

Traditional Drug Plants Sold by Herbal Healers in Districts of North Bengal Plains, West Bengal

Abstract: Herbal healers sell different crude drugs used widely for the treatment of different chronic diseases as well as various common ailments. These groups of people are descendants of medicine men and possess a sound knowledge of treatment system. In this present paper a total numbers of 19 crude drug plants were collected and identified, their usages, mode of preparation and prices have been documented.

Key words: Traditional drugs, Herbal healers, North Bengal, Plains, West Bengal

The plants containing inherent active ingredients used to cure diseases or get relieves from pain is called as the medicinal plants¹. From the dawn of the human civilization man has a clear dependency on the medicinal plants to treat his ailments. The oldest written evidence of medicinal plants usage for preparation of drugs has been found on a *Sumerian* clay slab from *Nagpur*, approximately 5000 years old. It comprised 12 recipes for drug preparation referring to over 250 various plants, some of them alkaloid such as poppy, henbane, and mandrake². As per WHO report³ about 80% of the world population is depends on the traditional medicines for their primary health care. In developing countries, it is commonly prevalent due to cultural acceptability, low cost, easy availability, and faith in the system and lesser side effects⁴. The World Health Organization (WHO) defines Traditional medicine as "... the sum total of the knowledge, skills, and practices based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health, as well as in the prevent of physical and mental illness"³. On the other hand the word "herbal medicines" means – "herbs, herbal materials, herbal preparations and finished herbal products, that contains as active ingredients parts of plants or other plants materials or in combinations"⁴. Further the word "traditional" in the title of the paper refers

to the long historical use of these medicines⁵. Thus it may conclude that the traditional medicine not only means the herbal medicine but it means other therapeutic modalities as well as therapeutic procedures. WHO in its 134th Executive board meeting (No. EB134/24 dated 13. 12. 2013) in its provisional agenda no. 9.1 emphasis was given to build the knowledge bases for active management of traditional and complementary medicine. In this regards a very promising and strategic step was taking by the Govt. of India in the late 2015 through the notification of the Ministry of the Health and Family Welfare, Govt. of India (No. G.S.R. 918(E) dated 30. 11. 2015) in which a "Phytopharmaceutical drug" was officially defined and includes under the regulatory ambit (CDSCO, 2015). In a country like India which has many Biodiversity rich states and also includes in the list of mega diversity countries of the world and contains 4 – Hotspots zone in its credits possesses a rich heritage of traditional medicine including the "*Ayurveda, Siddha, and Unani*" etc. and a lots of research is done on these areas^{6,7}. Besides these a wide diversity of the aboriginal people of this country also contributes a lot by their knowledge of treatment process of different ailments.

The plains of North Bengal is the northern part of the West Bengal, lying south of the hills of Darjeeling district and of western Bhutan and stretches as far as south to the river *Ganges*. This flat montane track consists of the Terai region of Darjeeling district, and other districts like Alipurduar, Jalpaiguri, Koch Behar, Uttar and Dakshin Dhanjpur and Malda. This region of North Bengal has been excluded from Purnea district of Bihar in west and Bangladesh in east and northeast. The region receives an annual rain fall of 3900mm. Summer temperature varies between 33° - 35°C and the winter temperature varies between 7.5 - 10 °C. The damp climatic condition of this region helps to growth of diverse luxuriant vegetation which includes ferns and fern allies. The tract of land also comprises the habitat of a diverse group of tribal people. The major tribal communities of this region are Rabha, Rajbanshi, Santal, Oraon, Mech, Polia or Polley, Munda,

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Lepcha, Kheria, Sherpa, Nepali, Toto etc. in these districts of the North Bengal plains except in the large town like Siliguri or Jalpaiguri town essence of village life is still found as a result here we found the weekly market took places in a specific days of the week in different villages of these districts. Here we also found that the traditional herbal healers are selling their crude drugs in those “Haat” (weekly village market) or in the busy streets, railway stations and in the river ferry Ghats. These healers are often descendents of ancients’ nomadic medicine men. Now a day they sell their medicine in different towns and maintain their livelihood. In most of the cases these medicine men gathered their medicinal knowledge from their forefathers and given drugs mainly for chronic ailments and also for common human ailments. Mainly poorer section of the societies (In the study area a major portion of the tea gardens workers and daily labors) are the main customer of these medicine men.

Main objective of this study is to identify the species of medicinal plants bears the commercial demands, documentation and make a policy to conserve this traditional knowledge, identify, understand and access demand of species before preparation of successful conservation strategies for flagship species.

During literature survey it has been found only a few publication on the targeted subject are available ⁸⁻²⁰, but not a single publication is found in the said studied area on this specific area of study. So, this present study is initiated with the following objectives –

1. To identify the crude drugs materials sold by these street herbal vendors.
2. To identify the species which are with commercial importance and in trade.
3. To document the traditional knowledge.
4. To make possible arrangement for conserving these traditional knowledge.

Methodology: In the busy streets of the districts of North Bengal plains and in the weekly market places (*Haat*) we will seen many such traditional herbal healers who were engaged in selling their crude drugs material to their patients. During 2017 – 2019 in frequent visit to different district of North Bengal Plains viz. Alipur Duar, Jalpaiguri, Koch Behar, Maldah, Uttar and Dakshin Dinajpur such Traditional Herbal healers were identified, and interviewed to collect their personal information as well as information about the local name of the drug, method of utilization of their drugs and the dosage of the drug. Finally specimen

sample of the crude drug materials were collected from them for identification. During this process a total numbers of 147 traditional healers from these 6 – districts were interviewed based on a specially prepared questionnaires of which 96 were respond positively for this study and their average age group is 39 – 65 years. All these traditional healers are mostly male members only 11 – such cases were identified that a female traditional healers were in association with the male drug sellers and they mostly giving drugs to the female patients. From these 147 traditional healers a total numbers of 64 – drug sample of plants and animal origin were collected among which 29 – sample were plants sample of crude drugs of which these present 19 samples were able to indentify based on the literature ²¹⁻²³. All the identified crude drugs materials are documented here in the table – I. in the documentation table the scientific name and family of the drug plants are given followed by their vernacular name, parts use, used for, mode of application and the rate at which these vendors are sold this materials to their patient is given. In this regard it is mentionable that, here the lowest price is documented but during trading of the drugs bargaining is a common feature.

Result and Discussion: All the collected as well as identified information were documented in the table – I,

From the table – I, it is observed that 19 species belonging in 17 genera under 14 plant families of which 1 – is of Pteridophytic member and the rest are the members of Angiosperms. These 19 – species of plants are used for the treatment of 36 different human ailments. Among these 14 – plant families from the point of view of generic diversity Fabaceae is the most diversified plant families contains 4 – genera and species in its credit, whereas from the point of view of species diversity Combretaceae is the most diversified plant family. Out of these 19 species Root and Rhizome is used in 7 cases; stem and stem bark is used in 3 cases; leaves in 2 occasions; fruits, seeds and whole plant is used in 4, 2 and 1 cases respectively. It is also observed that these traditional healers are generally sell remedies for common cold and cough, Fever, indigestion and Flatulence, dysentery and diarrhea, Erectile dysfunction, Menstrual disorder, Pains and Aches, Skin diseases, anorexia, Cardiac problem, etc. These 36 different ailments can be classified into following 5 – categories of diseases which are i. Cold and Cough, ii. Gastric disorder, Dysentery and diarrhea iii. Sex problems, iv. Skin Diseases and v. Pains and aches. Normally most of the crude drugs were sell in form of the powder which causes a lot of difficulties during identification. In case of the fruits and

Table. – I. List of Crude Drug Materials Sold in Different Places of North Bengal Plains by the Herbal Healers

Sl. No.	Scientific name & Family	Vernacular name	Parts use	Use for	Mode of application	Rate (Rs.)/Kg
1	<i>Abrus precatorious</i> L. Fabaceae	Jasthimadhu (B); Mulatthi (H); Liquorice (E)	Leaves; Roots:	Leaves: Fever; Cough. Root: Rheumatic Pain;	Fresh leaves are boiled in water; the aqueous infusion thus obtained is filtered through a clean cloth. This filtrate is mixed with sugar candy or honey in adequate amount and that is given to reduce cough. The same preparation is also given to reduce body temperature during fever. Fresh or dried roots are burned and a balm is prepared by mixing the root ash with <i>Reri</i> oil (Oil obtained from <i>Ricinus communis</i> L. seeds). That balm is warm gently and applied on the rheumatic site to reduce the pain.	Leaves powder Rs. 60/100gm. Roots dried 300/Kg.
2	<i>Acorus calamus</i> L. Acoraceae	<i>Bacha</i> (B); Vach (H); Sweet Flag (E)	Root	Rhizome: Cough, tonic and fever	Rhizome about 10gm is boiled in water for 20 – 30 minutes and the aqueous infusion is filtered. The filtrate is given two to three times a day to cure the stomachache and gastric disorder. The same infusion after mixing with <i>Chirata</i> (Dried Stem of <i>Swertia chirayita</i> (Roxb.) H. Karst.) to reduce fever temperature.	Dried Rhizome 450/Kg
3	<i>Aloe vera</i> (L.) Burm. f. Asphodelaceae	<i>Aloe</i> (B/ E); Mussabbar (H)	Leaves	Leaves gel: Purgative; Menstrual problems;	Fresh gel of the leaves about 1 – teaspoonful for the adult and it is 1/4 th teaspoonful for children is given as purgative. For children adequate amount of honey may be mixed with the gel. The leaf gel is also given to clear the suspended menstrual discharge.	Rs 20/two pieces of leaves.
4	<i>Asparagus racemosus</i> Willd. Asparagaceae	<i>Satamuli</i> (B); <i>Satvar</i> (H)	Roots	Lactation	About 100gm dried root powder is mixed with a glass of lukewarm goat milk and honey is given to the new mother at bed time and at morning after breakfast to increase the lactation.	Rs 20/100gm
5	<i>Bombax ceiba</i> L. Malvaceae	<i>Shimul</i> (B); <i>Saymal jhar</i> (H);	Root	Root: Increase of Sex Power	Dried root powder about 25 – 30 gm is mixed with a glass of luke warm goat milk and 2 – teaspoon full of honey is taken at the bed time for 3 – months to increase the sex power and sperm count.	Rs. 300/Kg.
6	<i>Caesalpinia crista</i> L. Fabaceae	<i>Nagargutta</i> (H)	Seeds	Seeds: Stomachache in children	1 seed crushed and put in a spoonful of milk and given 2 – 3 times a day to cure stomachache.	5 – 10 seeds @ Rs 20/-
7	<i>Curculigo orchoides</i> Gaertn. Hypoxidaceae	<i>Kalimusli</i> (H); <i>Talmuli</i> (B)	Rhizome	Rhizome: tonic; aphrodisiac	Dried rhizome powder	Rs 250/Kg.
8	<i>Curcuma caesia</i> Roxb. Zingiberaceae	<i>Kali Haldi</i> (H); <i>Bon Halud</i> (B)	Rhizome	Rhizome: Cough and cold in Children.	Dried rhizome powder is given with a teaspoonful of honey twice or thrice in a day to reduce and cure the cold and cough in children.	Rs. - 300/Kg.
9	<i>Delphinium denudatum</i> Wall. ex Hook. f. & Thomson. Ranunculaceae	<i>Kali Musli</i> (H)	Rhizome	Rhizome: Tonic; increasing of sex power in male.	Dried rhizome powder about 30–40gm is given with glassful of luke warm milk and 2 – teaspoonful of honey at bedtime for three time to increase sexual vigor and vitality. Dried rhizome	Rs 150/Kg.

Sl. No.	Scientific name & Family	Vernacular name	Parts use	Use for	Mode of application	Rate (Rs.)/Kg
10	<i>Guilandia bonduc</i> L. Fabaceae	<i>Lata</i> (B); <i>Nata</i> (H)	Seeds	Seeds: Diabetes	powder about 2 – 3 teaspoonful is given with a glass of warm water or milk to the children or new mothers as tonic. Dried seed powder about 10gm is taken with a glass of water at early morning in empty stomach for 3 – 7 days (According to condition of the patient) to reduce the sugar level in blood.	Rs 20/ 10seeds.
11	<i>Kigelia africana</i> (Lam.) Benth. Ssp. <i>Africana</i> . Bignoniaceae	<i>Bankhera</i> (H)	Fruit	Fruit: Gastric Disorder; Flatulence	Dried fruit powder is given with a glass of warm water to cure gastric disorder. Dried fruit powder is given with a glass of cold water to reduce the flatulence.	Rs 30/- / 100gm.
12	<i>Martynia annua</i> L. Martyniaceae	<i>Baghnakh</i> (B)	Fruit	Fruit: Poisonous Bite.	Fruit powder about 10gm is made into paste with <i>Haldi</i> and any edible oil and that paste is applied on the place of Insect Sting to reduce the pain.	Rs 20/- / 4 fruits
13	<i>Rauvolfia tetraphylla</i> L. Apocynaceae	<i>Sarpagandha</i> (B/H)	Root	Root: Sedative; antihypertensive/ Mental instability.	Root powder is given with a glass of warm milk at bed time as a sedative. Root powder about 1 – teaspoonful is given with honey and glass of warm water at morning before breakfast as anti hypertensive. Root powder about 20gm is made into paste and that paste is divided into 4 – equal parts. Each part is given 6 – hours intervals for 3 – months to cure mental instability.	Dried root powder Rs 700/- per Kg.
14	<i>Selaginella rupestris</i> var. <i>tropioca</i> Selaginellaceae	<i>Mritosanjibani</i> (B); <i>sanjibani</i> (H)	Plant	Plant: Stomachache; Blood Dysentery; Menstrual disorder.	Aquatic infusion of dried plants about 30 – 40ml each time is given 2 – 3 times a day to cure the stomachaches. Dried plants made into paste with honey and that paste is given 3 – 4 times a day for 3 – days to cure blood dysentery. Aquatic infusion of the plant is warm and it given at early morning in empty stomach for 4 – days starting from the first day of the menstrual cycle of women to clear the menstrual discharge and reduce the pain.	Rs. 40/- per bundle of dried plants contains about 50 – plants.
15	<i>Terminalia arjuna</i> (Roxb. ex DC.) Wight & Arn. Combretaceae	<i>Arjun</i> (B)	Stem Bark	Stem Bark: Boils; Cardiac tonic; chest pain.	Stem bark flakes about 10 – 15 gm is soaked in a glass of water for overnight. The aqueous infusion thus obtained is filtered and the filtrate is taken at early morning in empty stomach as cardiac tonic. Paste of the stem bark is applied on the boils for early suppuration. Stem bark made in to paste with sandal wood oil is warmed slightly and it is applied on the chest as a massage balm to reduce the chest pain.	Stem bark powder 300/- per kg.
16	<i>Terminalia bellerica</i> (Gaertn.) Roxb. Combretaceae	<i>Bahera</i> (B)	Fruit	Fruit: Piles; Anorexia; Diarrhoea; Sorethroat;	Two dried fruits are kept in a brass glass over night and the aqueous infusion thus obtained is taken at early morning in empty stomach for 1 month to reduce the bleeding problem due to piles and the pain. One or two pieces of the dried fruit is	Rs 20/- / 4 fruits

Sl. No.	Scientific name & Family	Vernacular name	Parts use	Use for	Mode of application	Rate (Rs.)/Kg
17	<i>Terminalia chebula</i> Retz. Combretaceae	Haritaki (B); Harad (H)	Fruit	Fruit: constipatin; anorexia.	advice to kept in the mouth before taking lunch and dinner and the extract that secretes is swallowed and then a glass of cold water is taken to reduce the effect of anorexia. The dried fruit coat powder (about 10 – 15 gm) is given with a spoonful of honey to cure dysentery in the children. Dried fruits 1 – 2 pieces are boiled in water and that aqueous decoction is applied for gurgle to reduce the sore throat. Aqueous infusion of the fruit is taken at the early morning in empty stomach to cure the problem of constipation. One or two pieces of the dried fruit is advice to kept in the mouth before taking lunch and dinner and the extract that secretes is swallowed and then a glass of cold water is taken to reduce the effect of anorexia.	Fruit powder Rs 30/- / 100gm.
18	<i>Tinospora cordifolia</i> (Willd.) Hook. f. & Thomson. Menispermaceae	Gulancho (B); Gecloay (H).	Stem	Stem: Fever; Jaundice; Diabetes.	Dried stem powder 1 – 2 teaspoonful is given with a glass of green coconut water to reduce the fever temperature. Dried stem powder 1 – teaspoonful is made into paste with honey and that paste is given twice a day before food for 15 – 21 days to cure yellowness due to jaundice. Dried stem powder 1 – teaspoonful is taken with a glass of cold water twice a day after food to reduce the sugar level in the blood. It is continued for 15 – days and restart the medicine after a gap of 7 days.	Stem bark powder 450/- per kg.
19	<i>Vachellia nilotica</i> (L.) P. J. H. Hurter & Mabb. Ssp. <i>tomentosa</i> (Benth.) Kyal & Boatwr. Fabaceae	Babla (B); Babool (H)	Stem Bark	Stem Bark: Gum Care; Sore throats.	The stem bark powder is used for the treatment of toothache. One teaspoonful of stem bark powder is mixed with half glass warm water and used for gurgle to cure sore throats.	Stem bark powder 300/- per kg.

stem bark they are make into small pieces and often may be coloured with some natural dye.

During interviewing of all the healers it is confirmed that, the source of origin of their knowledge about healing process and drugs are common in origin because most of them have similar types of drug plants and applied for same diseases also. There are two types of customer one group of people are belong to BPL category and they procure drugs to treat their common ailments like fever, cold and cough, stomach disorder, diarrhea and dysentery etc., as these herbal healers sell drug in cheap prices in comparison to synthetic drugs. The second group of people is in haunt of medicine to treat their chronic diseases ^{4, 14, 19, 24}.

It is also interesting to note that, the healing properties of these medicines are different from the Indian Meteria Medica, because out of these 19 plant species only 6 – remedies (31.57%) were found similar with the Nadkarni's Indian Meteria Medica: which are - *Acorus calamus* L. for tonic, *Aloe vera* (L.) Burm. f. for purgative, *Curcuma caesia* Roxb. for cough and cold, *Terminalia arjuna* (Roxb. ex DC.) Wight & Arn. For Cardiac tonic, *Terminalia bellerica* (Gaertn.) Roxb. for diarrhea and *Tinospora cordifolia* (Willd.) Hook. f. & Thomson. For fever²⁵.

It is also observed that, these healers are often sell adulterated drug materials for example in name of the “*Sarpagandha*” which normally goes for the species of

Rauvolfia serpentina and normally used for the treatment of Hypertension, as Sedative, and for Mental instability, this herbal medicine traders sold the species of *Rauvolfia tetraphylla* which is a adulteration of *Rauvolfia serpentina*. By the same way it is also observed that, some of the healers sell the rhizome of *Curculigo orchioides* as *Kali musli* and some sell the species of *Delphinium denudatum*, it may happen due to mismatch of the identity of the species bearing the same vernacular name or due to intension of drug adulteration. Most of the people of the middle class societies purchase drug to treat sexual inabilities from these traditional healers

Conclusion : In this present paper an attempt has been taken to document and conserve the knowledge of these traditional healers, which is depleting in a rapid pace due to advent of the modern synthetic drugs. Apart from this point of conservation of medicinal knowledge of these traditional medicine vendors, new uses of the plants can be also documented, *e.g.* use of *Guilandia bonduc* L. seeds for the treatment of the diabetes (Hyperglycemia) is reported for the first time here and more pharmacological investigation is needed on this aspects, by the same way use of *Delphinium denudatum*, in place of *Curculigo orchioides* is also reported here which is also needed further detail investigation. . Among these 19 – plant species of crude drug materials none is included in the IUCN red list of RET plants, so, nothing is worried about the conservation strategies of these species right now. But a close vigil should be maintain on these plant species because of their profuse commercial uses specially those 9 – plant species whose root and rhizome are used as crude drugs may included in the list of the RET plant in near future due to over exploitation.

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1. R. N. Okibo, U.E. Eme and S. Ogbogu. *Biotechnol. Mol. Biol. Rev.* 3(6): 127 – 134. (2008).
2. K. Kelly. *History of Medicine* (New York, 2009). *Facts File.* pp. 29 – 50.
3. [www.http:// WHO/EDM/2004.5](http://www.who.int/edm/2004.5) & WHO/EMP/2009.1.
4. V. P. Kamboj. *Curr. Sci.* 78: 35 – 38 (2000).
5. WHO Report 2017.
6. B. Ravisankar and V. J. Shukla. *Afr. J. Tradit. Complement. Altern Med.* 4: 319 – 337 (2007).
7. L. V. Prasad. In Ranjit Roy Chaudhury (Eds.) *Traditional Medicine in Asia* (WHO Regional office for SE Asia, New Delhi, 2002). pp. 283 – 286.
8. V. Kumar and S. K. Jain. *Econ. Bot.* 56: 242 – 245. (2002).
9. R. L. S. Sikarwar, M. Tripathi and B. Pathak. *Ethnobotany.* 24: 114 – 118. (2012).
10. Y. A. Patil and M. V. Patil. *J. Ecobiotech.* 3: 1 – 3. (2011).
11. Y. A. Ahirrao, M. Patil and D. A. Patil. *J. Phytology.* 2: 9 – 13. (2011).
12. M. C. Nisha and S. Rajeshkumar. *Ind. J. Nat. Prod. Reso.* 1: 376 – 383. (2010).
13. R. K. Sinha, G. S. Nathawat. *Ancient Sci. life.* 9: 66. (1989).
14. R. K. Sinha. *J. Sci. Res. Plant.* 12: 40 – 42. (1991).
15. N. Nagraju and K. N. Rao. *J. Ethnopharmacol.* 29: 137 – 158. (1990).
16. R. K. Sinha and G. S. Nathawat. *J. Sci. Res. Plant.* 10: 1 – 5. (1989).
17. M. B. Reddy, K. R. Reddy and M. N. Reddy. *Pharm. Biol.* 27: 145 – 155. (1981).
18. P. K. Hajra and P. Chakrabarty. *Indian J. Forestry.* 4: 217 – 220. (1981).
19. R. K. Sinha. *Ancient Sci. life.* 10: 207 – 211. (1991).
20. Avinash Bharati Kumar and Mukhesh Kumar. *India J. Trad. Knowledge.* 13(3): 600 – 605. (2014).
21. Anonymous. *Wealth of India.* (CSIR Publication, New Delhi, 1971 – 1999). Vol. 1 – 14.
22. Y. K. Sarin. *Illustrated Manual of Herbal drugs Used in Ayurveda.* (CSIR, Jammu, 1996).
23. R. N. Chopra, I. C. Chopra, K. L. Handa and L. D. Kapur. *Chopras Indigenous Drugs of India.* (Academic Publishers, Kolkata, 2006).
24. A. K. Bharati and B. L. Sharma. *Ethnobot Res. Application.* 10: 339 – 356. (2012).
25. K. M. Nadkarni. *Indian Meteria Medica* (Popular Book Depot. Bombay, 1954) Vol. 1 & 2.