used species are *Cassia alata*, *Solanum toroum*, *Andrographis paniculata* and *Gynura cusimbua* for the treatment of different diseases/illness.

Table - 1 : List of plant species used by the Tripura community in Hazarikhil.

Scientific name	Local name	Tribal name	Family	Illness treated	Parts used	Preparation	Informants, Age, Sex
<i>Acorus calamus</i>	Botch	Botch	Araceae	Cough	R	Tablet prepared from paste of root is taken against cough once daily until cured.	Ram Das, 109, M
<i>Justicia adhatoda</i>	Basak	Basak	Acanthaceae	Cough	L	Leaf extract is taken one or two spoonful twice daily until cured.	Shasindra T, 45, M
<i>Aegle marmelos</i>	Bel	Bel	Rutaceae	Stomach pain, Dysentery with blood	F	Juice prepared from fruit is taken one cupful twice a day for five days.	Shasindra T, 45, M
<i>Allium sativum</i>	Rasun (univariety)	Rowon	Liliaceae	Cough (children)	Bulb	Milk added with paste prepared from leaf and slightly heated in a steel plate is taken one spoonful twice daily for 4-5 days.	Mitali T, 60, F
<i>Amaranthus spinosus</i>	Katamar-issaha	Raktashol	Amarathaceae	Dysentery	R	Sap of root is taken once daily for two days.	Milon Das, 88, M
<i>Andrographis paniculata</i>	Kalomegh	Kalomegh	Acanthaceae	Fever	L	Tablet prepared from paste of leaf is taken twice daily for 3 days.	Ram Das, 109, M
				Fever, Intestinalworm, Spleenomegaly	L	Extract of leaf is taken one or two tea spoonful twice daily until cured.	Shasindra T, 45, M
<i>Areca catechu</i>	Supari	Kuachibaowng	Arecaceae	Diarrhoea	R	Extract prepared from root is taken one tea spoonful twice daily until cured.	Sumittra T, 50, F
<i>Asparagus racemosus</i>	Shotomuli	Sattirsora	Liliaceae	Labor problem, Leucorrhoea	R	Paste of root is taken one tea spoonful once a day.	Milon Das, 88, M
<i>Bacopa monnieri</i>	Brammishak	Nuinna shak	Scrophulariaceae	Boils	WP	Paste prepared from whole plant mixed with coconut oil is applied to boils.	Sumittra T, 50, F
<i>Basella rubra</i>	Pui shak	Pui shak	Basellaceae	Anemia	L	Curry prepared from leaves is taken.	Shasindra T, 45, M
<i>Calotropis gigantea</i>	Akunda	Hakkon	Asclepiadaceae	Rheumatism	L	Warmed leaf applied to affected areas twice daily until cured.	Mitali T, 60, F
<i>Cassia fistula</i>	Sonalu	Mumgbum	Fabaceae	Diarrhoea	R	Extract prepared from root is taken two or three tea spoonful twice daily until cured.	Sumittra T, 50, F

cont..

Scientific name	Local name	Tribal name	Family	Illness treated	Parts used	Preparation	Informants, Age, Sex
<i>Centella asiatica</i>	Thankuni	Adagungoni, Adagoni	Apiaceae	Pain, Dysentery	WP	Extract from whole plant is taken four tea spoonfuls twice daily for two days.	Ram Das, 109, M
				Diarrhoea, Flatulence, Tuberculosis	WP	Extract of whole plant is taken two tea spoonfuls once daily until cured.	Shasindra T, 45, M
<i>Colocasia esculenta</i>	Kachu	Biskuchu	Araceae	Stomach pain, Hiccup	Pith	Little pith taken with banana to treat stomach pain and hiccup.	Shasindra T, 45, M
<i>Curcuma longa</i>	Halud	Hailaidh	Zingiberaceae	Cough, Eczema	MS	Paste prepared from turmeric is mixed with lime water and taken one spoonful twice daily for three days.	Mitali T, 60, F
<i>Cuscuta reflexa</i>	Sworna lata	Soymna lata	Convolvulaceae	Headache	S	Tie a piece of stem with thread round the head to reduce headache.	Milon Das, 88, M
				Labour pain	R	Tie a root round the neck during delivery to reduce labour pain	Milon Das, 88, M
<i>Dioscorea bulbifera</i>	Pagala alu	Vole komra	Dioscoreaceae	Abdominal pain	F	Tablet prepared from paste of fruit is taken twice daily for three days.	Ram Das, 109, M
<i>Eichhornia crassipes</i>	Kuchuri-pana	Dorear pena	Pontaderiaceae	Asthma	L	Paste of leaf is taken half cupful twice a day until cure.	Ram Das, 109, M
<i>Eucalyptus globulus</i>	Eucalyptus	Australia gas	Myrtaceae	Itches (red spot)	L	Paste prepared from the ash of leaves mixed with coconut oil and rubbed to the affected area.	Mitali T, 60, F
<i>Glycosmis pentaphylla</i>	Dadmazon	Morisha gas	Rutaceae	Abdominal pain	F	Sap of fruit is taken twice daily for two days.	Ram Das, 109, M
<i>Gynura cusimbua</i>	Moore	Ognishika	Asteraceae	Abortion	R	Extract prepared from root is taken two or three tea spoonful twice daily until abortion.	Ram Das, 109, M
<i>Gynura cusimbua</i>	Moore	Ognishika	Asteraceae	Contraceptive, abortion	R	Paste of leaf is taken one tea spoonful once daily in the afternoon.	Milon Das, 88, M
<i>Heliotropium indicum</i>	Hatisur	Hatisur	Boraginaceae	Disease of urinary tract, Impotence	L	Paste prepared from leaf is taken three or four tea spoonful twice daily for two days.	Shasindra T, 45, M
<i>Hibiscus rosa-sinensis</i>	Joba	Joba	Poaceae	Leucorrhoea	Fl	Paste prepared from flower is taken one tea spoonful twice thrice daily for seven days.	Shasindra T, 45, M
<i>Jatropha curcas</i>	Banverenda	Bainnashowa	Euphorbiaceae	High blood pressure	R	A burnt iron rod is put in root extract and a spoonful is taken instantly once daily.	Milon Das, 88, M
<i>Kalanchoe pinnata</i>	Pathorkuchi	Pataporipata	Crassulaceae	Burning	L	Oil extract from python snake mixed with the leaf extract applied to affected areas.	Milon Das, 88, M
<i>Lantana camara</i>	Camara	Shelkata	Verbenaceae	Fever	L	Sap prepared from leaf is taken once daily.	Shasindra T, 45, M
<i>Mimosa diplotricha</i>	Boro lazzabati	Sada sorminda pata	Fabaceae	Insanity	R	Paste of root mixed with Goat's milk applied to head and allow drying. In addition cow's milk has to be taken.	Milon Das, 88, M
	Sada lazzabati			Impotence	R	Uproot the whole plant without taking breath, then the root tie with thread and use like a necklace.	Ram Das, 109, M
<i>Nelumbo nucifera</i>	Rakta padma	Raktapordha, Setapordha	Nymphaeaceae	Piles	R	Tablet prepared from paste of rhizomes is taken once daily.	Ram Das, 109, M
<i>Nigella sativa</i>	Kalozero	Kailla zera	Apiaceae	Weakness, low pressure after delivery	F	Power prepared from dry fruit is taken half tea spoonful until cured.	Sumittra T, 50, F

cont..

Scientific name	Local name	Tribal name	Family	Illness treated	Parts used	Preparation	Informants, Age, Sex
<i>Ocimum sanctum</i>	Tulshi	Tulshi	Labiatae	Cough	L	Extract of leaf is taken one or two spoonful twice daily until cured.	Shasindra T, 45, M
<i>Pandanus odoratissimus</i>	Keorakata		Amaryllidaceae	Stomach pain	R	Tablet prepared from paste of root is taken once daily until cured.	Ram Das, 109, M
<i>Peperomia pellucida</i>	Luchipata	Chasherow	Piperaceae	Boils	L	Paste prepared from leaf is applied around the affected area.	Mitali T, 60, F
<i>Phoenix sylvestris</i>	Kezore	Kezore	Arecaceae	Diarrhoea	Sap	Sap of date palm mixed with small amount of salt, boiled and taken one glassful daily for (4-5 days) until cured.	Shasindra T, 45, M
<i>Phyllanthus emblica</i> , <i>Terminalia belerica</i> , <i>Terminalia chebula</i>	Amloki, Bohera, Horitoki	Trifola	Euphorbiaceae, Combretaceae	Urinary tract infection (UTI) hysteria	F	Paste prepared from these three fruits are mixed with water and taken one cupful twice daily until cured.	Shasindra T, 45, M
<i>Polialthia longifolia</i>	Debdaru	Debdaru, Rangadaru, Suksan	Annonaceae	Jaundice	R	Tablet prepared from root is taken once daily for three days.	Ram Das, 109, M
<i>Psidium guajava</i>	Payara	Bainal pata	Myrtaceae	Dysentery	L	Tablet prepared from paste of leaf is taken twice daily until cured.	Ram Das, 109, M
<i>Pterocarpus santalinus</i>	Raktachandan	Raktachondon	Fabaceae	Conjunctivitis	S	Sap of stem is taken twice daily for three days.	Ram Das, 109, M
<i>Santalum album</i>	Shetochandan	Netha	Santalaceae	Cough	S	Extract prepared from stem mixed with powder from long snail shell and salt is taken until cured.	Mitali T, 60, F
<i>Senna alata</i>	Dadmardon	Dawod	Fabaceae	Eczema	L	Leaf applied to affected areas.	Shasindra T 45, M Milon Dus, 88, R
<i>Solanum torvum</i>	Goth begun	Borshiborduk	Solanaceae	Fever, pain Weakness	R	Tablet prepared from paste of root is taken once daily for two days.	Ram Das, 109, M
		Kontakari		Diarrhoea	F	Paste prepared from fruit with honey taken one or two spoonful thrice daily until cured.	Shasindra T, 45, M
<i>Terminalia arjuna</i>	Arjun	Tama	Combretaceae	Scabies, Itching	L&B	Leaf & bark boiled in water and used to take bath for three days.	Mitali T, 60, F

[Legends for plant parts used: L-leaf, R-root, S-stem, MS-modified stem, WP-whole plant, F-flower, B-bark, Legale.]  
Legends for name and sex: T-Tripura, M - male, F - female.]

In context to the life form, number of species used by the tribes are - herbs and trees 33%, shrubs 28%, and climber 7%. The most utilized plant parts for the preparation of herbal medicine are leaf and root (31%), fruit (12%) and whole plant (6%). Stems are also used in a considerable amount. Occasionally flower, bark, bulb, pith, rhizome, latex are also used.

The study revealed that 31% root and whole plant have been used in preparation of herbal medicine and for the treatment of disease/illness. These ways of using plants are destructive because it needs to uproot the whole plant. But leaf, fruit, flower or other aerial parts can be used in a significant way to conserve them.

Of the recorded medicinal plant species 9 are used for the treatment of various types of pain, 4 for cough, 4 for fever, 4 for diarrhea, 4 for menstrual problem, 4 for gastritis, 3 for dysentery, 2 for eczema and 2 for boils (Fig. 1).

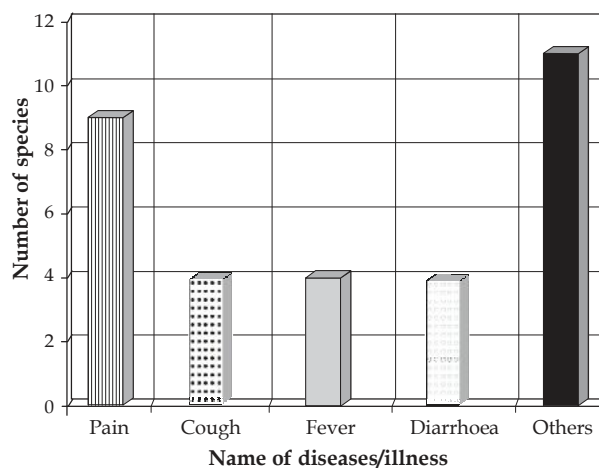


Fig.-1: Plant used for various diseases by the Tripura community.

The most frequent methods of preparation for herbal medicine are making extract, paste, tablet/pill, ash, and sap. Material prepared as extract or paste is mixed with a variety of food, spices or even petroleum products. Both external and internal methods of application of herbal medicine have been prescribed. The community was found to practice oral application of herbal medicine in most cases.

The doses and duration of application of these medicinal preparations described by the informants varied from person to person. In most cases, the Tripura community takes one to three teaspoonful of extract. A glass or cupful is taken occasionally. Time and duration also varied and frequently extracts have been taken for one to three days. In case of some complicated diseases the duration was found to be longer or taken until cured.

Medicines administered orally were those claimed to be used mainly for treating diarrhea, dysentery, headache, urinary trouble, epilepsy, etc. On the other hand, medicines recommended to be applied externally included mainly for treating skin disease (scabies, leprosy), eye disease, problems of ear, nose and throat, body swellings and eczema.

Another most frequent mode of application was direct use of plant parts by the community. In some cases green or ripe fruits are taken directly, particularly for the treatment of cough. Some preparations are recommended to be carried along or tied to the body for protection against evil forces, snakebites, arrest bleeding after delivery and for rheumatism. Leaf, bark or stem of the plants are crushed and applied around the affected area, occasionally by rubbing or making plaster in the affected areas. For toothache and cough different plant parts are used by chewing. Herbal smoking was also suggested for curing diseases of respiratory tract and throat infection.

It is also observed that the utilization of plants and plant products by the tribes does not cause any depletion to plant population and habitat. Undoubtedly, the community has clear concept of the ecological inter-dependence, seasonal variations and effective utilization of the forest products. Establishment of modern health centers is in progress in many rural areas and that may gradually change the existing pattern of indigenous knowledge system of healthcare. Now a days they are losing their previous glorious heritage of plant use knowledge in an alarming rate because of industrialization, urbanization, and rapid shrinkage and degradation of forests. The present generation is losing interest to continue their parental profession because it does not provide them proper financial support for their livelihood. Furthermore, local herbal practitioners and elderly people of the community find it very difficult to get apprentices to meet their necessities. It is very essential to document these plant use information before disappearing permanently.

Some information recorded in the present study, particularly the use of *Andrographis paniculata*, *Asparagus racemosus*, *Bacopa monniera*, *Calotropis gigantea*, *Cassia alata* have also been reported to be used by Chakma, Marma and Tanchangya communities of Chittagong Hill Tracts districts for similar diseases (Rahman *et al.* 2003, Udiin *et al.*, 2006, Roy *et al.*, 2008). Other plants namely, *Curcuma longa*, *Cuscuta reflexa*, *Psidium guajava*, *Solanum torvum*, *Lantana camara* are used by different indigenous communities of Bangladesh (Hassan and Khan 1986, Roy *et al.*, 2008). On the other hand, *Terminalia arjuna*, *Ocimum sanctum*, *Nigella sativa*, *Kalanchoe pinnata* have been reported to be used widely in Bangladesh (Yusuf *et al.*, 1994, Mia and Haque, 1988, Khan *et al.*, 2002, Udiin *et al.*, 2006). The Tripura community of Chittagong district has rich source of herbal medicine and in most cases are dependent on herbal medicines for their primary healthcare. These information can be the source of low cost health care formularies of the country and help the researchers for the discovery of new drugs.

## ACKNOWLEDGEMENTS

The authors acknowledge the cooperation of the informants and the local men and women who helped them in many different ways during the field work. Authors are grateful to Prof. Dr. M. Atiqur Rahman and Prof. Dr. M K Pasha, both of the Department of Botany, Chittagong University for their valuable suggestions and criticism during preparation of the manuscript, and for identifying some critical specimens.

## REFERENCES

- Alam, M.K. 1998. Documentation of ethno-biological information. In: R.L. Banik, M.K. Alam, S.J. Pel, A. Rastogi (eds.), *Applied Ethnobotany*. Proceedings of Subregional Training Workshop on Applied Ethnobotany. BFRI, Chittagong, Bangladesh. pp. 28-29.
- Alexiades, M.N. 1996. Protocol for conducting ethnobotanical research in the tropics. In: M.N. Alexiades, J.W. Sheldon (eds.) *Selected Guidelines for Ethnobotanical Research: A Field Manual*. The New York Botanical Garden, Bronx, New York. pp. 5-15.
- M.F. Haq and K. Nather 2000. *Medicinal Plants for the Survival of Rural People*. pp. 97-106.
- Chopra, R.N., I.C. Chhpr, K.L. Handa and L.D. Kapur, 1982. *Indigenous Drugs of India*. Academic Pub. Calcutta, India. pp 816
- Dassanayake, M.D. and F.R. Fosberg, 1980-1991. *A Revised Handbook to the Flora of Ceylon*. Vol. I-VII. Amerind Publishing Co. Pvt. Ltd. New Dehli, India. pp 2650.
- Gain, P. 2000. Life and nature at risk. In: Gain P (ed.). *The Chittagong Hill Tracts. Life and Nature at Risk*. Society for Environment and Human Development, Dhaka, Bangladesh. pp. 121.

- Ghani, A. (1998). *Medicinal plants of Bangladesh, Chemical constituents and uses*, Asiatic Press, Dhaka. pp. 1-33.
- Hasan, M.A. 1971. *Bangladesher Owshudhi Gasgasra*(in Bangla) Hasan Book House, Dhaka, Bangladesh. pp. 37.
- Hassan, M.A. and M.S. Khan 1986. Ethnobotanical records in Bangladesh. Plants use for healing fractured bones. *J. Asiatic Soc. Bangladesh (Sci)* , 12: 33-39.
- Heining, R.L. 1925. *List of Plants of Chittagong Collectorate and Hill tracts*. Darjeeling. pp.184.
- Hooker, J.D. 1872-1897. *Flora of British India*. Vol. 1-7. (London).
- Hoque, M. M., M. A. Hassan and M. S. Khan, 1988. Studies on the antibacterial activity of plants available in Bangladesh 1. *Polygonum* L. *J. Asiatic Soc. Bangladesh (Sci.)*, 12 (1&12): 72-82.
- Huq, M.A. and M.S. Khan 1984. A preliminary taxonomic report on the angiospermic flora of Moheshkhali island-1. *Dhaka Univ. Studies*, 32(2): 19-31.
- Hutchinson, S.R.H. 1909. *The Chittagong Hill Tracts*. Vivek Publishing Company, Delhi, India. pp. 103.
- Kadir, M.H. 1990. Bangladesh flora as a potential source of medicinal plants and its conservation Strategies. In: A. Ghani (ed.), *Traditional Medicine*. Institute of Life Science, Jahangirnagar University, Savar, Dhaka. pp. 73-77 .
- Khan, M.S. and A.M. Huq, 1975. *Medicinal Plants of Bangladesh*, BARC, Dhaka. p. 2.
- Kirtiker, K.R and B.D. Basu, 1993. *Indian Medicinal Plants*. 2nd ed. 1. Allahbad, India. pp 74-20.
- Lewin, T.H. 1912. *A Fly on the Wheel*. Blackwell Pub. Ltd Oxford, London. pp. 241.
- Mia, M.K. and A.M. Huq 1988. A preliminary ethnobotanical survey in the Jaintapur, Tamabil and Jaflong area, Sylhet. *Bull.*, 3:1-10. Bangladesh National Harbarium, Dhaka.
- Prain, D. 1903. *Bengal Plants*. (Vol. I & II). West Newman and Company, London.
- Rahman, M.A. 1997. Tribal Knowledge of plant use in Hill Tracts district of Bangladesh. *Biodiversity Newsletter of Bangladesh* 1: 1.
- Rahman, M.A. 1999. Ethno-medico-botanical knowledge among tribals of Bangladesh *Econ. Tax. Bot.*, 23: 89-93.
- Rahman, M.A. and C.C. Wilcock, 1993. *Flora of Bangladesh. Periplocaceae* BNH. BARC. Dhaka.
- Rahman, M.A. and M. Yusuf 1996. Diversity, ecology and ethnobotany of the Zingiberaceae of Bangladesh. *J. Econ. Tax. Bot.* 12:
- Rajput, A.B. 1965. *The Tribes of Chittagong Hill Tracts*. The Inter Services Press Ltd., Karachi (Pakistan). 13-19.
- Rahman, M.A., A. Khisa, S.B. Uddin and C.C. Wilcock 2000. *Indigenous Knowledge of Plant Use in a Hill Tract Tribal Community and its Role in Sustainable Development*. BARSIC, Dhaka. 75-78.
- Rahman, M.A., S.B. Uddin and C.C. Wilcock, 2007. Medicinal Plants used by Chakma tribe in the Hill Tracts districts of Bangladesh. *Indian J. Trad. Know.*, 6(3): 508-517.
- Rahman, M.A., S.B. Uddin and A. Khisha, 1998. A report on some anti- jaundice plants from tribal communities of Hill Tracts districts of Bangladesh. *Biodiversity Newsletter of Bangladesh* , 2: 4.
- Rahman, M.A., S.B. Uddin and C.C. Wilcock, 2003. Indigenous knowledge of herbal Medicine in Bangladesh: diarrhea, dysentery, indigestion and stomach pains. *J. Med. Arom. Plant Sci.*, 25: 1001-1009.
- Rahman, M.A., S.B. Uddin, 1998. Some anti rheumatic plants used by tribal people of Hill tracts districts of Bangladesh. *Biodiversity Newsletter of Bangladesh*, 2: 4.
- Roy S, M.Z. Uddin, M.A. Hassan and M.M. Rahman 2008. Medicobotanical report on the Chakma people of Bangladesh. *Bangladesh J. Plant Taxon.* 15 (1): 67- 72.
- Saigal, O. 1978. *Tripura, it's History and Culture*. Concept., Delhi, India. pp. 158.
- Shelly, M.R. 1992. *The Chittagong Hill Tracts of Bangladesh. The Untold Story*. Centre for Development Research, Bangladesh (CDRB), Dhaka. 124
- Sinclair, J. 1956. The Flora of Cox's Bazaar. East Pakistan *Bull. Bot. Soc. Bengal*, 9(2): 84-116.
- Sirajuddin, A.M. 1971. The Rajas of Chittagong Hill Tracts and their relation with the Mughals and the East India Company in the Eighteenth Century. *J. Pakistan Historical Soc.* ,19 (1): 1-52.
- Tanchangya, J.C. 1982. *Tanchangya Upajatir Sankhipto Parichiti* (in Bangla). Tribal Cultural Institute, Rangamati, Bangladesh. pp. 126.
- Uddin, G.M., M.M. Mirza and M.K. Pasha 1998. The medicinal uses of pteridophytes of Bangladesh. *Bangladesh J. Plant Tax.*, 5(2): 29-41.
- Uddin, S.B. 2001. *A Comparative Ethnobotanical Study among the Tribal Communities of Chittagong Hill Tracts Districts, Bangladesh*. PhD Dissertation, University of Aberdeen, UK. pp. 253
- Uddin, S.B., M.A. Rahman, M.G. Uddin and M.K. Pasha, 2008. Ethnobotanical Use of Pteridophytes from Chittagong Hill Tracts of Bangladesh. *Nepal J. Plant Sci.* , 2(1):89-93.
- Uddin, M.Z., M.A. Hassan and M. Sultana 2006. Ethnobotanical survey of medicinal plants in Phulbari Upazila of Dinazpur district, Bangladesh. *Bangladesh J. Plant Taxon.* 12 (1): 63-68.
- Uddin, S.B. 2010. *Medicinal Plants Database of Bangladesh*. www.mpbd.info.
- Yusuf M, J. Begum, M.N. Hoque and J.U. Chowdhury 2009. *Medicinal Plants of Bangladesh*. BCSIR, Chittagong. pp. 794.