

THE UNIVERSITY OF BURDWAN



DISSERTATION REPORT ON THE TOPIC –
TRADITIONAL KNOWLEDGE OF MEDICINAL
PLANTS AND THEIR USES IN BIRBHUM DISTRICT :

A BRIEF REVIEW

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Thanks are due to all those medicine men, exorcists and local people of the district for sharing their valuable ethno medicinal knowledge with us and their kind cooperation rendered throughout this study.

INTRODUCTION

The present study highlights the traditional knowledge of different ethnic groups of Birbhum district about the usefulness of various medicinal plants towards curing of different ailments. It is well known that even in developed countries, the use of traditional medicines is quite prevalent.

From the onset of human civilization, plants become an intimate component of the human society. To understand the interrelationship between man and its surrounding plant wealth, the term 'ethno botany was coined by J. W. Hershberger in 1895(Hershberger, 1896).

The present paper deals with observation on ethno medicinal uses of plants by the tribal people of Birbhum district, West Bengal. Tribal medicine is an age-old therapeutic system which is traditionally practiced among different tribal communities for their primary health care needs. The tribal people of this district mainly depend upon the forest flora for their livelihood and use herbal medicines in curing the ailments and diseases. Altogether 30 plant species belonging to different families have been recorded from the district. These plant species are effective for various common human ailments. Considering individual plant parts it is found that leaf is used in 20 cases. Bark in 12 cases, fruits in 6 cases, stem in 3 cases, latex and flowers in 2 cases, sap and rhizome in 1 case. Finally the recorded plant taxa have been enumerated according to their botanical names along with families, local or tribal names, parts used, disease cured, mode of administration, etc. This folk knowledge on medicine should be documented immediately and therapeutic validation of these herbal medicines is emphasized. To avoid biodiversity extinction some measures would be taken, like, cultivation of rare medicinal plants, provision of training and extension services to farmers engaged in cultivation of medicinal plants, establishment of herbal gardens in forest areas and creation of seed bank.

Man has used plants and plant parts for medicinal purposes from time immemorial. The ancient scriptures of all civilizations are loaded with innumerable references of medicinal plants. In fact, there is no plant under the sun, which arguably does not have any medicinal properties. Plant wealth is renewable resource and has substantially contributed to our economic development. Our country is a land of amalgam of religions, cultures, races, languages and dialects, apart from its biological diversity. Interestingly, we have more than 560 kinds of aboriginals of diverse origin. This unparallel feature of our land, no wonder, attracts many of our research workers and scholars.

Medicinal plants played an important role in various traditional systems of medicines of different countries such as Indian Systems of Medicines (Ayurveda, Unani, etc), Traditional Chinese Medicine, Tibettian Medicines, etc. With the renewed interest in ethnobotany, the

alternative herbal medicines and products are gaining more popularity in recent years. In this context, the current value of trade in Indian systems of Medicine (chiefly Ayurveda, Siddha and Unani) and Homoeopathy has been estimated by the Ayurvedic Drug Manufacturers Association (ADMA) to be around Rs. 4205 corers. Around 40% or more of the pharmaceuticals of the world used certain plant extracts or active principles derived from natural resources.

The researchers are interested towards the plants, hitherto unexploited or under exploited, for medicinal purposes taking cue mainly from the Sanskrit-Ayurvedic literature. The roots of traditional as well as modern systems of medicine are anchored in the substratum of folk medicine which has been undergoing oral transmission through generations and concomitant chronic erosion. Folk-medicine or more precisely the ethno medicine has provided the material to human resources to identify the active principles for formulation of medicines of different types and applications. The modern civilization learnt many fundamental principles and age-old wisdom from the aboriginal and rural ethnic societies. Indian region is amongst the richest ethno botanical treasures in the world. It needs factual documentation, sustainable utilization and conservation.

Several studies on medico-ethno botany have been carried out in various parts of India, over the last few decades, emphasizing attention in various tribal inhabited zones because of its relevance to the discovery and development of new or less known medicinal plants. Deforestation from developmental and other activities have resulted in biotic simplification and many of the local medicinal plants including some unique and irreplaceable varieties are either already extinct or endangered. Thus, the programmes have been launched worldwide for documentation of hitherto unrecorded art and science of folkmedicines applied against diseases ranging from common to uncommon, trivial to critical, acute to chronic types. Moreover, herbal medicines have occupied the thrust area for being more patient-friendly, easily available and low-priced.

A perusal of literature, to date, warranted that Birbhum district of West Bengal are not fully documented ethno botanically. Ethno botanical information, whatever is revealed, are largely a part of routine floristic studies in this region. In view of this, the present work was undertaken to explore the ethno botanical resources of Birbhum district of West Bengal. In conformity with the rask of stock-taking of the medicinal plants, Birbhum district was chosen from West Bengal since it shows a unique assemblage of components of the state/district flora with many species of aliens, weeds, ornamentals, avenue trees, epiphytes, etc.

OBJECTIVE:

- Explore origin of herbal medicine.
- Understand the use of medicinal plants for treatment.
- Understand quality, safety, and efficacy of using herbal medicine for treatment.
- Find out whether or not herbal medicine should be used in this contemporary Society.
- To know whether the people are aware about the use of medicinal plants
- To obtain well characterized and reproducible samples of medicinal plants.
- To check the present status and reliability on traditional system of medicine.

ABSTRACT

Present paper highlights the quantitative analysis of recorded information on the indigenous phototherapy for livestock health problems in Birbhum district, West Bengal, India. Altogether 25 plant species have been recorded among which about 60% are of herbaceous type. Underground parts (38%) are considered as most effective ingredients. These ethno veterinary claims have to be validated further for development of new cost effective veterinary medicine.

Medicinal plants played an important role in various traditional systems of medicines of different countries such as Indian Systems of Medicines (Ayurveda, Unani, etc.), Traditional Chinese Medicines, Tibettian Medicines, etc. The World Health Organization (WHO) since 1970 is advocating preservation of national heritage of ethno-medicines and ethno-pharmacology and reintroduction of medicinal and aromatic plants in the primary health care system in their member countries. A perusal of literature, to date, warranted that the Birbhum district of West Bengal are not fully documented ethno botanically. Intensive field work was conducted for five years covering all the seasons so as to collect detail information on plant species found useful in ethno medicine as well as for the other local uses of the plants occurring in Birbhum district in West Bengal. Observations were made of the plant species with respect to their location, habit, habitat and other field characters, 227 numbers of plants have been recorded from Birbhum district, 8 number of plant species recorded as rare from Birbhum district. This study will enrich the data bank of ethno botany of the Birbhum district and by incorporating new information about non-conventional uses of plant wealth.

MEDICINAL PLANTS USED BY THE TRIBAL PEOPLE OF BIRBHUM DISTRICT IN WEST BENGAL

SL . N O	Botanical name	Family	Tribal/Local name	Parts used	Ailments	Mode of administrati on
1	<i>Azadirachta indica</i>	Meliaceae	Nim	Fruit, Leaf, Stem bark	Malaria, Stomachache, Impotency	Leaves, stem bark boiled in water and the decoction is taken orally
2	<i>Ficus benghalensis</i>	Moraceae	Bat	Latex	Paronychia (nail infection)	Latex collected from the plants is warmed and applied externally on the affected nail of toes twice in a day
3	<i>Terminalia cuneata</i>	Combretaceae	Arjun	Bark	Heart trouble	Bark paste mixed with ghee (clarified butter) and taken one teaspoonful once in the morning in empty

						stomach for seven days
4	<i>Calotropis gigantea</i>	Asclepiadaceae	Akanda	Leaf, Root, Latex	High fever, Snake bite, Skin irritation	Fresh leaves are chewed for snake bite. Juice of leaves is used for fever. Latex is used for skin diseases
5	<i>Piper nigrum</i>	Piperaceae	Golmorich	Fruits	Anticancer, Antioxidant	Black pepper is stimulating to the digestive system, expectorates

						coughs, and helps to clear the lungs of congestion
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6	<i>Mimosa pudica</i>	Mimosaceae	Lajjabati	Root, Leaf	Dysentary, Bleeding wounds	The fresh juice of leaves is given internally to stop bleeding. The paste of the leaves is applied externally on piles, fissures, skin wounds, ulcers, etc
7	<i>Datura metel</i>	Solanaceae	Dhutura	Leaf	Antimicrobial epilepsy, hysteria, insanity, skin diseases	Leaves are used for scabies, eczema and allergy. Application or drinking of leaf juice relieves pain and swelling. Leaf juice is mixed with a little opium and applied to the affected area to reduce swelling of gums or base of ears
8	<i>Ficus hispida</i>	Moraceae	Dumar	Leaf, Bark	Antiasthmatic, Chest pain	Juice of leaves, Powder of bark
9	<i>Cissus quadrangularis</i>	Vitaceae	Harjora	Stem	Fracture bone	Stems are banded with fracture bone

10	<i>Curcuma longa</i>	Zingiberaceae	Halud	Rhizome	Contraception, swelling, insect stings, wounds, whooping cough, inflammation, internal injuries, pimples, injuries, as a skin tonic	Sweetened milk boiled with the turmeric is the popular remedy for cold and cough. It is given in liver ailments and jaundice.
11	<i>Echinochloa colona</i>	Poaceae	Shyama ghas/ Lakshmi ghas	Seed	Digestive stimulant tonic for the liver	Cooked or eaten raw with rice
12	<i>Argemone mexicana</i>	Papaveraceae	Shialkanta	Whole plant, Leaves, seeds, roots, flowers, fruit. Yellow juice, latex	Analgesic, antispasmodic, antitussive, demulcent, emetic, expectorant, hallucinogenic, purgative, sedative, skin warts, impotence.	The root has been used in the treatment of chronic skin diseases. The flowers are expectorant of coughs. The seed has also been used as an antidote to snake poisoning. The oil from the seed is purgative. It has been used in the treatment of skin problems.

13	<i>Cyperus rotundus</i>	Cyperaceae	Muthoghas	Root	Digestion	To make paste with small amount of salt and should be taken daily after major meal.
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14	<i>Alternanthera sessilis</i>	Amaranthaceae	Sinchesak/senchisak	Whole plant	Burning sensation, diarrhea, skin disease, dyspepsia, hemorrhoids, liver and spleen diseases and fever.	Plants are made into paste and paste is administered as poultice on affected body part.
15	<i>Ammania baccifera</i>	Lythraceae	Dadmari	Whole plant	Burning sensation	Past of whole plant
16	<i>Commelina nudiflora</i>	Commelinaceae	Kansira	Whole plant	Skin disease	Juice of whole plant
17	<i>Marsilea quadrifolia</i>	Marsiliaceae	Susonisak/susnisak	Whole plant	Cough, bronchitis, diabetes, psychiatric diseases, eye diseases, diarrhea and skin diseases.	Used as vegetables and juice of leaves is applied on affected area.
18	<i>Echinochloa crusgalli</i>	Poaceae	Molanda, Dotalaghas	Whole plant	Spleen and in checking haemorrhage.	Take juice daily.
19	<i>Cynodon dactylon</i>	Poaceae	Durba, Dubbaghas, Duburighas	Whole plant leaf	Congestive heart failure, diarrhea eye tonic, prevent conjunctivitis.	Drink juice daily.
20	<i>Chenopodium album</i>	Chenopodiaceae	Bethu, Betsak	Leaves	Appetizer, dysentery, digestive.	Leaf as vegetables.

21	<i>Polygonum plabeium</i>	polygonaceae	Maskati , Chikni sak	Whole plant	Bleeding, dysentery and haemorrhoids.	Fresh juice is applied in affected area and leaves are used as vegetables.
22	<i>Taraxacum officinale</i>	Asteraceae	Dandelion	Whole plant, root	Digestive stimulant tonic for the liver.	To make paste with small amount of salt and should be taken daily after major meal.
23	<i>Ludwigia parviflora</i>	Onagraceae	Bon Labanga, Saga ghas	Root	Cancer	Drink juice daily.

24	<i>Croton bonplandianum</i>	Euphorbiaceae	Ban tulsi, Bhabri	Stem , Leaves	Clotting of blood, curing of wounds	Leaves juice and latex are applied
25	<i>Centella asiatica</i>	Umbellifereae	Thalkuri, Thankuni	Twigs, Leaves	Blood dysentery, appetizer	Fresh leaves and twigs in empty stomach for 5-7 days cure blood dysentery.
26	<i>Eclipta alba</i>	Asteraceae	Kesut, Keshukti	Leaves, Whole plant	Cooling effect on brain, Skin diseases.	Fresh leaves are applied with sesame oil to cure baldness/ elephantiasis & headache and juice of whole plant is applied on affected area on skin.

27	<i>Portulaca aleracea</i>	Portulacaceae	Nunia sak, Luniya sak	Whole plant	Cooling in stomach, skin, dysentery.	Whole plant juice boiled against dysentery and prickly heat in stomach.
28	<i>Leucas aspera</i>	Lamiaceae	Drone, Halkusa	Leaves	Skin diseases, cough and cold.	Fresh leaves juice applied in skin eruption, allergic swelling and other swellings.
29	<i>Asteracantha longifolia</i>	Acanthaceae	Kulekhar, Kulata	Leaves	Diuretic, blood purifier.	Boiled juice of leaves used against anaemia (710 days).
30	<i>Bacopa monnieri</i>	Scrophulariaceae	Brahmi sak, Baramblu	Whole plant	Improvement of intelligence & memory, youthful vitality.	Used as vegetables for improvement of intelligence
						& memory and nervous system.



Photo by Rankesh Gurung



(1)



(2)



(3)



(4)



(5)



(6)

- (1) *Anacardium occidentale* L.,
- (2) *Calotropis gigantea* (Aiton)R.Br,
- (3) *Amorphophallus paeoniifolius* (Dennst.) Nicolson,
- (4) *Argemone mexicana* L.
- (5) *Datura alba* Nees.
- (6) *Dieffenbachia bowmanii* Carrière



A



B



C



D

Figure 4: Photographs of some of the ethnoveterinary medicines [A] Feather of *Coracias benghalensis* L. and seeds of *Abrus precatorious* L., [B] *Ludwigia adscendens* (L.) H. Hara, [C] *Andrographis paniculata* (Burm. f.) Nees, [D] *Cissampelos pareira* L.

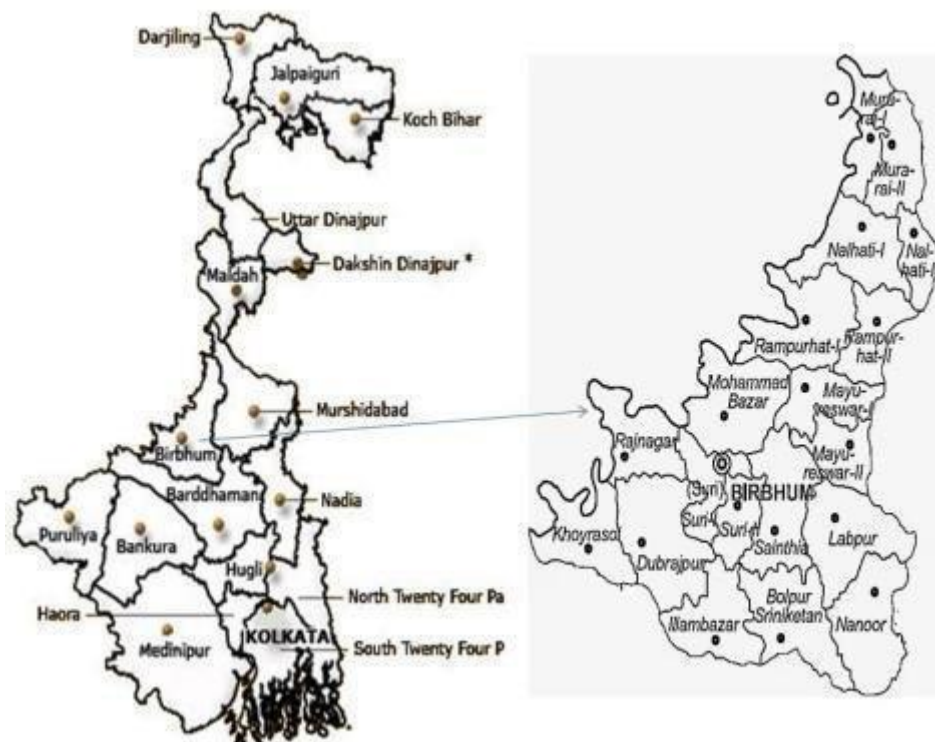
MATERIALS AND METHODS

The present study deals with the indigenous knowledge related with ethno medical uses of weed plants used by the local people of Birbhum district in West Bengal. The rural people mostly depend on cultivation. Prior to the field visits, extensive literature survey was carried out on the previous ethno medicinal and floral reports on the district. Rural areas were visited during summer, monsoon and winter to avail most of the plants in their conditions. During the visits, the informants were chosen on the basis of structured questionnaire. The methodology was adopted as described by Jain (1999), Chadwick and Marsh (1994). Structured questionnaires, interviews and participatory observations were used to elicit information from the resource persons using standard methods (Martin, 1995). The data was recorded in a data sheet with the names of the plants, families, local names, parts used, ethno medicinal uses. Informants were selected on the basis of their ability to identify a particular plant insitu and their basic knowledge of ethno medicine. Local herbal medicinal practitioners (folk doctors) and elderly people were preferred during the interviews.

Generally the two types of interviews were taken, firstly of individuals and secondly of groups. Of individuals, persons were selected at random on the way or entering a hut finding out knowledgeable individuals from the village or also the Headman. In group interviews more than one individual were approached, our purpose explained and interviews taken. They were requested to collect specimens of the plants they knew or to show the plant species on site. The collected plant species have been carefully identified with the help of different Floras and standard literature (Dutta and Banerjee, 1978; Jain, 1987; Jain, 1991; Sanyal, 1994; Maheswari, 2000; Tribedi and Sharma, 2004). The plant specimens have been preserved as herbarium specimen following conventional techniques (Jain and Rao, 1977).

STUDY AREA

The district Birbhum lies at the north eastern end of the Chota Nagpur Plateau and remains as a part of Laterite belt of West Bengal. It is situated between 23°32'30'' to 24°35'00'' North latitudes and 87°5'25'' to 88°1'40'' East longitudes, and occupies an area of 4545 sq km. According to the 2011 census, 29.5% of the district population belongs to the scheduled castes and 6.7% to the scheduled tribes. In this district, about 75% of the population mainly depends upon agriculture for their livelihood. Buffaloes and bullocks are still the primary backbone in the district for non-mechanized traditional agriculture.



DATA COLLECTION

Many field trips were made for a period of two years (February 2012 to March 2014) in 10 sample villages of the district Birbhum to collect ethnomedicinal data. At first, the key informants have been identified through discussions made with the local people of selected 10 villages. All together 21 key informants were identified here for interviewing. Demographic details of the key informants have been collected. Interviews were conducted using semi-structured and open ended questionnaires (Cotton, 1996; Martin, 2004). All the data have been recorded here after taking Prior Informed Consent (PIC) from the knowledge providers.

RESULTS

An effort has been made to collect relevant data on the traditional or folk medicines as well as on the other uses such as food, fodder, fibre, vegetables, dye etc. The plants associated with the religious faiths and beliefs are also noted during the field works. Continued personal attachment with the tribal people has made possible to gather sufficient information on their culture, life style, superstitious etc. and more particularly application of plants or plant products for curing human as well as animal diseases and ailments in the region.

The first hand information is gathered mainly for 227 species belonging to 156 genera and 67 families of dicotyledons and 34 genera and 18 families of monocotyledons.

The rich vegetation of the districts provided the inhabitants enormous resources of plant wealth. There were a few reports of these resources. Information of the utilization of plant for various purposes passed on through oral communication only. These have been critically tapped from them. Many plant species are useful multipurposely. About 202 species are used as ethno medicines.

Many plant species are useful multipurpose. 202 species are used as ethno medicines. Considering the utility some of the plants are recorded from this study for the first time e.g. *Azanza lampas* Cav. (Malvaceae), *Rivea hypocrateriformis* Choisy (Convolvulaceae), *Urginea indica* (Roxb.) Kunth. (Liliaceae), *Solanum glaucum* Dun. (Solanaceae).

Locally available weed plants are used by the peoples for their household remedies and various purposes. The data has been verified from the ethnic people of different tribal areas. Informants certainly reflects the accuracy and authenticity of the folk drugs employed. The major weed flora associated with transplanted rice in the district are *Alternanthera philoxeroides*, *Alternanthera sessilis*, *Ammania baccifera*, *Commelina nudiflora*, *Cyanotis axillaris*, *Lindernia ciliate*, *Lindernia crustacean*, *Ludwigia parviflora*, *Marsilea quadrifolia*, *Ammania multiflora*, *Jussia repens*, *Sphenoclea zeylanica*, *Croton bonplandianum*, *Portulaca oleraceae*, *Leucas aspera*, *Asteracantha longifolia*, *Bacopa monnieri* among broadleaved, *Cynodon dactylon*, *Dactyloctenium aegyptium*, *Digitaria sanguinalis*, *Echinochloa colonum*, *Echinochloa crusgalli*, *Echinochloa glabrescens*, *Paspalum distichum* among grasses, *Cyperus difformis*, *Cyperus iria*, *Cyperus compressus*, *Fimbristylis miliacea* and *Scirpus articulatus* among sedges and *Chara zeylanica*, as algal weeds.

Weed flora in rabi crops are *Anagallis arvensis*, *Celosia argentea*, *Chenopodium album*, *Croton bonplandianum*, *Drymaria cordata*, *Eclipta alba*, *Gnaphalium indicum*, *Gnaphalium pensylvanicum*, *Gomphrena celosioides*, *Gnaphalium purpureum*, *Oxalis latifolia*, *Physalis minima*, *Polygonum plebeium*, *Solanum nigrum*, *Spilanthes acmella* *Melilotus alba*, *Melilotus indica*, *Physalis minima*, among broad leaved; *Cynodon dactylon*, *Digitaria sanguinalis*, *Echinochloa colonum* among grasses and *Cyperus rotundus* as sedges.

Major weeds associated with sugarcane are *Argemone mexicana*, *Ageratum conyzoides*, *Blumea lacera*, *Commelina nudiflora*, *Convolvulus arvensis*, *Eclipta prostrate*, *Eclipta alba*, *Lindernia crustacean*, *Ludwigia parviflora*, *Gomphrena celosioides* among broad leaved; *Cynodon dactylon*, *Dactyloctenium aegyptium*, *Digitaria sanguinalis*, *Echinochloa colonum* among grasses and *Cyperus rotundus*, *Cyperus compressus* among sedges.

The chilli crop is infested with *Gnaphalium indicum*, *Gnaphalium pensylvanicum*, *Gnaphalium purpureum*, *Phyllanthus fraternus*, *Physalis minima*, *Solanum nigrum*, *Tridax procumbens*, *Vernonia cineria*.

Weeds associated with summer vegetables are *Alternanthera sessilis*, *Amaranthus viridis*, *Croton bonplandianum*, *Euophobia hirta*, *Trianthema portulacastrum* among broad leaved weeds; *Cynodon dactylon*, *Digitaria sanguinalis*, *Echinochloa colonum* as grasses and *Cyperus rotundus* as sedge (Anonymous 2010).

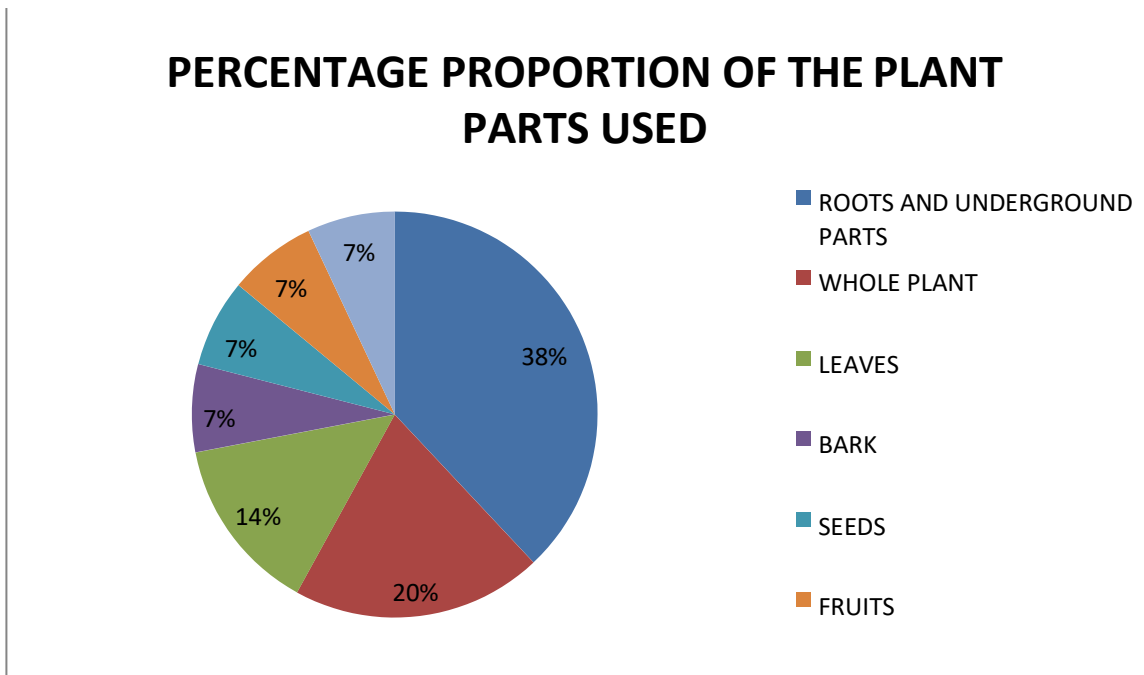
In our investigation we found that tribal people of Birbhum district use some of these weed plants in different ways which is devoid of Ayurvedic and Unani medicinal system.

These are numerous uses of weed species as herbal medicines to cure a host of body ailments and diseases in this region. Now, traditional knowledge regarding the use of medicinal plants has been threatened in its existence and is gradually being lost from the traditional society due to erosion of its culture. It is now high time for us to document the herbal traditional knowledge before it gets lost from the tribal society forever and simultaneously to conserve these medicinal plant resources also. The data provided in this study will finally be helpful to prepare the district as well as state inventory on folk medicine. This traditional herbal knowledge of the studied areas needs proper documentation otherwise it will be lost from its folk society forever. The information documented in this investigation, will further be validated through phytochemical, pharmacological and clinical studies. The various folk medicinal uses of plants recorded here in this investigation need further scientific studies for their therapeutic validation. However, more research is needed to verify the active chemicals and how herbal medicines, based on weeds, can cure human diseases. Thus, investigating therapeutically or allelopathically active compounds in colonizing plants presents a scientific challenge. Elucidating the chemistry of these bioactive compounds will led to identifying opportunities for future development of medicines .

A total of 25 plant species have been recorded here which spread over 23 genera and 16 families of flowering plants. According to the habits, the recorded plants have been categorized into herbs (60%) followed by trees (16%), shrubs (12%) and climbers (12%). Out of 25 recorded medicinal plant species, parts of 22 species are collected by the local people from the wild and ingredients of 3 plant species (black pepper, black cumin and ajwain) are procured from commercial market. Present study reveals that 24 types of ethno veterinary medicinal preparations were used in 14 types of health conditions. The recorded 14 health conditions have been grouped into 9 disease categories following the standard classification of Cook (1995) with little modification.

Out of 24 ethno medicinal preparations, 17 preparations have been administered in the form of single herb and rest 7 preparations were used in the form of multiple herbs. Roots and underground parts

are used in highest percentage (38%) for preparation of ethno veterinary remedies, followed by whole plants (20%), latex (14%), and each of leaves, bark, fruits and seeds (7%). About in 75% cases, remedies were administered orally and in rest 25% cases, topical mode of administration was recorded. During oral application, the crude drugs are administered along with bamboo leaves, paddy straw, rice bran, molasses and rice gruel to make the drug preparations palatable to the animals and thus, administration of the drugs becomes quite easier. For preparation of the poultice, a very common mode of topical application, sun burned rice ('Atap-chaal') and table salt are used along with medicinal ingredients. Only in one preparation, the feathers of *Coracias benghalensis* L. (Indian Roller, "Nilkantha") were used along with seeds of *Abrus precatorious* to check diarrhoea.



DISCUSSION

Among the 25 recorded plant species, it has been found that about 60% of the medicinal plants are of herbaceous type which depict their frequent use in preparation of ethno veterinary remedy and also indicate the availability of those herbs in the locality. It was also observed that in most of the traditional societies, the root and underground parts are used in higher percentage than other parts of the medicinal plants for crude drug preparation (Mitra and Mukherjee, 2005; Ngarivhume et al., 2015). Similar pattern of use was also observed here in the district Birbhum where root and underground parts of the recorded plants are used in 37.9% cases as ingredients of ethno veterinary medicine. The underground parts of the plants are known as one of the major sites where many of the bioactive compounds are synthesized and or accumulated which further highlights the scientific basis of this folk knowledge regarding the usages of these two diseases categories and the informants are not agreed upon the use of a particular plant species for treatment of each of these two disease categories. Use value of each of the recorded 25 plant species here highlights the citation frequency of each medicinal plant which depicts its importance as

curative ethno medicine upon which people in the study area depend most for primary health care of their domesticated animals. The use of *Piper nigrum* fruits in preparation of various ethno medicine is a very common practice in the culture of traditional people. Scientific studies validated this knowledge of using the *P. nigrum* fruits through detection of the alkaloid Piperine which enhances the bioavailability of the active principles present in the crude drug preparation (Patil et al., 2011). In case of *Andrographis paniculata* it was cited for 8 times here against snake bite .

CURRENTS TRENDS

Currently, Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2, formerly known as 2019 nCoV, has rapidly spread across China and around the world, Our special issue is focused on the use of Medicinal Plants as herbal ingredients in the formulations for Medicine.

Medicinal plants are considered as rich resources of ingredients which can be used in drug development pharmacopoeial, non-pharmacopoeial or synthetic drugs. Apart from that, these plants play a critical role in the development of human cultures around the whole world.

There are many benefits of Herbal Medicine like Easier to obtain than prescription medicine, Stabilizes hormones and metabolism, Natural healing, Strength in immune system, Fewer side effects. Considering the importance of immunity boosting measures during the COVID-19, it is very important to consume supplements in the form of immune nutrients such as vitamin A, C, E, D, B-complex, zinc and copper that will support your body to fight against the pathogens.

Application of modern technologies and methodologies in herbal medicine research and development using the accepted Western scientific and ethical standards can have a significant impact on the scientific validity, quality improvement, and standardization of herbal medicines.

CONCLUSION

Weeds are clearly highly successful plants owing to their special characteristics that confer superior colonizing ability and competitiveness. These attributes can be useful in many situations, such as in repairing damaged ecosystems. Weed species which are used for medicinal plants will receive more attention because 80% of the world population continues to rely mainly on traditional medicines for their health care. Studies on verification of chemical component in specific medicinal weeds will give a clue of synthesizing a new medicine.

The present investigation provides documentation, conservation and preparation of data bases of traditional knowledge are now a priority issue in our national agenda and in depth research with a system approach to wild species/varieties of medicinal plants are needed to integrate them into existing cultivation regime.

It is clearly observed that the knowledge regarding ethno veterinary medicine is still surviving among the elderly members of the rural communities in the district Birbhum. The present documentation will help in preservation of this valuable knowledge before it's extinction from the rural society. Some other plant species like *Senna occidentalis*, *Litsea glutinosa*, *Justicia gendarusa*, *Desmodium gangeticum*, *Colocasia antiquorum* and *Scoparia dulcis* were found interesting with their new type of uses as ethno veterinary medicine which needs further scientific studies for validation of their new ethno medicinal claims. Moreover, some plants have been identified here in this study as most effective species through quantitative analysis which can be considered as potent candidates for bio prospecting of cost effective ethno veterinary drugs.

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