

Ethno-Gynecological Study of Traditional Medicinal Plants Used by Santals of Joypurhat District, Bangladesh

A.H.M. Mahbubur Rahman *

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

*Corresponding author: ahmmahbubur_rahman@yahoo.com

Received November 26, 2013; Revised January 14, 2014; Accepted January 20, 2014

Abstract Ethno-gynecology means the medical practices for the treatment of Santals for their healthcare needs. The present paper documented 35 medicinal plants of Joypurhat district, Bangladesh belonging to 33 genera and 27 families were used by the local health healers for the treatment of gynecological diseases. Of these, Magnoliopsida (Dicots) is represented by 30 species under 28 genera and 22 families while Liliopsida (Monocots) is represented by 5 species under 5 genera and 5 families. Habit analysis shows that herbs, shrubs, climbers and trees are represented by 13, 4, 4 and 14 species, respectively. The medicinal plants used by the traditional users of Joypurhat district are arranged alphabetically followed by botanical name, local name, family, parts used and medicinal uses.

Keywords: *ethno-gynecology, medicinal plants, traditional uses, Santals, Joypurhat, Bangladesh*

Cite This Article: A.H.M. Mahbubur Rahman, "Ethno-Gynecological Study of Traditional Medicinal Plants Used by Santals of Joypurhat District, Bangladesh." *Biomedicine and Biotechnology* 2, no. 1 (2014): 10-13. doi: 10.12691/bb-2-1-2.

1. Introduction

Gynaecology or gynecology is the medical practice dealing with the health of the female reproductive system (uterus, vagina and ovaries). Ethno-gynecology is emerging as a new branch which deals with the treatment of ailments among tribal women, for example, abortion, menstrual trouble, menopause syndrome, morning sickness, leucorrhoea, anti-fertility, delivery problems etc. [7]. Santals women of Joypurhat, Bangladesh depend on the plants for curing various diseases including abortion, anti-fertility, leucorrhoea and menstrual trouble. They do not go to doctor but depend on herbal treatment, suggested by old women or experienced men of the Village [8,11,15].

Over the past two decades several medicinal and ethno-botanical studies in Bangladesh have been carried out [2,3,10,13-23]. The aim of the present study was to first record gynecological knowledge of medicinal plants used by the Santals living in Joypurhat district of Bangladesh.

2. Materials and Methods

In the present survey, a total of 35 plant species belonging to 33 genera and 27 families were recorded. A total of ten field trips were made for documentation. During the field interview, the information was noted in the documentation data sheet. All the information regarding plant species, biological forms, habitat, local names and uses was documented. Medicinal information was obtained through informal interviews following semi-structured from knowledgeable person's particularly local

Kabiraj/Herbalists and elderly people. Plant specimens were collected with flowers and fruits and processed using standard herbarium techniques [4]. The specimens were identified consulting with the experts, by comparing herbarium specimens and available literatures [1,6,8,9,12]. The voucher specimens are stored at Rajshahi University Herbarium (RUH) for future reference.

3. Results and Discussion

In the present survey, a total of 35 plant species belonging to 33 genera and 27 families were recorded (Table 1). Out of these plants species, 13 belonged to herbs, 14 trees, 4 shrubs, and 4 climbers (Table 2). For each species scientific name, local name, family, habit, mode of uses and part(s) used are provided. The most frequently used species for the treatment of gynecological diseases are *Abroma augusta*, *Abrus precatorius*, *Achyranthes aspera*, *Aloe vera*, *Allium cepa*, *Ananas comosus*, *Artocarpus heterophyllus*, *Bombax ceiba*, *Cissus quadrangularis*, *Daucus carota*, *Erythrina variegata*, *Ficus religiosa*, *Justicia adhatoda*, *Phyllanthus emblica*, *Ricinus communis*, *Scoparia dulcis*, *Terminalia chebula*, *Terminalia arjuna*, and *Zizyphus mauritiana*.

Use of plant parts as medicine shows variation (Table 3). Roots (34.28%) are the leading part used in a majority of medicinal plants followed by 20.00% seed, 14.28% bark, 14.28% fruit, 11.42% whole plant, 2.85% stem, 2.85% bulb, 2.85% flower and 2.85% latex. Distribution of medicinal plant species in the families shows variation (Table 4). Each of Amaranthaceae, Euphorbiaceae, Fabaceae is represented by 3 species. A single species in each was recorded by 22 families while two species in

each was recorded by 2 families. The survey indicated that the common medicinal plant families in the study area are Acanthaceae, Amaranthaceae, Apiaceae, Bombacaceae, Bromeliaceae, Caricaceae, Combretaceae, Cucurbitaceae,

Euphorbiaceae, Fabaceae, Lamiaceae, Liliaceae, Moraceae, Solanaceae and Vitaceae. This finding of common medicinal plant families in the study is in agreement with [5,24].

Table 1. List of plants and their diversity in use of gynecology by the Santals of Joypurhat, Bangladesh

S/N	Scientific name	Local name	Family	Habit	Parts used	Mode of use
1	<i>Abroma augusta</i> L.	Ulotkombol	Sterculiaceae	Shrub	Root	Juice of root bark is used as regulates the menstrual flow.
2	<i>Abrus precatorius</i> L.	Kuch	Fabaceae	Climber	Seed	Paste of seeds is applied into vagina for relieves delivery pain.
3	<i>Achyranthes aspera</i> L.	Apang	Amaranthaceae	Herb	Root	Juice of roots is used in abortion.
4	<i>Allium cepa</i> L.	Piaj	Liliaceae	Herb	Bulb	Juice of the bulb is used as menstrual problems.
5	<i>Aloe vera</i> (L.) Burm.f.	Ghritakumari	Aloeaceae	Climber	Leaf	Juice made from leaves is used in menstrual disease.
6	<i>Amaranthus lividus</i> L.	Noteysak	Amaranthaceae	Herb	Root	Roots act as reduce menstrual flow and useful in leucorrhoea.
7	<i>Amaranthus spinosus</i> L.	Kantanotey	Amaranthaceae	Herb	Whole plant, root	Paste made from whole plant used as leucorrhoea. Juice of roots are reduces menstrual flow.
8	<i>Annona squamosa</i> L.	Ataphal	Annonaceae	Tree	Seed	Paste made from seeds is applied into vagina for abortion.
9	<i>Ananas comosus</i> (L.) Merr.	Anaros	Bromeliaceae	Herb	Fruit	Juice of unripe fruit is internally used in abortion.
10	<i>Aphanamixis polystachya</i> (Wall.) R. Parker	Pitraj	Meliaceae	Tree	Bark	Extract of bark is used as leucorrhoea and to increases sex in women.
11	<i>Artocarpus heterophyllus</i> Lamk.	Kathal	Moraceae	Tree	Bark	Juice made from bark is used in excessive menstrual discharge.
12	<i>Bombax ceiba</i> L.	Shimul	Bombacaceae	Tree	Bark, root	Young root is eaten raw increases women sex and anti-fertility. Juice made from barks is used in excessive menstrual discharge.
13	<i>Boerhaavia repens</i> L.	Punarnava	Nyctaginaceae	Herb	Whole plant	Whole plant extract is useful in women leucorrhoea.
14	<i>Carica papaya</i> L.	Pepe	Caricaceae	Shrub	Fruit	Juice of unripe and ripe fruit is used as abortion.
15	<i>Cissus quadrangularis</i> L.	Harjora	Vitaceae	Climber	Stem	Paste of stem is given in irregular menstruation.
16	<i>Cocos nucifera</i> L.	Narikel	Arecaceae	Tree	Root	Juice of roots is used in menstrual disease.
17	<i>Cynodon dactylon</i> (L.) Pers.	Durba	Poaceae	Herb	Whole plant	Paste made from whole plant used as leucorrhoea.
18	<i>Daucus carota</i> L.	Gajor	Apiaceae	Herb	Seed	Paste of seeds is applied to vagina for abortion and to increase menses. Seeds given internally to pregnant women for abortion.
19	<i>Erythrina variegata</i> L.	Madar	Fabaceae	Tree	Root	Juice made from roots are used the flow of menstrual period when this is absent.
20	<i>Euphorbia hirta</i> L.	Dudhyia	Euphorbiaceae	Herb	Latex	Latex is used by women to increase the flow of breast milk.
21	<i>Ficus religiosa</i> L.	Pakur	Moraceae	Tree	Root	Juice of root bark is used as leucorrhoea.
22	<i>Hibiscus rosa-sinensis</i> L.	Joba	Malvaceae	Shrub	Flower	The flowers are fried mixed with ghee used as check excessive menstruation.
23	<i>Justicia adhatoda</i> L.	Basak	Acanthaceae	Shrub	Root	Paste of roots is used as leucorrhoea.
24	<i>Lagenaria siceraria</i> (Molina) Standly	Lau	Cucurbitaceae	Climber	Fruit	Fresh fruit is taken with cow's milk twice daily to cure leucorrhoea.
25	<i>Mentha arvensis</i> L.	Pudina	Lamiaceae	Herb	Whole plant	Powder made from whole plant mixed with water is used before the meeting for anti-fertility.
26	<i>Phyllanthus emblica</i> L.	Amloki	Euphorbiaceae	Tree	Seed, fruit	Paste made from seeds is used as leucorrhoea. Dry fruit is made into powder mixed with honey used as leucorrhoea.
27	<i>Raphanus sativus</i> L.	Mula	Brassicaceae	Herb	Seed	Seeds are given orally to increase menses to purify womb and for abortion.
28	<i>Ricinus communis</i> L.	Verenda	Euphorbiaceae	Tree	Seed	After removing seed coats seeds are given for anti-fertility. Endosperm of seed is taken before and after seven days of menstruation as contraceptive.
29	<i>Saraca asoka</i> (Roxb.) Willd.	Asok	Fabaceae	Tree	Bark	Juice made from bark is used as Irregular menstruation.
30	<i>Scoparia dulcis</i> L.	Bandhoney	Scrophulariaceae	Herb	Root	Decoction of the root is given in excessive menstruation.
31	<i>Solanum torvum</i> Sw.	Titbegun	Solanaceae	Herb	Root	Root juice is used as menstrual problems.
32	<i>Spondias pinnata</i> (L.f) Kurz.	Deshi amra	Anacardiaceae	Tree	Root	Roots are useful in regulating menstruation.
33	<i>Terminalia chebula</i> (Gaertn.) Retz.	Haritoki	Combretaceae	Tree	Fruit	The fruits are used as painful menstruation.
34	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn.	Arjun	Combretaceae	Tree	Bark	Juice made from bark is used as menstrual problems and leucorrhoea.
35	<i>Zizyphus mauritiana</i> Lam.	Kalojam	Rhamnaceae	Tree	Seed	Pastes of seeds are used as a good for leucorrhoea.

Table 2. Analysis of the data based on habit showed that leading medicinal plants species

Habit	No. of species	Percentage (%)	Total number of species
Herbs	13	37.14	35
Shrubs	4	11.42	35
Climbers	4	11.42	35
Trees	14	40.00	35

Table 3. Number of plant parts used for medicinal purpose

S/N	Name of plant parts	Use of plant parts	Percentage (%)	Total number of species
	Bulb	1	2.85	35
2	Whole plant	4	11.42	35
3	Root	12	34.28	35
4	Stem	1	2.85	35
5	Bark	5	14.28	35
6	Flower	1	2.85	35
7	Fruit	5	14.28	35
8	Seed	7	20.00	35
9	Latex	1	2.85	35

Table 4. Distribution of species among different families

S/N	Family name	Number of species	Percentage (%)	Total number of species
1	Amaranthaceae	3	8.57	35
2	Acanthaceae	1	2.85	35
3	Apiaceae	1	2.85	35
4	Annonaceae	1	2.85	35
5	Anacardiaceae	1	2.85	35
6	Aloeaceae	1	2.85	35
7	Arecaceae	1	2.85	35
8	Bombacaceae	1	2.85	35
9	Bromeliaceae	1	2.85	35
10	Brassicaceae	1	2.85	35
11	Caricaceae	1	2.85	35
12	Combretaceae	2	5.71	35
13	Cucurbitaceae	1	2.85	35
14	Euphorbiaceae	3	8.57	35
15	Fabaceae	3	8.57	35
16	Lamiaceae	1	2.85	35
17	Liliaceae	1	2.85	35
18	Malvaceae	1	2.85	35
19	Meliaceae	1	2.85	35
20	Moraceae	2	5.71	35
21	Nyctaginaceae	1	2.85	35
22	Poaceae	1	2.85	35
23	Rhamnaceae	1	2.85	35
24	Scrophulariaceae	1	2.85	35
25	Solanaceae	1	2.85	35
26	Sterculiaceae	1	2.85	35
27	Vitaceae	1	2.85	35

4. Conclusions

The present findings are the first record of Ethno-gynecological study of traditional medicinal plants used by Santals in Joypurhat district of Bangladesh using standard research protocols. A total of 35 plant species under 33 genera of 27 families have been documented which are used for the treatment of gynecological diseases. The present study may be a preliminary contribution to the medicinal knowledge 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 gynecological use of medicinal plants by the Santals may be used for botanical and pharmacological research in future for the development of new sources of drugs.

Acknowledgements

The author is grateful to the Santals of Joypurhat district for their co-operation and help during the ethno-gynecological studies.

References

- [1] Ahmed, Z.U., Begum, Z.N., 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. Vols. 6-12. Asiat. Soc. Bangladesh, Dhaka. 2007-2009.
- [2] Alam, M.K. Medical ethno-botany of the Marma tribe of Bangladesh. Economic Botany, 46 (3): 330-335. 1992.
- [3] 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. 3 (7): 519-530. 2007.
- [4] Alexiades, M.N. (Ed). Selected Guidelines for Ethno Botanical Research: A Field Manual. The New York Botanical Garden, New York. 1996.
- [5] Ghani, A. Medicinal Plants of Bangladesh. Asiatic Society of Bangladesh, Dhaka. 1998.
- [6] Hooker, J.D. Flora of British India, Vols. 1-7. Reeve and Co. Ltd., London. 1961.
- [7] Jain, S.K. Dictionary of Indian Folk Medicine and Ethnobotany. Deep Publication, New Delhi, India. 1991.
- [8] Kirtikar, K.R., Basu, B.D. Indian Medicinal Plants, Vols. 1-5. Bishen Singh Mahendra pal Singh, Dehra Dun, India. 1982.
- [9] Khan, M.S., Huq, A.M. Medicinal Plants of Bangladesh, BARC, Dhaka, Bangladesh. 1975.

- [10] Khan, M.S. Prospects of Ethnobotany and Ethnobotanical Research in Bangladesh. In: Banik RL, Alam MK, Pei SJ, Rastogi A (eds.), Applied Ethnobotany, BFRI, Chittagong, Bangladesh, pp 24-27. 1998.
- [11] Patel, P.K., Patel, M.K. Ethnogaecological uses of plants from Gujarat, India. *Bangladesh J. Plant Taxon.* 19 (1): 93-94. 2012.
- [12] Prain, D. *Bengal Plants*, Vols. 1-2, Botanical Survey of India, Calcutta. 1963.
- [13] 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. J. Agri. Bio. Sci.* 4 (1): 70-74. 2008.
- [14] 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. *J. App. Sci. Res.* 6 (9): 1466-1473. 2010.
- [15] 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. J. Biosci.* 2 (7), 1-10. 2012.
- [16] Rahman, A, H, M, M, Kabir, E.Z.M.F., Islam, A.K.M.R., Zaman, A.T.M.N. Medico-botanical investigation by the tribal people of Naogaon district, Bangladesh. *J. Med. Plants Studies.* 1 (4): 136-147. 2013.
- [17] Rahman, A.H.M.M. Medico-botanical study of commonly used angiosperm weeds of Rajshahi district, Bangladesh. *Wudpecker J. Med. Plants.* 2 (3): 44-52. 2013.
- [18] Sajib, N.H., Uddin, S.B. Medico-botanical studies of Sandip Island in Chittagong, Bangladesh. *Bangladesh J. Plant Taxon.* 20 (1): 39-49. 2013.
- [19] 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.* 8 (1): 101-104. 2001.
- [20] Uddin, S.N., Uddin, M.Z., Hassan, M.A., Rahman, M.M. Preliminary ethno-medicinal plant survey in Khagrachari district, Bangladesh. *Bangladesh J. Plant Taxon.* 11 (2): 39-48. 2004.
- [21] Uddin, M.Z., Hassan, M.A., Sultana, M. Ethno-botanical survey of medicinal plants in Phulbari Upazilla of Dinajpur District, Bangladesh. *Bangladesh J. Plant Taxon.* 12 (1): 63-68. 2006.
- [22] Uddin, M., Roy, S., Hassan, M.A., Rahman, M.M. Medico-botanical report on the Chakma people of Bangladesh. *Bangladesh J. Plant Taxon.* 15 (1): 67-72. 2008.
- [23] Uddin, M.Z., Hassan, M.A., Rahman, M., Arefin, K. Ethno-medico-botanical study in Lawachara National Park, Bangladesh. *Bangladesh J. Bot.* 41 (1): 97-104. 2012.
- [24] 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.