



## The Indigenous ( Traditional) Knowledge System in Respect to Medicine: A Case Study of Uttrakhand, India.

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### ABSTRACT

India is one of the 12 Mega-biodiversity centres of the world with two biodiversity hotspot viz, Western Ghats and Eastern Himalayas. India, being the junction of Ethiopian, Palaeartic and Oriental realms of biogeography, got rich variety of biological community 'types'. India's cultural diversity is equally remarkable – shaped largely by the modes of subsistence ranging from hunting and gathering, nomadic herding and subsistence cultivation to intensive agricultural to modern industries. Given this heterogeneity of culture, the pressure of large human and livestock population and the substantial resource demand of the modern sector, conserving India's heritage of cultural and biological diversity is a daunting task (Gadgil 1991). India has been divided into 16 agro climatic zones with 45000 plant species of which 15000 medicinal plants that includes 7000 plants used in Ayurveda, 700 in Unani medicine, 6000 in Siddha medicine and 30 in modern medicine. The Indian system of medicine have identified 1500 medicinal plants of which 500 species are used in preparation of healing drugs out of these 150 plant species have been categorized as endangered. Registered practitioners of ISM & H and traditional healers used medicinal plants in preparation of medicines/ health foods etc. Keeping in view the utility of these plants steps are required to increase their availability (ISM & H, 2001). The study an attempt to analyze such traditional (indigenous) knowledge systems in the region of Uttrakhand state. The hills of the Uttrakhand are still replete with examples of, local community using the indigenous (traditional) knowledge for medicines (Ilyas, 1998).

**KEYWORDS :** Indigenous medicinal system, Uttrakhand, Kumaon & Garhwal

### Introduction

India is one of the 12 Mega-biodiversity centres of the world with two biodiversity hotspot viz, Western Ghats and Eastern Himalayas. India, being the junction of Ethiopian, Palaeartic and Oriental realms of biogeography, got rich variety of biological community 'types'. India's cultural diversity is equally remarkable – shaped largely by the modes of subsistence ranging from hunting and gathering, nomadic herding and subsistence cultivation to intensive agricultural to modern industries. Given this heterogeneity of culture, the pressure of large human and livestock population and the substantial resource demand of the modern sector, conserving India's heritage of cultural and biological diversity is a daunting task (Gadgil 1991).

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What may be termed traditional culture is more preserved now in the rural parts of our country than in the urban and more visible in the activities and thoughts of womenfolk. The relevance of the traditional culture and knowledge systems become more imperative on the face of failure of rapid industrialisation to act as panacea for all the ills of our society. Infact rapid industrialisation has produced immense problem even in the so called civilised and developed countries – problem under which humanity is succumbing and facing grave danger indeed. Thus how best can we strike a balance between industrialisation and yet preserve the ancient cultures and knowledge system?

The main characteristics of such knowledge system is their hereditary nature and evolution in the families, groups and communities. The perpetuation takes place through oral, practical or observation and imitation process. This ensures high degree of specialization but at the same time it also remain on the thresh hold of loss or extinction because loss of a line or school or a family usually means disruption of the system down the line.

The study an attempt to analyze such traditional (indigenous) knowledge systems in the region of Uttrakhand state. The hills of the Uttrakhand are still replete with examples of, local community using the indigenous (traditional) knowledge for medicines (Ilyas, 1998).

### OBJECTIVES

Survey of selected localities in Uttrakhand Himalayas to prepare an inventory of the indigenous knowledge systems prevailing since time immemorial, particularly concerning to the –

- (i) Identification and method of extraction of traditional medicines and chemicals(Natural dye) etc particularly from forest resources.
- (ii) Forms pattern and nature of diffusion or transmission inter regional as well as generation to generation – Role of family, community and caste in sustaining the system and development of skill (if any).

Whether any external influence in the development of the system

### METHODOLOGY

The study was basically field based and the analysis of the empirical data collected was also examined from other historical sources to establish its traditional nature. During the field survey an attempt was made to understand why and how certain plants are used for curing various illnesses since time immemorial? The process of producing medicine or chemical was studied.

To collect data in the field, questionnaire surveys were carried out in the selected areas/ villages of the Kumaon Division of Uttaranchal in the month of May –July,2006

### Sample:

The sample consisted of village dwellers of these villages i.e. Pubhan, Binola, Naya Singroli, Kunj, Dungri, Kanda, Silparand, Balesward, Badrinath, Joshimath Lata, Latakark and Mana village. According to plan of the study convenient random sampling technique was applied because of infeasibility to include all the people of village in the sample. The sample consisted of male and female with age range of 25 to 75 years.

### Tool:

Researchers developed Questionnaire initially it was containing 95 statements / questions but before starting the survey of this phase it was modified to eliminate redundancy of statements and make it more valid and reliable to suit the objectives and covers all aspects of the study. The questions were made in such a way to cover the historical information regarding origin, uses, process, economic and social importance in the life of people. The questionnaire covers the thrust areas of the study such as knowledge of traditional medicine.

### Data collection:

To collect the information pertaining to objectives researchers personally visited the field. The survey was conducted in few villages of Almor district in Kumaon region of Uttaranchal state. The specified villages

were Pubhan, Binola, Naya Singroli, Kunj, Dungri, Kanda, Silparand and Balesward situated in Jainti Tahsil of Lamgara Block and Badrinath, Mana village, Joshimath, Latakhar and Lata village in Garhwal region

The researchers met individually to the village dwellers, gave them questionnaire and requested to furnish the information. Initially the villagers were very hesitant to provide correct information but latter on assurance that the information provided by them would be kept confidential and would be used only for research purpose they were forth coming with the information. Due to long stay in the villages of Hills a large number of information could be collected. The various medicinal plants have been identified with their local names that the people use in his/her daily life. They also provided the information regarding their handicrafts as well as its conservation. The main occupations of villagers are agriculture and manual labour work while few of them are educated and doing jobs in public and private sector.

#### Description of villages where survey was conducted are give bellow:

**Dongri:** This village situated far away from mortar road in Jainti Tahsil of Lamgara Block is almost 75 km away from Almora. This is a small village consisted of mixed population of other backward castes and scheduled castes. The concentration of OBC is high in this village. The village has neither any doctor nor Vaidya. This village is remotely situated about 5 km away from the mortar road and to reach the road people has to use the ropeway bridge. The nearest primary health centre is located at the Tehsil which is about 10 km far away from the village. Thus due to their absence, people have shown better understanding of indigenous knowledge of medicinal plants, showing knowledge of about 35 plants. They know how to process and which part of the plant used to get relief from a particular ailment. In most of the cases, the indigenous drugs work and only in rare cases the patients are taken to nearest urban centres. Almost every individual got some knowledge of such plants, but more than 50% people appear to have vast knowledge of indigenous medicine. Out of these almost everybody has learnt it from father, grandfather and in some cases village elders indicating historical evolution of such system. The diffusion of knowledge down the line from the age is largely family and individual based and the processing of plant is monopoly of one or two families.

We don't find any documentation of these knowledge system and transfer take place orally, observation and experimentation method. However, some individual have shown certain innovation in processing of medicinal plants (see survey report). The main occupation of the villagers are agriculture, labour and some of them doing jobs in government and private sectors.

**Pubhaun:** This village situated on road side in Jainti Tahsil of Lamgara Block is far away from 70 km from Almora. This is a small village consisted of mixed population of Rajput, Brahmin and scheduled castes but the domination of Rajput is prevailing in the village. The main occupation of the people in this village is agriculture, services and especially in military service and few of them working in public and private sectors. Despite situated on the road there is neither any allopathic doctor nor vaidya. Thus due to their absence people have shown better understanding of knowledge of medicinal plants. They know various plants and use them to get relief from different ailment. They also use modern medicines because people of this village have easy access to town.

**Silpad:** This village is located approximately 6km from the mortar road and the access of the village by the people is only ropeway. The main occupation of people is agriculture, services in public and private sectors and a sizeable portion of this population working in military. This village is dominated by Thakur though other castes are in marginal size and they know the effectiveness of various plants and their use to cure several diseases by the use of specific parts of particular plant.

**Binola:** This village is situated about 5 km away from the road concentration of this village is of SC and their main occupation is agriculture and labour. They work as carpenter and very much specialized in making basket and housekeeping items. Their economy is mainly based on agriculture and produce rice, wheat, maize, pulses like gahat, urad, razma, vegetables like potatoes, tomatoes, and many others. They have natural resources of irrigation and largely depend on rain water and stored in the tank at the top of field and irrigate fields with channels from top to bottom. Other sources of irrigation are spring water stored in a small dike and canalize water through iron pipe. Several person

are working in government sectors. They are well versed in use of medicinal plants and process them to use for curing several diseases of human as well as animals. They are using indigenous knowledge for a long period which they learned through their parents/ ancestors and by imitation. There is no any doctor or vaidya within the radius of 5 km of the village.

**Kunj:** This village is 5 km away from the mortar road and people have to walk through bridge made of ropeway to reach on the road. They do not have any facility of hospital for the treatment of ill person.

**Batura:** the village is located about 3 km from the road and generally inhabited by the marginal farmers and they are largely dependent on the traditional medicine

Mana Village is located at a distance of 4 k.m form Badrinath and is last village on the Indo-Tibet border. The village is largely inhabited by Indo- Mongoloid tribe –known as Bhutiyas. The village is known for its handicraft products and indigenous medicine.

#### Results and discussion:

The aboriginals and tribal of our region have been using plants for their daily uses for food, medicine, housing and crafts etc. since time immemorial. Usually, such knowledge is largely confined to a family. The knowledge system passed on verbally and the family member acquire expertise while watching fore fathers practicing it. The villagers prepare a number of formulations from the plants. As our region is remotely situated where modern medicine is not easily available, leading to the sustenance of the system.

On the basis of the diffusion pattern we can safely confer that the such indigenous system must be prevailing for more than 150 to 200 years. Some of them got ancient roots as it can be inferred from table I & II.

**Table- 1.**

Showing the History of the Traditional knowledge system with reference to Medicinal Plants.

Range of Years from Where people acquired IKS	Frequency	Percentage
01-10	16	9.04
10-20	27	15.25
20-30	48	27.11
30-40	50	28.24
40-above	36	20.33

On the basis of acquired information about the use of medicinal plants as medicine for different diseases by the people of hills for a period more than 40 years. Those who are using these plants for the last 40 years and above in their own way constituted 20.33% of the sample and certainly they are very old in age presently. They inherited this knowledge from their ancestors.

**Table-2.**

Showing the matrix of Age levels and the sources of knowledge in terms of percentage

Sources of Knowledge	Levels of Age					Total
	25-35	35-45	45-55	55-65	65-Above	
Training	1.13	1.70	2.26	1.70	1.13	7.91
Parents/Ancestors	5.08	7.34	16.38	19.20	14.12	62.14
Imitation	2.82	6.21	8.47	7.34	5.08	29.94
Total	9.03	15.25	27.11	28.24	20.33	

The data matrix shown in the table revealed the levels of age and the sources of knowledge acquired. The table represents the percentage of

people who acquired knowledge from different sources under specified levels of age. The result may help us to infer tentative history of this knowledge. The data of selected villages shown that 28.24% people of age range 55-65 years using medicinal plants as antidotes of different diseases. The people of this age group constituted 1.70, 19.20 and 7.34 percent of the sample who acquired knowledge from training, ancestors and imitation respectively. As a whole 62.14 percent people learned through their ancestors or inherited, 7.91 percent people learned through training and 29.94 percent learned through imitation. It means before the popularity of modern medicine people were solely dependent on indigenous medicines and the knowledge passes through generation to generation. We can say that the system of using indigenous medicines has a long history with the people on the hills. However, we are unable to assign a particular date of its origin.

**Table-3**  
Showing the percentage of users and non users of traditional medicines.

Concerned people	Frequency	Percentage
Users	177	88.50
Non users	23	11.50

The information about the hill dwellers of Garhwal and Kumaon region who are living in the remote areas regarding the use of traditional medicines revealed the fact that 88.50% people use various medicinal plants as healers of different ailments whereas only 11.50% people do not use traditional medicines. The people who are using traditional medicines acquired knowledge through different sources as only 7.91% people received training to learn about this system, 62.14% people learned through their ancestors and 29.94% people learned through imitation that is a mixture of parents and accidental learning processes. They have the view that these medicinal plants have been using from that time immemorial.

The survey was able to unearth about 110 different formulations of plants used by the centuries old therapy, which were and even today used to cure about 70 different ailment mostly related to cold skin, dysentery fever cramps body ache etc.

**Table - 4**  
No. of Plants are used for curing different ailments in surveyed areas

Sr. No.	Name of Disease	No. of Plants Used **
1	Fever/ Malaria	15
2	Cough	12
3	Pneumonia	04

**Table- 6**

Table showing the Names of plants which have the properties of medicinal values.

Sr. No.	Local Name	Scientific Name	Part of Plant	Uses in disease
1	Makoya	Solanum nigrum	Fruits & leaves	Useful in lever disease, controls itching rashes of skin.
2	Van Tulsi	Origanum sanctum	Leaves	Relieves cough, blood cleansing, anti-bacterial, anti-toxin, reduces itching
3	Vajradanti	Potetillafulgens	Roots	Strengthens gums.
4	Buransh	Rhododendron arboreum	Flower	Used for heart ailments.
5	Chiraita	Swertia chirayita	Roots, leaves	Leprosy, useful in blood cleansing.
6	Van ajwain	Thymus serpyllum	Leaves & plant	Useful in kidney & eye disease.
7	Van Methi	Desmodium triflorum	Leaves & seeds	Controls diarrhea and wounds.
8	Tulsi	Ocimum sanctum	Leaves	Anti-bacterial, control malaria and skin ailments.
9	Akhrot	Walle regia	Bark & coat of fresh seeds	To strengthen gums & and teeth.
10	Reetha	Sapindus mucorossi	Fruits	Control nausea and vomiting, de-addiction from opium,
11	Bass	Febusa oridinesia	Leaves	Piles, acidity, itching and clean the uterus at the of labour.
12	Shatawari	Asparagus racemosus	Roots	Control acidity, promotes semen and milk in women
13	Ghritakumari	Aloe barbadensis	Leaves	Anti-bacterial, anti-toxic and promotes fertility.
14	Ajwaiiin	Trachyspermum	Seeds & leaves	Anti-bacterial, relieve body pain and insomnia.
15	Kilmora	Berberls aristata	Leaves	Male reproductive system, anti-toxic, skin disease, ear and eye ailments, fever.
16	Silpher	Bergenia sp.	Leaves	Reduces stomachache, kidney and gall stone
17	Bichhubooti	Urtica diota	Leaves	Pain killer used in sprain and swelling.
18	Timur	Zanthoxylum acanthopodium	Brach, fruit, leaves & seeds	Control fever, useful in dental ailment.
19	Kaffal	Myrica nagi	Bark	Useful in broken bones
20	Bathua	Chenopodium	Leaves album	Correct appetite, aids digestion, relieve gas and acidity.
21	Salam Misari	Orchis latifolia	Roots	Promotes sperm and fertility, blood-cleansing.
22	Brahmi	Centella asiatica	Leaves	Useful in mental ailment, nerve tonic
23	Dhatoora	Calotropis sp	Seeds	Reduces joint pain.
24	Apamarg	Achyranthes aspera	Leaves	Diarrhea, liver, blood cleansing.
25	Amla	Emblica officinalis	Fruits	Nausea, vomiting, kidney stones etc
26	Van Haladi	Berberis aristata	Roots & leaves	Leprosy, blood cleansing
27	Bhang	Cannabissativa	Leaves	Sleep inducer, narcotic
28	Jangali Saunf	Anethum sowa	Leaves	Infant & Child ailment
29	Kanta Chauli	Amaranthus spinosus	Roots & leaves	Anti -toxin properties.
30	Bara Gokhru	Pedaliu murex	Leaves,roots& fruits	Blood cleasing
31	Bakula	Phaseolus vulgrris	All parts, spl.fruits	Cleans Kidney
32	Belaedona	Atropa belladonna	Seeds 7 other parts	Pain, cough
33	Majeetha	Rubia cordifolia	Roots	Improves voice
34	Ram Bans	Aloe barbadensis	Leaves	Anti toxin
35	Sowa	Anethum sowa	Leaves	Heat producing, fever control anti- biotic , children ailments indication etc
36	Dawana	Artemisia vulgaris	Leaves and seeds	Digestion , foetal groth
37	Jangaligenda	Tagetus minor	Leaves & flower	Swelling, treatment of old wounds
38	Choti Katori	Solanum xanthocarpum	Fruits &seeds	Controls fever,piles, heart disease

4	Stomach Pain	10
5	Intestinal Disease	06
6	Joint Pain	05
7	Skin Disease	07
8	General Body Pain	13
9	Ear Pain	03
10	Mouth and Tooth Disease	06
11	Sexual Problems	09
12	Eye Disease	03
13	Lever Disease	07
14	Cutting and Fracture	05
15	Hair Problems	04

\*\* Some of the plants are common to some of the diseases .

**Table- 5.**  
Showing the degree of effectiveness of Traditional Medicines.

Degree of Effectiveness	Frequency	Percentage
Highly Effective	83	41.50
Moderately Effective	75	37.50
Low Effective	42	21.00

The researchers asked about the effectiveness of traditional medicine, 41.50% people have told that it is highly effective in curing the diseases like jaundice, cut, bone fracture, joint pain, skin disease etc in human being and mouth and hook disease of animals. While 37.50% have the opinion that it is moderately effective and 21.00% viewed it is low effective in the sense that it takes more time to cure the diseases.

39	Chiura	Madhuca butyracea	Fruits & seeds	Skin softner.
40	Lentane	Lantana camara	All parts	Anti tetnus & anti malarial
41	Vasaka	Justicia adhatoda (Adhatoda vasica)	All parts	Asthma, cough antibiotic
42	Micromeria	Micromeria capitillata	Leaves	Eczema, itching
43	Nagfani	Opuntia sp	Leaves	Sprain, pain in bones.
44	Chir-pine	Pinus roxburghii	Resin	headache
45	Deodar	Cidrus deodara	Leaves & roots	Diuretic, gas stomach ache.
46	Dalchini Zlanicum	Cinnamoman	Bark, Leaves	Anti biotic
47	Akenbur (Aararye)	Vakheskum thepsus	All parts	Cough chest pain
48	Parijaat	Nicteulhis Aarbostri	Leaves	Anti malarial, anti biotic
49	Nakti Brahani	Hydrocatil asiatica	Leaves	fever

Some plants have not yet been identified.

The people of specified localities told the local names of these plants which they use as medicines to cure various diseases such as Thuner, Chatkuriya, Kilmoda, Ratpattiya, Patkuari, Timore, Bichhu Ghas, Satawari etc. There are certain plants that are very common that most of the people are using. The males and females both are using medicinal plants, few people who are using it for commercial purposes and getting inadequate income.

On the basis of survey it was observed that how far traditional medicines are popular in the tarai region of Uttaranchal. The people of hills have the view that traditional medicines are highly popular because 37.85 % people viewed that every individual uses certain plants as medicine to cure some ailment. On the other hand they have very poor facility of modern medicine and use some plants as first aid such as Katuki, Hathajadi, Dolu, Chatkuria, Chipi, etc.

Result revealed that 35.03% people viewed that traditional knowledge system especially knowledge regarding the use of medicine are not as much popular. Almost every people know about some plants but not well acquainted about its effective use and hence this system is moderately popular.

There are very few people who are well acquainted with the effective use of traditional medicines for different diseases and hide their knowledge either to individual level or at family level. Hence 27.11% people have the view that traditional knowledge system could not gain its popularity and still it is not much popular among the general masses.

However the no. of people who mastered such knowledge generation to generation including vaidyas whether recognized or not, declining sharply in recent years – putting the system also endangered category and require attention for conservation. Moreover the villages where modern medicine has been available do not show any interest in preserving the system

The indigenous knowledge system can thus play significant role in sustainable use, development and conservation of the natural resources and particularly on the face of rapidly growing globalization the strengthening of the systems would be more fruitful. Indeed, the integration of indigenous knowledge with modern techniques will create potential for enterprise and sustainable development of the region

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