

# Medicinal Plants used for Fevers by the tribal people of Sonbhadra District , Uttar Pradesh, India.

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**Abstract-** An extensive survey was carried out for collection and documentation of ethno medicinal plants used to cure different Kinds of fevers by the tribal people of Sonbhadra district of Uttar Pradesh; India. In this study fourteen plant species namely, *Andrographis paniculata* , *Azadirachta indica*, *Clerodendrum serrate*, *Carica papaya*, *Dalbergia sissoo*, *Fumaria parviflora*, *Holarrhena*, *antidysenterica*, *Moringa oliefera*, *Nyctanthes arbortristis* *Oscimum basilium* , *Swertia*, *Chirata*, *Tinospora cordifolia*, *Vitex nigundo* and *Vernonia, cinerea* belonging to thirteen families which are being used for fever treatment by the tribal people of Sonbhadra have been recorded. In this investigation it has been found that *Tinospora cordifolia* have highest use value ( 0.85) and on the other hand *Vitex nigundo* have lowest use value (0.18). These plants species were enumerated alphabetically with their botanical name, common name in Hindi, habitat, parts used, use value, ethno medicinal uses in a tabulated form.

**Index Terms-** Ethno medicinal plant, Traditional healer, Tribal people, Indigenous Knowledge, Sonbhadra District.

## I. INTRODUCTION

In India the history of uses of medicinal plants goes back to 300 BC. In this year ‘Charak Samhita’, a document on herbal therapy by ‘Charak reports’ on the production of 340 herbal drugs and their uses were recorded ( Ved prakash *et.al.*, 1991, Mehra *et.al.*, 2014). These herbal medicines always attracted people due to their low cost and having minimum side effects ( Bajpai *et.al.*,2016).The traditional system of medicines are still very effective particularly in rural areas of India for the treatments of various ailments (Singh & Singh, 2009). It was reported that traditional healers use 2500 plant species while 100 species of plants serve as regular source of medicines ( Pei, 2001). According to World Health Organization (W.H.O), as many as 80% of the world’s people depend on traditional medicine for their primary health care needs (Singh *et.al.* 2010, Dubey *et.al.*2004) The Knowledge of medicinal Plants has accumulated over the course of many centuries .It has been documented in different medicinal systems such as Ayurveda, Unani and Siddha (Chopra *et.al.* 1956, Jain 1965 , Kirtikar and Basu 1999, Nadkarni 1976).

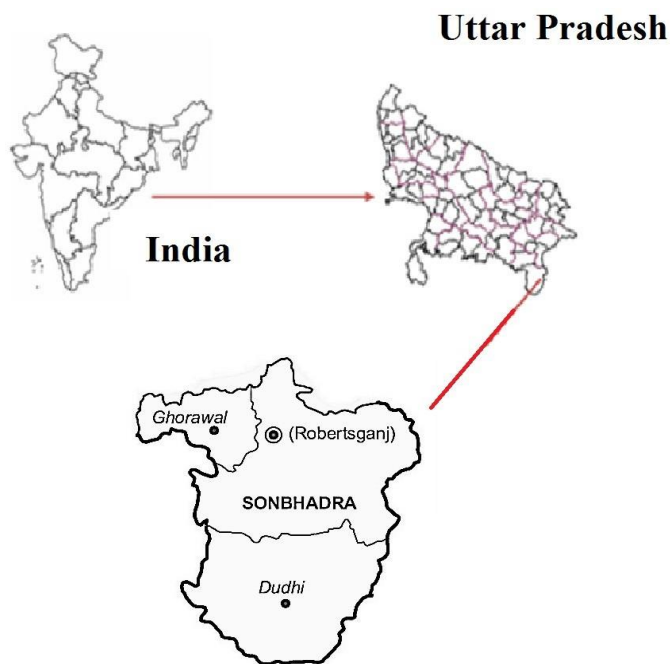
In India currently the work on Ethnobotany has been done by many workers such as Bisht *et.al.* (2013) Bisht & Adhikari (2018), Dastur (1996), Gowthani *et.ail* (2021),Jain (1991), Jitu (2011) Jain *et.al* (2018), Kanika Chauhan (2020), Kushwaha *et.al.* (2018), kumar *et. al.* (2021), Maurya *et. al.* (2015), Mehra *et.al.* (2014), Nigam and Kumar (2005), Patil (2005), Narayan and Singh (2018), Ojha *et.al.* (2020),Rajesh (2018), Radha *et.al.*(2020), Radha *et.al.* (2021) Raizada (1976) Sharma *et.al.*(2017), Singh and Dubey (2012) ,Singh and kumar (2007), Singhal(2010), Singh *et.al.* (2017), Singh *et.al.* (2002), Singh *et.al.* (2012), Singh *et.al.* (2017), Sharma *et.al.*(2017), Singh and Singh (2009), Srivastava and Shukla (2018), Singh and Shukla(2017) Thakur and Wakes (2018), Upadhyay and Singh (2005), Ved Prakash *et.al.*, (1991), Wani *et.al.* (2016) etc. in different study areas. However there are several pockets where an extensive survey for listing of valuable drugs are required

.In present study an attempt has been made to document the traditional medical system to ethnic group of the area so that the knowledge of thousands years of evolution could be saved for future generations.

## II. MATERIALS AND METHODS

**1.1 Description of Study Area :-** The Area under investigation of ethno medicinal plant responsible for fever treatment falls under the district of Sonbhadra, Uttar Pradesh, India and came into existence in March 4, 1989 after the division of district Mirzapur. The Sonbhadra district is situated in the vindhyan plateau lying between  $23^{\circ} 45'$  to  $24^{\circ}34'$  N latitude and  $82^{\circ}45'$  to  $83^{\circ}23'$  E longitude covering an area of 6788  $\text{Km}^2$ .

It is bounded by Mirzapur district in the north- west and Chandauli district of Uttar Pradesh in the north, Kamoor and Rohats district of Bihar in the northeast, Garhawa district of Jharkhand state in the east, Korea and Sarguja district of Chhattisgarh state in the South and Singrauli district of Madhya Pradesh in the west (Fig. : 1). The elevation above the mean Sea level ranges between 315m to 485m<sup>2</sup>. Climatically the area of Sonbhadra is dry and tropical type. The summer temperature ranges between 22.8 to 42<sup>0</sup> C and winter between 8 to 17.5<sup>0</sup>C The temperature in summer may reach upto 45<sup>0</sup>C and in winter below 5<sup>0</sup>C (upto 2<sup>0</sup>C). The average of annual rainfall is 1065mm. The forest of Sobhadra district is tropical and dry deciduous types covering an area of 2447.  $\text{Km}^2$  (Where dense forest area is 1078  $\text{Km}^2$  and Open forest area is 1369  $\text{Km}^2$ ) The main tribal inhabitants of this area are Agaria, Gond, Kharwar, Chero, Panika etc. (Singh et.al. 2002). The tribal people of this district primarily depends on ethno medicinal plants of their surrounding in order to cure different types of fevers, such as Malaria, Typhoid, Chronic fever and so on. This traditional knowledge about medicinal plants and their uses are transmitted orally from one generation to another generation by ancestors respectively.



**Fig. 1 Map of Sonbhadra District of Uttar Pradesh India**

### **1.2 Data Collection:-**

For the purpose of collection and documentation of ethno medicinal plants of Sonbhadra district related to fever treatment an extensive field survey were done from March 2021 to June 2021 as most of the plants were in the flowering stage and were easy to identify. During field trips Informational were collected through pretested questionnaire in the format given in the supplementary information, direct observations, discussion and interview with traditional healers, knowledgeable person, local Vaidyas and old women's of the tribal society. It was found that the majority of respondent were between 61 to 75 years old. The plants doubtful to identify were checked with their authentic specimen lodge at the herbarium of *National Botanical Research Institute, Lucknow* as well as *Botanical survey of India, Prayagraj*. During this process offenly the help of experts were also taken. The medicinal plants species were collected for the preparation of herbaria. The methods of collection of voucher specimens, their

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preparation of Herbarium and technique for the collection of ethno medical information was taken from eminent works of experts (Jain and Rao, 1976, Rao 1989). The collected plants specimen were botanically identified with the help of Taxonomic literature and floras ( Duthie, 1929, Hooker, 1872 -1897 )The collected plants species were dried and mounted on herbarium sheets with labeled information describing when and how plants samples were collected.

**1.3 Use value:-** The importance of plants species was calculated by using following formula:-  
 $UV = \sum U_i / n$

Where 'U<sub>i</sub>' represents the number of usage reports mentioned by each informant for a particular plants species and 'n' is total number of informants. If there are many use reports for a plant, the use value will be high and if there are few reports the use values will be low.

**2. Observation :-**

In the present study fourteen medicinal plants were surveyed responsible for treatment of different types of fever ( Fig.: 2). The botanical name of these ethno medicinal plant, family, common name in Hindi, habitat, parts used, use value and ethno medicinal use is given below in a tabulated from ( Table: 1)

**Table :1 List of Ethno medicinal Plants used to cure different types of fevers by the tribal people of Sonbhadra District, U.P. India.**

S.No	Botanical Name, Family, Common name (Hindi), Habit	Part Used	Use Value (UV)	Ethno Medicinal uses
1.	<i>Andrographis paniculata</i> (Burm.f) Nees F- Acanthaceae CN- Kalmegh H- Herb	Whole Plant	0.75	Decoction of whole plant along with <i>Tinospora cordifolia</i> Stem, <i>Zingiber Officinalae</i> and <i>Piper nigrum</i> overcome to Malaria.
2.	<i>Azardirachta indica</i> (juss) F- Meliaceae CN- Neem H- Tree	Bark	0.32	Decoction of Bark mixed with 500mg <i>Cinnamomum zylanicum</i> is used to destroy general as well as periodic fever
3.	<i>Clerodendrum serrate</i> (L) moon F- Verbenaceae CN- Bharangi H- Shrub	Leaves	0.20	Decoction of leaves are used for treatment of Malaria fever
4.	<i>Carica Papaya</i> (L) F- Cariaceae CN- Papeeta H- Tree	Leaves	0.56	Decoction of leaves mixed with water is taken to cure dengue fever
5.	<i>Dalbegia sisso</i> ( Roxb. Ex.Dc) F- Fabaceae CN- Sheesham H- Tree	Bark	0.48	Small amount of bark boiled with milk is taken to overcome all kinds of fever.
6.	<i>Fumaria parviflora</i> (Lamk) F – Fumariaceae CN- Pittapapara H- Herbs	Whole plant	0.65	Decoction of whole plant mixed with <i>Zingiber Officinalae</i> is taken elevate all kinds of fever.

7.	<i>Holarrhena antidysenterica</i> (Roth.) A. Dc F- Apocynaceae CN- Kuraiya H- Tree	Bark	0.49	Decoction of bark is taken to destroy Malaria, Typhoid Viral and all types of fevers
8.	<i>Moringa oleifera</i> (Lam.) F- Moringaceae CN- Sahijan H- Tree	Seeds	0.46	Decoction of seeds are taken to overcome typhoid fever
9.	<i>Nyctanthes arbortristis</i> (L.) F- Oleaceae CN- Harsingar H- Tree	Leaves	0.52	Expressed Juice of leaves mixed with <i>Piper nigrum</i> is taken to destroy Malaria fever.
10.	<i>Oscimum basilium</i> (L) F- Lamiaceae CN- Ram Tulsi H- Herbs	Leaves	0.34	Decoction of leaves along with <i>Zinger Officinalae</i> , <i>Piper nigrum</i> , <i>Piper longum</i> mixed with sugarcandy taken to destroy cold fever and Coryza.
11.	<i>Swertia Chirata</i> (Roxb. Ex. Flem) F- Gentianaceae CN- Chirayata H- Herbs	Whole Plant	0.69	Decoction of whole plants stem mixed with <i>Piper nigrum</i> , <i>Piper longum</i> and <i>Zingibar Officinalae</i> is taken to overcome malaria and all types of fever.
12.	<i>Tinospora cordifolia</i> (Willd) Hook f. Thomas F- Menispermaceae CN- Gurich or Giloy H- Tuning Shurb	(Stem	0.85	Decoction of stem mixed with <i>Piper longum</i> is taken with honey to destroy chronic fever. Similarly decoction of stem with <i>Piper nigrum</i> , <i>Piper longum</i> , <i>Zingibar Officinalae</i> and <i>Swertia Chirata</i> overcome all types of fevers.
13.	<i>Vitex nigundo</i> F- Verbinaceae CN- Nirgundi H- Tree	Leaves	0.28	Decoction of leaves with <i>Piper nirgrum</i> is taken to overcome Coryza
14.	<i>Vernonia cinerea</i> (Less) F- Compositae CN- Sahadevi H- Herb	Whole Plant	0.75	Expressed juice of whole plant or decoction of whole plant is taken to cure all types of fever

Where F= Family, CN= Common name, H = Habit



**(A) *Andrographis  
paniculata***



**(B) *Azadirachta  
indica***



**(C) *Clerodendrum  
serrate***



**(D) *Carica Papaya***



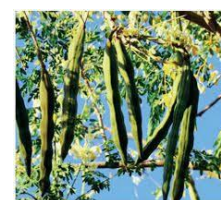
(E) *Dalbergia sissoo*



(F) *Fumaria parviflora*



(G) *Holarrhena antidysenterica*



(H) *Moringa oleifera*



(I) *Nyctanthes arbortristis*



(L) *Tinospora cordifolia*



(M) *Vitex nigundo*

(N) *Vernonia cinerea*

**Fig. 2 Photograph of Ethno medicinal plant used for treatment of different types of fevers by the tribal people of Sonbhadra district, Uttar Pradesh, India**

### 3. Results and Conclusion:-

A total of fourteen plants species represented by thirteen families used to cure different types of fevers by the tribal people of Sonbhadra district, have been recorded. A number of tribal's are using these ethon medicinal plants effectively and extensively. But it is necessary to do clinical studies of these plants for proper utilization and understanding . In this investigation it was recorded that the *Tinospora Cordifolia* represents highest use value(0.85) and *vitex nigundo* represents lowest use value (0.18) respectively.

Due to effect modern culture and charm of Allopathic drugs the indigenous traditional knowledge of Ethno medicinal plants and their practices are gradually disappearing day by day among young generation. Due to lack of deep interest regarding medicinal plants among youth generations of tribal people and their tendency to migrate cities for lucrict Job. The knowledge of ethno medicinal flora is decreasing very fast in these days from tribal society. Hence it is necessary to do documentation of indigenous traditional knowledge of useful medicinal plants and their therapeutic uses for further generations before lasting forever from the tribal communities.

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