



## Journal of Medicinal Plants Studies

### Ethno-medico-botanical studies on cucurbits of Rajshahi division, Bangladesh

A H M Mahbubur Rahman\*<sup>1</sup>

1. Department of Botany, University of Rajshahi, Rajshahi-6205, Bangladesh.  
[E-mail: [ahmmahbubur\\_rahman@yahoo.com](mailto:ahmmahbubur_rahman@yahoo.com); Tele: 880 721 751485, Mobile: 88 01714657224]

---

Use of medicinal plants for primary health care by the tribal people of the Rajshahi division, Bangladesh was recorded. In the present ethno-medico-botanical survey, a total of 24 species belonging to 13 genera of the family Cucurbitaceae were collected and recorded for their use in various ailments. Among the medicinal species, *Diplocyclos palmatus* (L.) Jeffrey, *Gymnopetalum cochinchinense* (Lour.) Kurj., *Melothria maderaspatana* (L.) Cogn., *Thladiantha cordifolia* (BL.) Cogn. have been reported as new medicinal species from Bangladesh. For each species botanical name, family name, local name, pick period, chromosome number, ailments to be treated, mode of treatment and part(s) used are provided.

---

**Keyword:** Ethno-medico-botany, Cucurbitaceae, Folkloric uses, Rajshahi, Bangladesh.

#### 1. Introduction

Rajshahi division is one of the seven administrative divisions of Bangladesh. It has an area of 18, 174.4 km<sup>2</sup> and a population at the 2011 census of 18, 329, 000 (preliminary figures). Rajshahi division consists of 8 districts (Bogra, Joypurhat, Naogaon, Natore, Nawabganj, Pabna, Rajshahi, Sirajganj), 70 Upazillas and 1092 Unions. This division is characterized by its cheap labour force. It has an excellent rail and road communication infrastructure. The divisional capital of Rajshahi is only four hours road journey away from Dhaka, the capital city (Singh, 2003).

Rajshahi is one of the oldest towns of Bangladesh. It was promoted to a district headquarter in 1772, a municipality in 1876, a city corporation in 1987 and a metropolitan city in 1992. The city has grown from a small population of 40,000 in 1951 to about 339,932 in 2001. Although

Rajshahi was a Divisional headquarter during British period, partition of India in 1947, resulting continuous migration from the Indian side led to sudden population boom in the city. This is the fourth largest city in Bangladesh after Dhaka, Chittagong and Khulna. The city is famous for its high number of educational institutions and situated on the Bank of river Padma. The city is located between 24°21' north latitudes and between 88°28' and 88°38' east longitudes.

The city has a sub-tropical monsoon climate, typical of Bangladesh, which falls within a low rainfall zone of the country. 75 percent rainfall occurs during June-September. The annual rainfall is 1350mm. Temperature of the area is low in January varies from 9.0°C to 14.1°C. From February an increasing trend of temperature is found up to April and thereafter temperature start to decline. In

April temperature varies from 22.6°C to 36.9°C. The mean relative humidity is found to be low in March (65%) and high in July-September (88-89%) (BBS, 2009).

Ethnobotany, in its totality, is virtually an old field with new dimension of research. Bangladesh is very rich in ethno-cultural heritage and traditional use of plant materials that may be of special interest in ethno-botanical information. About 80 percent people of the country live in the villages and a considerable proportion is tribal's living in remote forest areas (Rahman *et al.* 2012).

Even today in most of the rural areas people are depending on herbal drug systems for primary healthcare (Prasanth and Kumar, 2008). So far no systematic ethno-medico-botanical survey has been made in this area. Once, they relied on natural plants and plant products of Rajshahi division for the primary healthcare other than modern medicine (Rahman *et al.*, 2013). Currently, traditional knowledge of primary healthcare system of tribal communities is under great threat because of a number of factors including deforestation, habitat degradation, biodiversity loss and modern civilization (Uddin *et al.*, 2012). For the sake of conservation of tribal knowledge on medicinal cucurbits, ethno-medico-botanical study at Rajshahi division was essential.

Studies on ethno-medico-botanical information of ethnic communities in Bangladesh are at initial stage. Several ethno-medicinal studies in Bangladesh have been carried out by Alam (1992); Hassan and Khan (1996); Anisuzzaman *et al.* (2007); Rahman *et al.* (2008, 2010, 2012); Rahman (2013, 2013); Uddin *et al.* (2001, 2004, 2006, 2008, 2012); Khan (1998) and Yusuf *et al.* (2006, 2007). But none of them was devoted to ethno-medico-botany on cucurbits of Rajshahi division. The aim of the present study was to record medicinal

knowledge of cucurbits used by the tribal communities living of Rajshahi division, Bangladesh.

## 2. Materials and Methods

In the present ethno-medico-botanical survey, a total of 24 species belonging to 13 genera of the family Cucurbitaceae were collected and identified. A total of 140 people having an age range 15-75 years were interviewed using semi-structured interviewed method (Alexiades 1996; Martin, 1995). Professionally they were peasant, day labor, farmer, betel leaf cultivators, house wives, medicine men, small shop keepers etc. Among them 60 were female and rest 80 were male. Regular field studies were made in the study area. The information about the plants used for various diseases was gathered through interviews and discussion with the elderly people, Kabiraj, medicine men and traditional medical practitioners were also consulted. Triangulation methods have been followed for data validation in the field (Dean and Whyte, 1959). Plant specimens with flowers and fruits were collected and processed using standard herbarium techniques (Hyland, 1972; Alexiades, 1996). Herbal plants referred by these people were authentically identified with the help of Hooker (1961), Prain (1963), Khan and Huq (1975), Kirtikar and Basu (1987), Rahman *et al.* (2013) and Ahmed *et al.* (2008). The voucher specimens are stored at Rajshahi University Herbarium (RUH) for future reference.

## 3. Results

By applying survey, interview, collection and identification methods, different ethno-medico-botanical information were accumulated. The well analyzed and checked listed information about the plant materials collected from the study area are described below.

**1. Botanical Name:** *Benincasa hispida* (Thunb.) Cogn.

**Family Name:** Cucurbitaceae

**Local Name:** Chal kumra, sada kumra, chuna kumra

**Pick Period:** March to October

**Chromosome Number:** 2n=24 (Simmonds, 1976)

**Part(s) Used:** Fruits, Seeds

**Ailments and Treatment Process:** Curry made from fruit is used in tonic, nutritive, diuretic, antiperiodic, constipation, heart disease, tuberculosis, colic pain and aphrodisiac. Fried seeds are used in tapeworm, lumbrici and diuretic.

**2. Botanical Name:** *Citrullus lanatus* (Thunb.) Mart & Nakai.

**Family Name:** Cucurbitaceae

**Local Name:** Turmuz

**Pick Period:** January to May

**Chromosome Number:** 2n=22 (Simmonds, 1976)

**Part(s) Used:** Fruit, seeds

**Ailments and Treatment Process:** Ripe fruits are directly used as cooling, strengthening, diuretic, stomachic, purifies the blood, aphrodisiac, astringent, biliousness, sore eyes, scabies and itching. The juice of the fruit as an antiseptic in typhus fever and purgative. The seeds are tonic to the brain.

**3. Botanical Name:** *Coccinia grandis* (L.) Voigt.

**Family Name:** Cucurbitaceae

**Local Name:** Telackucha

**Pick Period:** March to December

**Chromosome Number:** 2n=24 (Darlington and Wylie, 1950)

**Part(s) Used:** Whole plant, fruit, leaves, roots, stem

**Ailments and Treatment Process:** Curry made from young fruits is used in diabetes, aphrodisiac, biliousness and disease of the blood. Juice of whole plant is used in diabetes, anorexia, asthma, fever, dropsy, catarrh, epilepsy and gonorrhoea. The whole plant has the reputation effect in reducing the amount of sugar in the urine of patients suffering from diabetes mellitus. Fresh juice of leaves, stem and root produces no reduction sugar in the blood or urine of patients suffering from glycosuria. The fruit and leaves are prescribed in the treatment of snake-bite.

**4. Botanical Name:** *Cucumis sativus* L.

**Family Name:** Cucurbitaceae

**Local Name:** Sasha, Khira

**Pick Period:** January to December

**Chromosome Number:** 2n=14 (Simmonds, 1976)

**Part(s) Used:** Leaves, fruits, seeds

**Ailments and Treatment Process:** Fruit is directly used in demulcent. Fried seeds are used in cooling,

tonic, diuretic and anthelmintic. Leaves along with cumin seeds administered in throat affections.

**5. Botanical Name:** *Cucumis melo* L.

**Family Name:** Cucurbitaceae

**Local Name:** Phuti, Bangi, Kurubuz

**Pick Period:** January to May

**Chromosome Number:** 2n=24 (Simmonds, 1976)

**Part(s) Used:** Fruits, seeds

**Ailments and Treatment Process:** The ripe fruit is used in kidney diseases, cooling, flattening, tonic, laxative, aphrodisiac, biliousness and diuretic and acute eczema. The seeds are diuretic, cooling, nutritive, and beneficial to the enlargement of prostate gland.

**6. Botanical Name:** *Cucumis callosus* L.

**Family Name:** Cucurbitaceae

**Local Name:** Bangumak

**Pick Period:** June to October

**Chromosome Number:** 2n=24 (Simmonds, 1976)

**Part(s) Used:** Fruits, seeds

**Ailments and Treatment Process:** The fruit is used to prevent insanity to strengthen memory and remove vertigo. The seeds are cooling and astringent and useful in bilious disorder.

**7. Botanical Name:** *Cucurbita maxima* Duch.

**Family Name:** Cucurbitaceae

**Local Name:** Bitati, mistikumra

**Pick Period:** January to December

**Chromosome Number:** 2n=40 (Simmonds, 1976)

**Part(s) Used:** Fruit, seeds

**Ailments and Treatment Process:** The fruit is used in diuretic, tonic, inflammations and boils. Fried seeds are used in anthelmintic, diuretic and tonic.

**8. Botanical Name:** *Cucurbita pepo* L.

**Family Name:** Cucurbitaceae

**Local Name:** Mistikadu, Bilati

**Pick Period:** November to June

**Chromosome Number:** 2n=40 (Simmonds, 1976)

**Part(s) Used:** Fruits, leaves, seeds

**Ailments and Treatment Process:** The fruit is cooling, astringent to the bowels, laxative, good for teeth, throat, eyes. Paste of leaves are used in biliousness and burning sensation. The seeds are diuretic, tonic, bronchitis, fever, good for the kidney and the brains.

**9. Botanical Name:** *Cucurbita moschata* (Duch. ex Lam.) Duch.

**Family Name:** Cucurbitaceae

**Local Name:** Mistikadu, Bilati

**Pick Period:** November to June

**Chromosome Number:** 2n=40 (Simmonds, 1976)

**Part(s) Used:** Leaves, fruits, seeds

**Ailments and Treatment Process:** Paste of leaves is used in biliousness and burning sensation. The fruit is used in cooling, astringent to the bowels, laxative, good for teeth, throat, eyes. The seeds are diuretic, tonic, bronchitis, fever, good for the kidney and the brains.

**10. Botanical Name:** *Diplocyclos palmatus* (L.) Jeffrey

**Family Name:** Cucurbitaceae

**Local Name:** Mala

**Pick Period:** November to April

**Chromosome Number:** 2n=24 (Darlington and Wylie, 1950)

**Part(s) Used:** Whole plant

**Ailments and Treatment Process:** The whole plant juice is used in bitter and tonic.

**11. Botanical Name:** *Gymnopetalum cochinchinense* (Lour.) Kurj.

**Family Name:** Cucurbitaceae

**Local Name:** Kaubuti

**Pick Period:** November to April

**Chromosome Number:** 2n=22 (Darlington and Wylie, 1950)

**Part(s) Used:** Leaves, fruit, root, Whole plant

**Ailments and Treatment Process:** Juice of leaves is given in ophthalmia. The fruit is said to be poisonous. The decoction of the root is taken as an antidote to poisoning by ripe fruits and against tetanus after a miscarriage. The whole plant is given to women in labour as composition of special drug. Juice of root is used in body ache and atrophy of limb.

**12. Botanical Name:** *Lagenaria siceraria* (Molina) Standl.

**Family Name:** Cucurbitaceae

**Local Name:** Panilau, Lau, Panikadu

**Pick Period:** January to December

**Chromosome Number:** 2n=22 (Simmonds, 1976)

**Part(s) Used:** Leaves, fruits, roots, stem, seeds

**Ailments and Treatment Process:** White pulp of fruit is cooling, emetic, purgative, diuretic and antibilious. Oil from the seeds is cooling and used to relieve headache. Seeds are nutritive and diuretic. Decoction of leaves mixed with sugar given in jaundice. Warm of tender stem relieves earache. Curry made from fruit is used in cholera.

**13. Botanical Name:** *Luffa acutangula* (L.) Roxb.

**Family Name:** Cucurbitaceae

**Local Name:** Toroy, Jhinga

**Pick Period:** June to October

**Chromosome Number:** 2n=26 (Symmonds, 1976)

**Part(s) Used:** Leaves, fruits, seeds

**Ailments and Treatment Process:** The pounded leaves are applied locally to splenetic, hemorrhoids and leprosy. The juice of fresh leaves is dropped into the eyes of children in glandular conjunctivitis, also to prevent the lids adhering at night from excessive meibomian secretion. Fruit is demulcent, diuretic and nutritive.

**14. Botanical Name:** *Luffa cylindrica* (L.) Roem.

**Family Name:** Cucurbitaceae

**Local Name:** Dhundol

**Pick Period:** June to November

**Chromosome Number:** 2n=26 (Symmonds, 1976)

**Part(s) Used:** Fruits, seeds

**Ailments and Treatment Process:** Young fruits are used in cooling, costive, demulcent, appetite and excitive of mind, bile and phlegm. The seeds are emetic and cathartic.

**15. Botanical Name:** *Melothria maderaspatana* (L.) Cogn.

**Family Name:** Cucurbitaceae

**Local Name:** Agmuki

**Pick Period:** November to April

**Chromosome Number:** 2n=22 (Darlington and Wylie, 1950)

**Part(s) Used:** Roots

**Ailments and Treatment Process:** The juice of the root is considered a remedy for spermatorrhoea, also used in stimulant, invigorating, purgative and gonorrhoea.

**16. Botanical Name:** *Momordica cochinchinensis* (Lour.) Spreng

**Family Name:** Cucurbitaceae

**Local Name:** Kakrol

**Pick Period:** March to September

**Chromosome Number:** 2n=22 (Symmonds, 1976)

**Part(s) Used:** Leaves, fruits, seeds

**Ailments and Treatment Process:** Both paste of leaves and fruits are used in external application for lumbago, ulceration and fracture of bones. The seeds of plant are used as aperients and in the treatment of ulcers, sores and obstructions of liver and spleen. The roots are given in rheumatism with swelling of the lower limbs.

**17. Botanical Name:** *Momordica carantia* L.

**Family Name:** Cucurbitaceae

**Local Name:** Karala

**Pick Period:** January to December

**Chromosome Number:** 2n=22 (Symmonds, 1976)

**Part(s) Used:** Fruit, root, leaves, seeds, whole plant

**Ailments and Treatment Process:** The fruit are considered tonic, stomachic, febrifuge, carminative and cooling, they are used in rheumatism, gout and disease of liver and spleen. The seeds are used in anthelmintic. An alcoholic extract of the whole plant is used in stomachic against colic and fever. Juice of whole plant is used in diabetes. The fruits, leaves and roots have long been as a folk remedy for diabetes mellitus. The fruits and leaves are anthelmintic, useful in piles, leprosy, jaundice and as vermifuge.

**18. Botanical Name:** *Momordica dioica* Roxb.

**Family Name:** Cucurbitaceae

**Local Name:** Gheekorolla

**Pick Period:** June to October

**Chromosome Number:** 2n=22 (Symmonds, 1976)

**Part(s) Used:** Root

**Ailments and Treatment Process:** The roots are toasted and used to stop bleeding from piles, used in urinary complaints, ground to paste smeared over body as a sedative in high fever with delirium.

**19. Botanical Name:** *Thladiantha cordifolia* (BL.) Cogn.

**Family Name:** Cucurbitaceae

**Local Name:** Dabilata

**Pick Period:** May to October

**Chromosome Number:** 2n=18 (Darlington and Wylie, 1950)

**Part(s) used:** Root, seeds

**Ailments and Treatment Process:** The seed is cardiac tonic and an astringent. The root is alterative, cholagogue, diuretic and galactagogue.

**20. Botanical Name:** *Trichosanthes cordata* Roxb.

**Family Name:** Cucurbitaceae

**Local Name:** Bhuikakra

**Pick Period:** May to October

**Chromosome Number:** 2n=22 (Symmonds 1976)

**Part(s) Used:** Root

**Ailments and Treatment Process:** The roots are used as a tonic. The root dried and reduced to powder is given in enlargements of the spleen, liver and abdominal viscera. The fresh root mixed with oil, forms a common application for leprosy ulcers.

**21. Botanical Name:** *Trichosanthes dioica* Roxb.

**Family Name:** Cucurbitaceae

**Local Name:** Poto

**Pick Period:** November to April

**Chromosome Number:** 2n=22 (Symmonds 1976)

**Part(s) Used:** Fruits, leaves

**Ailments and Treatment Process:** Fresh juice of unripe fruit is used as cooling and laxative. The fruit is also used in spermatorrhoea. Leaves is aperients,

also used to be tonic and febrifuge; used as diet in subacute cases of enlarge liver and spleen. Fruit is febrifuge, laxative, antibilious.

**22. Botanical Name:** *Trichosanthes anguina* L.

**Family Name:** Cucurbitaceae

**Local Name:** Chichinga

**Pick Period:** November to April

**Chromosome Number:** 2n=22 (Symmonds 1976)

**Part(s) Used:** Fruit, root, seed

**Ailments and Treatment Process:** The fruit is used as a laxative and tonic. The root and seeds are anthelmintic and anti-diarrhoeal, used for biliousness and in syphilis.

**23. Botanical Name:** *Trichosanthes bracteata* (Lamk.) Voigt.

**Family Name:** Cucurbitaceae

**Local Name:** Makal, Makalpal

**Pick Period:** July to December

**Chromosome Number:** 2n=22 (Symmonds, 1976)

**Part(s) Used:** Fruit, seed, root

**Ailments and Treatment Process:** The fruit is used as a cure for asthma, also used in earache, carminative, bitter, purgative, abortifacient, lessens inflammations. The seeds are emetic and purgative. The fruit punded and well mixed with warm coconut oil, forms a valuable application to sores under the ears and nostrils. The juice of the fruit or the root-bark, boiled with gingelly oil, is used with good effect as a bath oil, for the relief of long-standing or recurrent attacks of headache.

**24. Botanical Name:** *Trichosanthes cucumerina* L.

**Family Name:** Cucurbitaceae

**Local Name:** Banchichinga

**Pick Period:** June to November

**Chromosome Number:** 2n=22 (Symmonds, 1976)

**Part(s) Used:** Root, seed, fruit, leaves

**Ailments and Treatment Process:** Root is used as a cure for bronchitis, headache and boils. The seeds are cooling and haemagglutinating. The juice of the leaves and fruits is useful in congesting of the liver and bilious headache. Fruits when ripe is purgative, believed to improve appetite, emetic, anthelmintic and cure biliousness. Roots and seeds for expulsion of worms and for the treatment to diarrhea and syphilis.

#### 4. Discussion

In the present ethno-medico-botanical survey, a total of 24 plant species under 13 genera of the family Cucurbitaceae were collected and recorded for their use in

various ailments. For each species local name, scientific name, ailments to be treated, mode of treatment and part(s) used are provided. From the available information it is revealed that this ethnic community used plant species, which are not generally used by other population. Data have been gathered on the traditional uses of plant species, especially for abscess, anthelmintic, astringent, burning sensation, constipation, conjunctivitis, diarrhoea, diabetes, eczema, earache, fever, fracture, gonorrhoea, headache, heart disease, itches, jaundice, kidney disease, leprosy, piles, scabies, snake-bite, spermatorrhoea, syphilis, throat affection, ulcers, vertigo, worm and others.

The survey has also recorded 87 categories of uses of 24 medicinal plants. This is the indication of rich knowledge of medicinal uses of plants by the tribal people in the study area. Use of species in different ailments showed also variations. *Momordica carantia* L. has been used for treatment of 19 ailments; *Trichosanthes cucumerina* L. and *Coccinia grandis* (L.) Voigt. has been used for treatment of 15 ailments in each. *Citrullus lanatus* (Thunb.) Mart & Nakai., *Cucurbita pepo* L. and *Cucurbita moschata* (Duch. ex Lam.) Duch. has been used for treatment of 14 ailments in each. *Cucumis melo* L. has been used for treatment of 13 ailments. *Benincasa hispida* (Thunb.) Cogn. and *Trichosanthes bracteata* (Lamk.) Voigt. has been used for treatment of 12 ailments in each. *Lagenaria siceraria* (Molina) Standl., *Momordica cochinchinensis* (Lour.) Spreng. and *Trichosanthes dioica* Roxb. has been used for treatment of 11 ailments in each. For treating two to nine ailments 12 species were used. Among the medicinal use of plants, the survey reported a good number of new uses those were not mentioned in the previous literatures (Yusuf et al., 2009; Ghani, 1998).

The present findings are probably the first record of ethno-medico-botanical

knowledge for Rajshahi division using standard research protocols. The present study may be a preliminary contribution to the ethno-medico-botany 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. The study also suggested that the present information on medicinal use of plants by tribal people may be used for botanical and pharmacological research in future for the discovery of new sources of drugs (Rahman *et. al.*, 2013).

### 5. Conclusion

Most of the tribal people in the study area are poor and illiterate. In one hand, these Santhals are out of the reach of modern medicines and on other hand, the market price of most available medicines are very expensive. As a result, these medicinal plants are used by them to cure all of the diseases. The wide use of local flora by the tribal people suggests that cultivation and conservation of indigenous useful plants should be encouraged. There is a need of intensive work in this direction which may help tribal development.

### 6. Acknowledgements

The author is grateful to the Ministry of Science, Information and Communication Technology, Government People's Republic of Bangladesh for financial support to complete this research work. Thanks are also due to the tribal people of Rajshahi division for their co-operation and help during the Ethno-medico-botanical studies.

### 7. References

1. Ahmed Z U, Begum Z N T, Hassan M A, Khondker M, Kabir S M H, Ahmad M, Ahmed A T A, Rahman A K A, Haque E U(Eds). Encyclopedia of Flora and Fauna of Bangladesh. Angiosperms;

- Dicotyledons. Asiat. Soc. Bangladesh, Dhaka, 2008.
2. Alam M K. Medical ethno-botany of the Marma tribe of Bangladesh. *Economic Botany*, 1992; 46(3): 330-335.
  3. Alexiades M N (Ed). *Selected Guidelines for Ethno Botanical Research: A Field Manual*. The New York Botanical Garden, New York, 1996.
  4. Anisuzzamam M, Rahman A H M M, Harun-Or-Rashid M, Zaman A T M N, Islam A K M R. An Ethnobotanical Study of Madhupur, Tangail. *Jour. App. Sci. Res.* 2007; 3(7): 519-530.
  5. BBS (Bangladesh Bureau of Statistics). *Statistical Year Book of Bangladesh*, 23rd edition, Bangladesh Bureau of Statistics, Planning Division, Ministry of Planning Government of Peoples Republic of Bangladesh, Dhaka, 2009.
  6. Darlington CD, Wylie AP. *Chromosome Atlas of Flowering Plants*. George Allen and Unwin Ltd. Ruskin House Museum Street, London, U.K., 1950, 98-100.
  7. Dean J P, Whyte W F. How do you know if the informant is telling truth? *Human Organization*, 1959; 17: 34-38.
  8. Ghani A. *Medicinal Plants of Bangladesh*. Asiatic Society of Bangladesh, Dhaka, 1998.
  9. Hooker J D. *Flora of British India*, Vol. 2, Reeve and Co. Ltd., London., 1961, 604-635.
  10. Hyland B P M. A technique for collecting botanical specimens in rain forest. *Flora Malesiana Bulletin*, 1972; 26: 2038-2040.
  11. Kirtikar K R, Basu B D. *Indian Medicinal Plants*, Vol. 2. Lalit Mohan Basu, M.B. 49, Leader Road, Allahbad, India., 1987, 1104-1169.
  12. Khan M S, Huq A M. *Medicinal Plants of Bangladesh*, BARC, Dhaka, Bangladesh, 1975.
  13. Khan M S (1998). *Prospects of Ethnobotany and Ethnobotanical Research in Bangladesh*. In: Banik RL, Alam MK, Pei SJ, Rastogi A (eds.), *Applied Ethnobotany*, BFRI, Chittagong, Bangladesh, 1998, 24-27.
  14. Hassan MA, Khan MS. Ethnobotanical record of Bangladesh-2. Plant used for healing cuts and wounds. *Bangladesh J. Plant Taxon.* 1996; 3(2): 49-52.
  15. Martin G J. *Ethnobotany: A methods Manual*, Chapman & Hall. London, 1995.
  16. Prain D. *Bengal Plants*, Vol. 1, *Botanical Survey of India*, Calcutta. 1963, 374-385.
  17. Prasanth G P R, Kumar D A. Ethno-medico Botany of medicinal plants for the treatment of diabetic activity in Krishna District, Andhra Pradesh, *Int. Jour. of Pharm. Res. and Develop.* 2008; 8: 1-9.
  18. Rahman A H M M, Anisuzzaman M, Haider S A, Ahmed F, Islam A K M R, Naderuzzaman A T M. Study of Medicinal Plants in the Graveyards of Rajshahi City. *Res. Jour. Agri. Bio. Sci.* 2008; 4(1): 70-74.
  19. Rahman A H M M, Kabir E Z M F, Sima S N, Sultana R S, Nasiruddin M, Zaman A T M N. Study of an Ethnobotany at the Village Dohanagar, Naogaon. *Jour. App. Sci. Res.* 2010; 6(9): 1466-1473.
  20. Rahman A H M M, Gulsan J E, Alam M S, Ahmad S, Naderuzzaman A T M, Islam A K M R. An Ethnobotanical Portrait of a Village: Koikuri, Dinajpur with Reference to Medicinal Plants. *Int. Jour. Biosci.* 2012; 2(7): 1-10.
  21. Rahman, A H M M, Islam AKMR, Hossain M M. *Taxonomy of Cucurbitaceae: Taxonomic investigation of wild & cultivated cucurbits of Northern Parts of Bangladesh*. LAP Lambert publishing, Germany, 2013, 1-176.
  22. Rahman A H M M. *Medio-Botanical study of the plants found in the Rajshahi District of Bangladesh*. *Prudence J. Med. Plants. Res.* 2013; 1(1): 1-8.
  23. Rahman A H M M. An ethnobotanical investigation on Asteraceae family at Rajshahi, Bangladesh. *J. Bus. AdmIn. Man. Sci. Res.* 2013; 2(4): 92-100.
  24. Sing N K. *Encyclopedia of Bangladesh*. Anmol Publications Pvt. Limited, Dhaka-1000, Bangladesh, 2003.
  25. Simmonds N W. *Evolution of Crop Plants*. Longman Group Ltd. London. 1976.
  26. Uddin M Z, Khan M S, Hassan, M A. Ethno medical plants records of Kalenga forest range (Habiganj), Bangladesh for malaria, jaundice, diarrhea and dysentery. *Bangladesh J. Plant Taxon.* 2001; 8(1): 101-104.
  27. Uddin S N, Uddin M Z, Hassan M A, Rahman M M. Preliminary ethno-medical plant survey in Khagrachari

- district, Bangladesh. Bangladesh J. Plant Taxon. 2004; 11(2): 39-48.
28. Uddin M Z, Hassan M A, Sultana M. Ethnobotanical survey of medicinal plants in Phulbari Upazilla of Dinajpur District, Bangladesh. Bangladesh J. Plant Taxon. 2006; 12(1): 63-68.
  29. Uddin M, Roy S, Hassan M A, Rahman M M. Medicobotanical report on the Chakma people of Bangladesh. Bangladesh J. Plant Taxon. 2008; 15(1): 67-72.
  30. Uddin M Z, Hassan M A, Rahman M, Arefin K. Ethno-medico-botanical study in Lawachara National Park, Bangladesh. Bangladesh J. Bot. 2012; 41(1): 97-104.
  31. Yusuf M, Wahab MA, Choudhury JU. Ethno-medico-botanical knowledge from Kaulkhali proper and Betunia of Rangamati district. Bangladesh J. Plant Taxon. 2006; 13(1): 55-61.
  32. Yusuf M, Wahab MA, Choudhury JU, Begum J. Some tribal medicinal plants of Chittagong Hill Tracts. Ethno-medico-botanical knowledge from Kaulkhali proper and Betunia of Rangamati district. Bangladesh J. Plant Taxon. 2007; 14(2): 117-128.
  33. Yusuf M, Begum J, Hoque M N, Choudhury J U. Medicinal plants of Bangladesh- Revised and Enlarged. Bangladesh Coun. Sci. Ind. Res. Lab. Chittagong, Bangladesh, 2009.