e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:09/September-2022 Impact Factor- 6.752 www.irjmets.com

ETHNO-MEDICINAL PLANT RESOURCES USED FOR FEVER FROM BHOR TALUKA PUNE DISTRICT, MAHARASHTRA STATE

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ABSTRACT

Ethno-medico botanical survey was carried out to collect the information on the use of some antipyretic activity of plants used by local people of Bhor taluka, Pune District, A total **45** of plant species are used to cure fever and it was belonging to **28** families and **42** genera have been recorded through structured questionnaires in consultations with the community practitioners. For curing fever the use of above ground plant parts was higher (73.33%) than the underground plant parts(26.66%) Out of 45 plants species the above ground plant parts, leaf was used in the majority of cases (20 species), followed by whole plant part (3 species), fruit (5 species), flower (5 species), root (8 species), and rhizome (4 species), were also found to be in use by the local people for antipyretic activity of plants. The present paper implies the potential of the traditional knowledge for the mankind. Some of the interesting plants is Aleuritopteris farinose (Pteridophyte plant).

Keywords: Local People, Bhor Taluka, Traditional Knowledge.

I. INTRODUCTION

Fever is associated with liver cell damage, viral infection, cold, cough etc. in our body. The general symptoms of fever are sweating, chills and shivering ,headache ,muscle ache, loss of appetite, irritability, dehydration and general weakness In nature there is so many types of plants which has some antipyretic activity are available. It is believed that the herbal medicine is the best one because it has no side effect in our body. Bhor is one of the remote and hilly taluka of Pune District Maharashtra & is also equally significant so far as the medicinal plant research is concerned. Many traditional formulating medicines are available here for treating different types of diseases like Hepatitis, dysentery diabetes etc. from generation after generation.

Ethno-botanical research can provide a wealth of information regarding both past and present relationship between plants and traditional societies. In this context, Bhor region is selected for ethno-medico-botanical studies. The area is hilly and different communities possess a valuable traditional knowledge which was not documented by earlier workers. Present chapter deals with topography, climate, soils, vegetation, population, field survey for ethno-medico-data collection among local /tribal people and use of different format questioneries for human and animal medicines, herbarium preparation and deposition data of AHMA are mentioned.

Pune district is located between 17.5° to 19.2° North and 73.2° to 75.1° East. Pune district has 14 talukasThese are Junnar, Ambegaon, Rajgurunagar, Maval, Mulshi, Velhe, Bhor, Haveli , Purandar, Pune City , Indapur, Daund, Baramati and Shirur. Population of Pune district is **7,224,224** as per census of 2001. Out of which Junnar, Rajgurunagr, Ambegaon, Velhe, Maval, Mulshi, Bhor, Hevali are situated in Western Ghat area. Tribal population in above area is Mahadeokoli, Thakur and Katkari.

Bhor area was famous in earlier period as a `Sansthan of Pant Sachiv' surrounded by many historical forts - Rajgad, Vichitragad, Rayreshwar and Rohideshwar. It is well known that Chhatrapati Shivaji Maharaj resided in these forts for longer time. Rohideshwar temple where young Shivajiraje took oath of swarajya. This area was known for Peshva Sansthan and Pant Sachiv Raja Raghunathrao for his remarkable work on agricultural development and first parliamentary rule in Maharashtra.

Bhor taluka is situated in hilly and remote western ghat region, which covers an area of **892.0** Sq. Km. It lies 54 km south of Pune and between **18 º** and **18º.45'** N latitude and **73 º -73º15'** E longitude. Elevation of Bhor from mean sea level is591.43 meters. The major rivers flowing in the taluka are Nira, Velvendi, Gunjavani and Shivganga from west to east. Three major dams are constructed like Bhatghar ,Nira-devghar and Gunjavani for the irrigation facilities.

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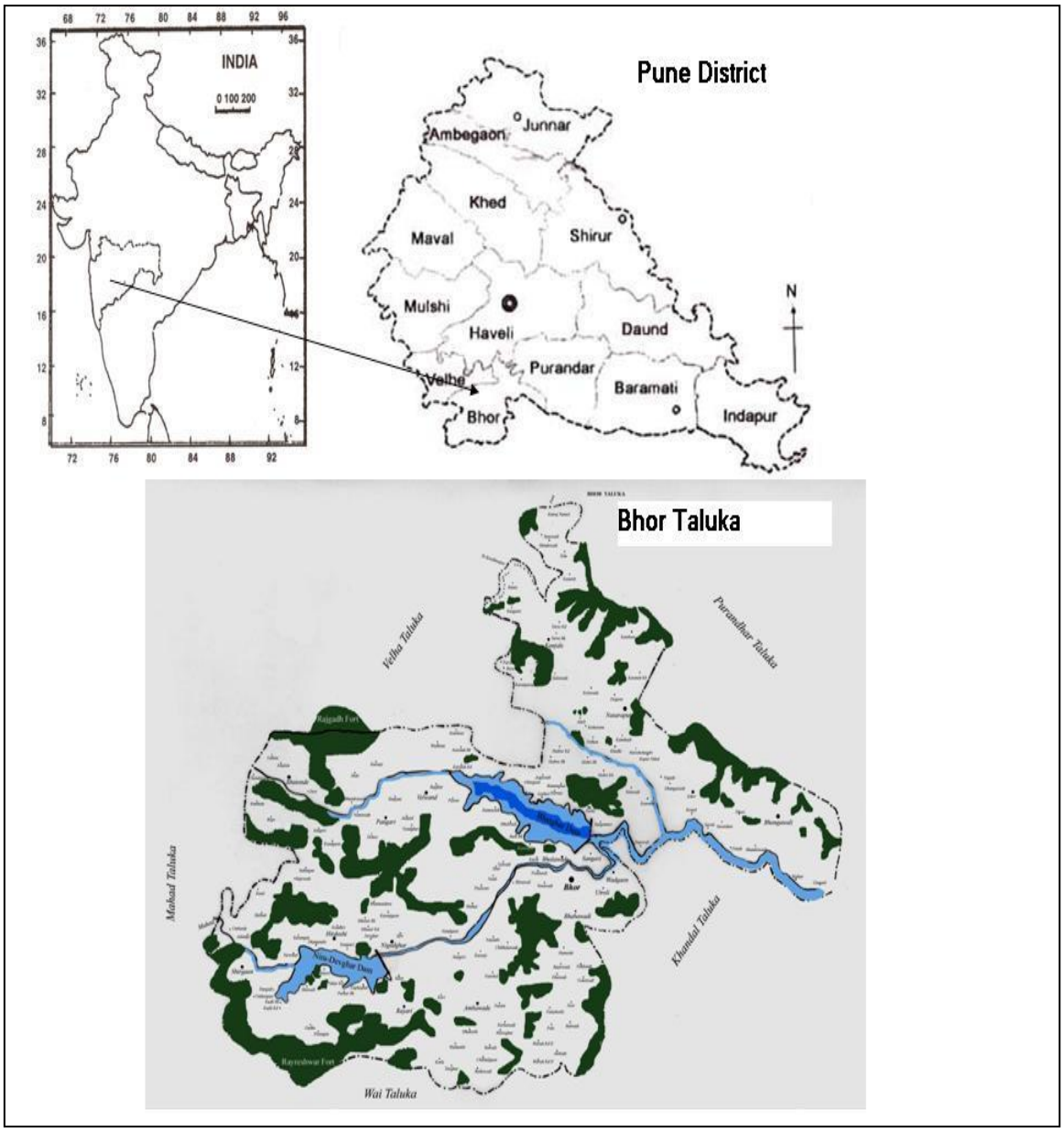
The population of Bhor taluka is belongs to farming community, farm laborers and forest laborers. Traditional farming system is still in practice in this region (Patil and Kulkarni, 2010).Farmers from this area grown traditional rice varieties. Kolamba has early maturity and less water requirement. Patanihas drought resistanceDue to civilization and development and improvement , their traditional knowledge on medicinal plants is going to be extinct. Some of local communities such as Mahadeo koli, nabi Maratha ,Maratha Deshmukh,Sonar ,Sutar, Koli ,Mali Lohar Bhoi. Katkari Dhanga residing in remote and hilly area of Bhor taluka .These inhabitants are inhabited in 80 villages of Bhor taluka Pune districts. Many of them still depend on medicinal plants for the treatment of different ailments. But with the modern the works related to the medicinal plants of Bhor Region, Maharashtra are ethno medicinal uses of plants by different lower caste communities of Bhor Pune district . Diversity and conservation of medicinal plants Environment ethics in the culture Traditional use of medicinal plants, Some observations on the status of medicinal plants Economic development Ethnobotany of) with special reference to folk medicine and, A few Ethno- gynaecological records from the state of Assam' (Gogoi et al., 1979) etc. Comparatively very less attention has been given by the ethno botanists for exploring the ethno-medicinal resources of the Bhor region This survey was done to explore more about the diversity of valuable ethno-medicinal plants of this remote and hilly area.

Map of Maharashtra, Pune & Bhor



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It has 185 villages and total population is **1, 71,719**. Out of this scheduled cast and scheduled tribe population is **10,917 (7576+3341).**This region is populated with Dhangar, Kunabi, Mahadeokoli, Katkari, Carpenters, Blacksmiths, Goldsmiths, Barbers and Bhois, etc. The census data (2001) of the area is as below

II. MATERIALS AND METHODS

The field survey was carried out during 2004 to 2010 covering all seasons to collect information on the plants having antipyretic activity used by the local people inhabited villages. Plants have been collected in their flowering and fruiting stage as far as possible from the natural habitat. While collecting the individual plant species a thorough observation have been made regarding the location, natural habitat, distribution pattern, nature of roots, tubers, bulbs or rhizomes, etc. Methodologies as suggested by earlier Ethnobotanist have been followed using collection of information on ethno-medico-botanical aspects. The information about the antipyretic plants, have been gathered from the village old men, medicine man, even local men, women and cultivators using semi-structured questionnaires. Data on each plant have been recorded on their botanical name, family, local name, habit habitat part used local use and administration utilized by the local people for antipyretic effect.

Specimens were pressed by spraying 10% formaldehyde. Succulent, bulbous and rhizomatous plants were boiled till the plant turned yellow and pressed properly. Dried specimens were poisoned properly with a saturated solution of $HGCl_2$ dissolved in absolute alcohol and mounted with fish glue on standard (42 X 28 cm). Field data with collection number, locality, short description, vernacular name, collector's name were transferred from the field notebook to printed level on the right hand corner of the herbarium sheet for ready identification. The collected plants were identified by consulting a no. of Floras especially University herbarium sheets collection etc. One each set of identified herbarium sheets have been deposited at Agharkar Herbarium of Maharashtra Association Pune, (AHMA) Maharashtra..

LOCAL HERBALISTS AND INFORMANTS FROM BHOR TALUKA




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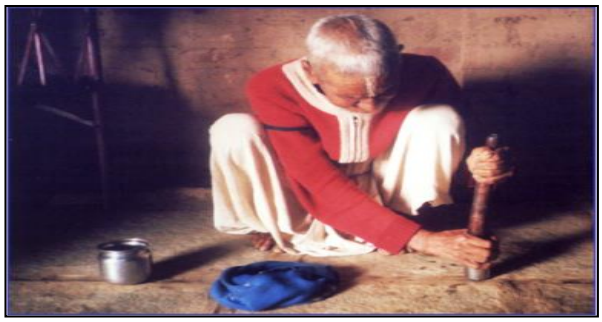

Ethno-Medicinal Plants From Bhor


Pogostemon benghalensis (Burm.f.) O. Ktze


Solanum anguivi Lam.


Piper betle L.


Ocimum americanum L.


Ricinus communis


Bauhinia racemosa


Justicia adhatoda L


Caesalpinia bonduc (L.) Roxb


Tinospora cordifolia (Wild) Miers.

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Table 1: Enumeration of Ethno medicinal plant species for Fever

Botanical Name	Local Name	Family Name	Part used	Local use	Habits	Mode of Administration
Solanum anguivi Lam.	Chicharati / Ran wange	Solanaceae	fruit	Juice	Herb	A half cup of decoction is given twice a day for 3 /4 days. till cure.
Azadirachta indica A.Juss	Kadunimb	Meliaceae	Leaf	Juice	Tree	3 /4 tsp leaf juice with cup of water is given twice a day for 3 days
Aleuritopteris farinose (Forsk)Fee.	Necha	Sinopteridaceae	Leaf	Decoction	Herbs	Half cup leaf decoction is given once a day for3 days.
Canna indica L.	Kardal	Cannaceae	Rhizome	Juice	Herb	2/3 tsp paste with cup of water is given twice a day for 2 /3 days.till cure.
Cassia fistula L	Bahva	Caesalpinaceae	Flower	Decoction	Tree	20 ml decoction with honey is given twice a day for 2/ 3days.
Curcuma longa L	Halad	Zingiberaceae	Rhizome	Juice	Herb	10/15 ml juice with jaggey is given twice a day for 2/3days.
Cuscuta reflexa Roxb	Amarval	Cuscuticeae	Whole Plant	Decoction	Climber	15/20 ml decoction twice a day for 3 days.
Cyperus rotundus L	Nagarmot ha	Cyperaceae	Rhizome	Exract	herb	10 15 ml fresh extract is given twice a day fo3 days to cure fever
Eclipta prostrate Roxb	Maka	Astraceae	Leaf	Juice	Herb	10 15 ml leaf juice with 2 tsp honey given twice a day for 3 days. tocure fever
Helianthus annus L	Suryaful	Asteraceae	Leaf &Flower	Decoction	Herb	15 /20 ml decoction with 2 tsp honey is given twice a day for 3 days.
Atlantia	Ranlimbu	Rutaceae	Leaf/frui	Juice	Shrub	Two tsp leaf and

racemosa Wt.			t			fruit juiceis given twice a day for 3 /4 days.
Momordica charantia L.	Karle	Cucurbitaceae	Leaf	Juice	Climber	10/15 ml leaf juice with 2 tsp honey is given twice a day for 3 days.
Ocimum americanum L.	Kalitulas	Labiateae	Leaf	Juice	Herb	2/3 tsp leaf juice with 3 tsp honey is given twice a day for 3 /4 days.
Ocimum gratissimum L.	Ran tulas	Labiateae	Leaf	Juice	Herb	2/3 tsp leaf juice with 3 tsp honey is given twice a day for 3 /4 days.
Ocimum sactum L	Tulas	Labiateae	Leaf	Juice	Herb	2/3 tsp leaf juice with 3 tsp honey is given twice a day for 3 /4 days.
Piper betle L.	Khauche Pan	Piperaceae	Leaf	Juice	Climber	10 /15 ml leaf juice with 3 tsp honey is given twice a day for3 days.
Tinospora cordifolia (Wild) Miers.	Gulvel	Menisprnaceae	Whole plant	Decoction	Climber	20 ml decoction with 3 tsp honey is given twice a day for 4 days
Zingiber officinale Rosc	Ale/Adra k	Zingiberaceae	Rhizome	Juice	Herb	3 tsp fresh rhizome juice with 3 tsp honey is given twice a day for 3 days.
Wattakaka volubilis (L. f.) Stapf.	Garudvel	Asclepidaceae	Root	Juice	Climber	Two/ three tsp root juice with two tsp honey is given twice a day for 3 days.
Celastrus paniculatus Willd	Karat kanguni	Celastraceae	Root/ Leaf	Juice Decoction	cilmber	3 tsp root juice / cup of decoction with 3 tsp honey is given twice a day for 4 days.
Holarrhena pubescens(Buch: Ham)Wall ex G. Don.	Kuda	Apocynaceae	Root	Decoction	Shrub	Half cup root decoction is given twice a day for 3 days.

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Solanum anguivi Lam.	Chicharati	Solanaceae	Fruit	decoction	herb	Half cup decoction is given twice a day for 3 days. to cure fever
Pogostemon benghalensis (Burm.f.) O. Ktze	Phangli	Labiateae	Leaf	Juice	Herb	Half cup leaf juice is given twice a day for 4 days.
Trichosanthes tricuspidata Lour.	Kaundal	Cucurbitaceae	Fruit	Paste	climber	2 3 tsp paste is given twice a day for 3 days.to cure fever.
Wrightia tinctoria R. Br.	Kala kuda	Apocynaceae	Stem/Root/	Juice/ Decoction	Small tree	30 ml juice /decoction (Wrigatia stem+Pogostemon +Wattaca) mixture is given twice a day for 3 days.
Musa paradisiacal L.	Keli	Musaceae	Rhizome / Stem	Juice	Stout Herb	Juice is rubbed on body to reduce body temp. in fever
Thevetia nerifolia Juss	Pivali Kaner	Apocynaceae	Fruit	Decoction	Herb	25 ml fruit decoction is given twice a day for3 /4 days.
Nyctanthes arbort ristis Linn	Parijatak	Oleaceae	Leaf	Juice	Tree	25/30 ml fresh juice is given twice a day for3 days to chronic fever.
Achyranthus aspera L. var aspera	Aghada	Ameranthaceae	Whole plant	Juice	Herb	Half cup leaf juice is given twice a day for 2 /3 days
Butea monosperma (Lamk) Taub	Palas	Fabaceae	Flower	powder	Tree	Two tsp flower powder is given twice a day for 3 days.
Luffa acutangula (L.) Roxb	Dodaka	Cucurbitaceae	Leaf	Juice	Climber	Two tsp leaf juice is given twice a day for3 days.
Ocimum basilicum L.	Sabja	Lamiaceae	Leaf	juice	Herb	Leaf juice rubbed on body ,3 gm seed soak in 50 ml water given twice a day fofr3 days.
Cynodon	Harali	poaceae	whole	Juice	Herb	Two tsp juice is

dactylon (L.) Pers.			plant			given thrice a day for 3 days.
Hibiscus rosa:sinensis L	Jaswand	Malvaceae	Fjower	Juice	Shrub	Two tsp flower juice is given thrice a day for 3 days.
Caesalpinia bonduc (L.) Roxb.	Saagargot a	Caesalpinaceae	Seed	Powder	Climber	Two tsp seed powder is given along with a glass of water twice a day for 3 days.
Artemisia nilagirica (Cl.) Pamp.	Dhor davana	Astraceae	Leaf	Juice	Shrub	Two tsp leaf juice with one tsp Phangali juice is given twice a day for 3 days.
Ficus racemosa L.	Umber	Moraceae	Root	Juice	Tree	2 cup of juice is given twice a day for 3 /4 gays
Justicia adhatoda L	Adulasa	Acanthaceae	Leaf	Decoction	Shrub	Half cup of decoction with 3 tsp honey is given twice a day for3 days.
Terminalia chebula Retz.	Hirda	Combretaceae	Fruit	Podwer	Tree	One large tsp with a glass of water is given twice a day for3 days.
Pongamia pinnata (L.) Pierre	Karanj	Fabaceae	Leaf	Juice	Tree	Two tsp leaf juice with 2 tsp sugar is given twice a day for3 days.
Vitex negundo L.	Hirgudi	Verbenaceae	Leaf	Juice	Shrubs	Two tsp leaf juice is given twice a day for3 /4
Clerodendrum serratum (L.) Moon.	Bharangi	Verbenaceae	Root	Decoction	Shrub	The root mixture of (Bharangi+Pangar a+Phagli+Garudvei boiled in 250ml water)cool it 50 ml decoction given twice a day for 2/ 3days.
Ricinus communis L. Erand.	Erand	Euphorbiaceae	Leaf	Juice	Shrubs	Two tsp leaf juice with pinch of turmeric powder and 50 ml cow

						milk is given twice a day for 3 days.
Bauhinia racemosa Lamk	Kanchan	Caesalpinaceae	Laef	Juice	tree	Two tsp leaf juice with 2 tsp honey is given twice a day for 3 days.
Celastrus paniculatus Willd.	Karat kaguni	Celastraceae	Root Leaf	Juice Decoction	Climber	Three tsp root juice or half cup leaf decoction is given twice a day for 3 days.
Andrographis paniculata Nees	kalmegh	Acanthaceae	Whole plant	juice	Herb	Three tsp leaf juice wirh two tsp honey is given twice a day for3 days.

III. RESULTS AND DISCUSSION

The present study reveals the great diversity of antipyretic drug plants area vailable in large scale in Bhor Taluka of Pune District and their uses for human health care. of human and livestock. It has been found that the use of above ground plant parts was higher (73.33%) than the underground plant (26.66%) parts.

In present paper reported 45 plants species belong to 28 families. In present investigation out of 45 antipyretic plants that are collected from different part of Bhor region, the highest number of plants are used from the family Lamiaceae (4), Apocynaceae(3) ,Cucurbitaceae, , Asteraceae, Caesalpinaceae, Acanthaceaee Caesalpinaceae.,Asteraceae. Two species each from the families Solanaceae, Poaceae, Acanthaceae, Combretaceae, Verbenaceae and Cucurbitaceae Rest of the families contributed either 1 or single species. Out of 45 plants species the above ground plant parts leaf was used in the majority of cases (20 species), followed by whole plant part (3), fruit (5), flower (5), root (8), and rhizome (4), were also found to be in use by the local people for antipyretic activity plants. The majority of plants are herbs (19 species), Climbers (10), Trees (9),and shrubs (7) are used for antipyretic plants The formulation of herbal drug is used in form of juice ,decoction ,powder, paste, and extract. The present paper implies the potential of the traditional knowledge for the mankind. Some of the interesting plants is Aleuritopteris farinose (Pteridophyte plant) special type of plant used to cure fever which was not reported earlier

IV. CONCLUSION

There is urgent needs to collect and conserve traditional medicinal information from hilly and remote region of Bhor taluka due developmental activity The study of medicinal plants encompasses survey, collection of data and observation and utilization. The study is based on common medicinal plants which are easily found in the area. The survey was conducted in selected **30** villages**26** informants (Herbal practitioners) which is nearest to Bhor from elder people of both men and women, village chief herbal, knowledgeable men, and headman. It is also observed that some herbalists grow medicinal plants in the kitchen garden due to easy access of plant for preparation of herbal drug to prepare drug. (Kamblle and Kullkarni, 2010) Also taking a sample for detailed interviews was conducted with herbal specialist in the rural areas. At the time of survey rural people shared his valuable information about the medicinal plants. Detail information was collected on the basis of health, social, economic, and cultural aspects of the plants. Generally for the extraction of chemical constituent from the plants four methods are used. The extract isolated from different organs and the tissue of medicinal plants these method are such as crushing, decoction, juice, extract methods.

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