Exploration of Ethnomedicinal Plants Used by Tribal Communities in Mahurgad Forest Area from Nanded District

M.N. Bokhad[1], M.S. Wankhade[2], A. S. Nale[3]
[1,3]*Department Botany, Government Vidarbha Institute of Science & Humanities, Amravati. Maharashtra,444604*
[2]*Department of Botany, Sunderrao Solanke Mahavidyalaya, Majalgaon, Maharashtra*

Abstract **- In the present investigation ethnobotanical survey was conducted in the tribal localities of Gondkheda, Kolamkheda, Gondwadi, Pardi, Wai, Malkaguda, Ramanagar, Hadsani, Mandva , Kasarpet of Mahur tahasil, district Nanded. In this area tribals have been using hundreds of plants for curing different ailments but the younger generation has now developed a tendency to rely upon the modern medicine and less importance is being given to their traditional medicine. The exploration has documented 41 medicinal plants belonging to 22 families used against various diseases by rural population in different rural and tribals communities in Mahurgad forest areas of Nanded District. The different plant parts like stem, leaves, fruit, flower, bark, root, seed and whole plants were used by the tribal communities.**

Index Terms **- Ethnobotanical plants, tribal communities, Mahurgad forest.**

INTRODUCTION

India is one of the twelve mega-biodiversity countries of the world having rich vegetation with a wide variety of plants with medicinal value. Traditional remedies are part of the cultural and religious life of the tribal (Bodele, and Shahare, 2015). It had earlier estimated that the usage of traditional medicine for primary healthcare in developing countries is 80% and most of which involve the use of plant extracts (Kumadoh and Ofori-Kwakye, 2017). This is an indication that herbal medicine is important in primary health care provision in developing countries like India. The oral tradition plays very important role to pass the traditional knowledge from generation to generation, Ethnomedicine refers to the study of traditional medical practice which is concerned with the cultural interpretation of health, diseases and illness and also addresses the healthcare seeking process and healing practices. The practice of ethnomedicine is a complex multi-disciplinary system constituting the use of plants, spirituality and the natural environment and has been the source of healing for people for millennia (Pramanik, 2018). Ethnobotany can be defined as the total natural and traditional relationship and interactions between man and his surrounding local environment (Ghorbani, *et.al.,* 2006). Many herbal remedies individually or in combination with formulation such as leaf powder, pastes, decoration, etc. have been recommended for various medical treatises for different diseases. Ethnobotanical studies based largely on qualitative methods and had all too often been just academic exercises or have served only external interests, with the results of benefiting neither local people nor conservation (Kumar, *et.al*, 2021).

The Mahur forest of Nanded district of Maharashtra has been widely acknowledged for medicinal plants. The tribal and rural population of Mahur taluka is composed of different communities. The principal tribes in Mahur are Andh, Kolam, Naikede, Gond and Pradhan. Tribal people fulfill their needs of plant medicines form nearby forests for curing different ailments. The valuable indigenous knowledge about plants of this area is an important Indian heritage. Geographically the Mahur taluka is situated between 190 49`to190 83` North latitude and 770 91` to 770 55` East longitude. The total geographical area of taluka is 52160 hectares of which 14397.39 hectares area covered with forest and 37762.61 hectares are non-forested area. 15.5 % is inhibited by tribal population of aborigines like Andh, Kolam, Gond, Naikede and Pradhan (Kanthale and Biradar, 2012). Tribal are good

at knowledge of herbal wealth and related vegetation in the immediate vicinity. The region is still ethnobotanically under exploration. The present investigation was carried out to collect the information regarding ethnobotanical values from the tribal of Mahur Taluka of Nanded District, Maharashtra.

MATERIAL AND METHODS

1. Study area

The ethnobotanical survey was conducted in the tribal localities of Gondkheda, Kolamkheda, Gondwadi, Pardi, Wai, Malkaguda, Ramanagar, Hadsani, Mandva, Kasarpet of Mahur tehasil district Nanded. The study areas, based on the tribal population of aborigines like Andh, Kolam, Gond, Naikede and Pradhan in the tehsil.

2. Ethnobotanical Survey

The ethnobotanical survey was conducted during 2019-20 in the tribal localities of Mahur tehsil of Nanded district. The ethnobotanical information in present study was obtained through the method such as field studies, personal interview and literature survey etc. (Kulkarni and Sontakke, 2020). Questionnaire was prepared for the collection of data in the study area through personal interview with the tribal communities. The medicinal plants were collected, identified according to their external morphology, habitat and floral characteristics by using standard floras (Naik, 1998; Yadav, and Sardesai, 2002). The data was recorded in table format.

RESULTS AND DISCUSSIONS

The tribal medicine has been considered as mother of indigenous system of medicines. It is reported that tribal communities in this area have been using hundreds of plants for curing different ailments but the younger generation has now developed a tendency to rely upon the modern medicine and less importance is being given to their traditional medicine. This gross negligence may have a drastic impact on the existence of many important plant species and their usefulness (Biradar, and Ghorband, 2010).

The present investigation has brought to light 41 medicinal plants belonging to 22 families used against various diseases by peoples in different rural and tribals communities in Mahurgad forest areas of Nanded District. According to plant habits out of 41 plants 54% were trees, 24%Shrub, 20% herbs and 2% were climbers. The different plant parts like stem, leaves, fruit, flower, bark, root, seed and whole plants were used by the tribal communities. The plants were used again different ailments i.e. Heart problem, hair problem, dental problem, respiratory problems skin problems, diarrhea, diabetes, malaria, and jaundice. The data was compared with the published literature and it was found that many of the usages listed were not recorded.

Previously 25 plants were recoded from the Mahur forest ranges and they are used by tribal people in formulation of 32 different ethnomedicinal preparations for curing 24 different types of diseases and ailments (Kanthale and Biradar, 2012). Apart from this the loss of medicinal plant diversity from Mahur and kinwat forest ranges was previously studied (Reddy, *et.al.,*2016). Diversity and distribution of leguminosae tree plants were also recorded in the Mahur forest ranges (Wankhade, 2017).

Table No. 2:- Number of plants belonging to different family

Sr. No.	Name of families	No of plants
1	Fabaceae	7
2	Lamiaceae	4
3	Moraceae	4
4	Acanthaceae	3
5	Asteraceae	2
6	Apocynaceae	2
7	Euphorbiaceae	2
8	Rutaceae	2
9	Myrtaceae	2

Table No. 1. :- Exploration of ethnomedicinal plants used by communities in Mahurghad forest area of Nanded District

Sr.no.	Name of plant	Vernacular name	Family	Habit	Part used	Disease treated	Mode of preparation	Dosage / Duration	Tribal associated

1	*Azadirachata indica* A.	Neemmarra	Meliaceae	Tree	Bark, Leaves	Skin problems.	Leaf juice / bark decoction	2teaspoon, morning and night for 15days	Gond,Pradhan,kolam/pujar, Thoti
2	*Ficus religosa* Linn.	Aalimarra (Pimpal)	Moraceae	Tree	Bark, Leaves, Trunk	Skin problems.	Boil in the water	Apply on the skin morning and night for 15days	Gond,,ThotiPradhan
3	*Ficus bengalensis* Linn.	Vadmarr(Vad)	Moraceae	Tree	Bark, Leaves, latex Prop roots	1.Strengthen the teeth 2.Infertility in male 3.Hairs Problem	1. Boil in the water 2.leaf latex 3.boil prop root in coconut oil	1.Gargling morning and night 2.in early morning one teaspoon latex in *Battasha* 7weeks 3. apply oil on hairs 1 month	Gond, Thoti, Pradhan
4	*Bacopa moneri* Linn.	Chivri (Chival)	Plantaginaceae	Herb	Leaves	1.Increase heat in body 2. Boils	1.Cook 2.Leaf paste	Twice in week Past apply on boils up to 5 days	Gond,Thoti Pradhan
5	*Spilanthes acmella* Murr.	Akkalkadha	Asteraceae	Herb	Fruit	Dental problem	Make powder	½ tea spoon powder night and morning	Gond,Andh, Pradhan
6	*Calatropis gigantea* (Linn) Br	Pandhari ruchaki	Apocynaceae	Shrub	Leaves, fruit, Latex, flower	Eczema boil and cough	1.Leaf paste apply on infected part 2. flower powder with honey	1 teaspoon flower powder with honey for 7 days	Gond,Andh, Pradhan
7	*Ricinus communis* Linn.	Nrodi (Arandi)	Euphorbiaceae	Shrub	Leaves, stem	Jaundice	crush the leaves and young stem and prepare the juice	½ cup at early morning for 5 days	Gond,Andh, Pradhan
8	*Euphorbia hirta*	Dudhi	Euphorbiaceae	Herb	Leaves, and whole plant	Cold, Cough, asthma and gastrointestinal disorders			Gond,Andh, Pradhan
9	*Dhatura strumarium* L.	Pandhara dhotara	Solanaceae	Shrub	Leaves, fruit, flower	Hair problem	Leaves rub the head	Use night 2 leaves	Gond,Andh, Pradhan
10	*Mangifera indica* L.	Markamrra(Aambha)	Anacardiaceae	Tree	Leaves, barks	Diarrhea, asthma, cough	Leaf and bark powder	Use at night 1 teaspoon for 5 days	Gond,Andh, Pradhan
11	*Balreria priontis* Linn.	Pivali katekorati	Acanthaceae	Shrub	Leaves	Ear ache	Make leaf juice	Use in few drops of juice in ear night	Gond,Andh, Pradhan
12	*Butea monosperma* L.	Murmarra(Palas)	Fabaceae	Tree	Bark, leaves	Boost of body	Make the powder	1teaspoon drink night	Gond,Andh, Pradhan
13	*Pergularia daemia* (Forssk.) Chiov	Utaran	Apocynaceae	Climber	Flower, Leaf, stem	Diabetes	Cooke and eat	Trice in a week	Gond,Andh, Pradhan
14	*Acacia nilotica* Linn.	Bhabalimarra (Bhabhul)	Fabaceae	Tree	Leaves, seed	Knee problem	Leaf, seed powder mix in a warm water and drink	1 teaspoon seed, leaf powder mixed in water for 7 nights	Gond, Andh, Pradhan

15	*Acacia leucophloea* (Roxb.)Willd	Hiwar	Fabaceae	Tree	Leaves, seed	Knee problems	Leaf, seed powder mix in a warm water and drink	1 teaspoon seed, leaf powder mixed in water for 7 nights	Gond, Andh, Pradhan
16	*Ficus hispida* Linn.	Dhamuka	Moraceae	Shrub	Seed	Use Diarrhea	Dry Seed eat	Eat 2 Seeds morning	Gond,Andh, Pradhan
17	*Terminalia arjuna* (Roxb.ex DC)	Aanjimarra(Aanjan)	Combretaceae	Tree	Bark, stem	Wound healing	Make the paste	Use in twice a day	Gond,Andh, Pradhan
18	*Vitex nirgundo* L.	Nirgudi	Lamiaceae	Shrub	Leaves, roots	Skin problems	Boil in the water and bath	Use bath time morning	Gond,Andh, Pradhan
19	*Adhatoda vasica* nees	Aadulsa	Acanthaceae	Shrub	Leaves	Cough	Decoction	Drink 1 teaspoon night	Gond,Andh, Pradhan
20	*Aegle marmelos* (Linn.) Corr	Belpatra	Rutaceae	Tree	Leaves, fruit	Decrease acidity	Rub the leaves/ decoction	Drink 1 teaspoon night	Gond,Andh, Pradhan
21	*Phyllanthus emblica* Linn.	Nallimarra (Aawala)	Phyllanthaceae	Tree	Leaves, fruit	Hair problem, and stomach problem	Dry fruit and make powder	Drink 1 teaspoon powder with warm water in morning	Gond, Andh, Pradhan
22	*Helicteres isora* Linn.	Penghagara (Muradsheng)	Malvaceae	Shrub	Fruit	Diarrhea, stomach problem	Rub and drink the juice	Drink 2 teaspoon night	Gond,Andh, Pradhan
23	*Curcuma pseudomontana.* J.Graham	Kelamarra(Ran halad)	Zingiberaceae	Herb	Rhizome	Swelling	Make oilment	Use in night	Gond, Andh, Pradhan
24	*Andrographis paniculata* (Burm.f.) Nees	Bhuilim	Acanthaceae	Herb	Leaves	Fever, cough	Boil the leaves in water and drink	Drink 1 cup in night	Gond,Andh, Pradhan
25	*Zizipus mauritiana* Lam.	Rengamarra (Bor)	Rhamnaceae	Tree	Fruit, leaves	Cough	Rub the leaves and drink the juice	Drink 1 teaspoon night	Gond,Andh, Pradhan
26	*Cassia auriculata* Linn.	Tarota	Fabaceae	Shrub	Seeds, leaves	Wound of quick healing	Paste the leaves	Apply the paste twice a day	Gond,Andh, Pradhan
27	*Tectona grandis* Linn.	Tekamarra (Sagvan)	Lamiaceae	Tree	Seed	kidney stone	Drink the seed powder	Drink 1 teaspoon in night	Gond,Andh, Pradhan
28	*Ficus carica* Linn.	Anjir	Moraceae	Tree	Fruit	Loss of appetite	Eat a fruit	Two fruits daily	Gond,Andh, Pradhan
29	*Mentha spicata* Linn.	Pudina	Lamiaceae	Herb	Leaves	Fever	Rub the leaves and make the juic	Drink 1 teaspoon night or morning	Gond,Andh, Pradhan
30	*Moringa oleifera* Lam.	Mungoni, Shevga	Moringaceae	Tree	Leaves and bark pest	Reduce swelling	Make the oil ment	Use in night	Gond,Andh, Pradhan
31	*Santalum album* Linn.	Chandan	Santalaceae	Tree	Bark, leaves	Cough, cold	Boil leaves	Drink 1 teaspoon in night	Gond,Andh, Pradhan
32	*Syzygium cumini* Linn.	Jambhulni	Myrtaceae	Tree	Bark, fruit	Heart problem	Eat fruit, boil bark	Eat fruit morning before meal	Gond,Andh, Pradhan
33	*Caraca papaya* Linn.	Papai	Caricaceae	Tree	leaves	Malaria / Dengu	Leaf juice	Two tea spoon leaf juice for 7 days	Gond,Andh, Pradhan

34	*Eucalyptus globulus* Labill.	Nilgiri	Myrtaceae	Tree	Bark	Treat respiratory problems	Boil the bark and make paste	Use the paste in night	Gond,Andh, Pradhan
35	*Ocinum snactum* Linn.	Tulas	Lamiaceae	Herb	Leaves, stem,	Cough	Boil the leaves and drink	½ Cup of decoction drink in morning	Gond,Andh, Pradhan
36	*Butea monosperma* (Lam.) Kuntze	Palash	Fabaceae	Tree	Leaves, Bark	1.Head lice 2.Pyorrhoea	1.Apply the leaf juice scalp 2.Brushing with twig	1.Leaf juice apply on the scalp 1 week	Gond,Andh, Pradhan
37	*Senegalia catechu* (L.f.)	Khair	Fabaceae	Tree	Leaves, Bark	Dry cough	Boil and drink	Drink 1 teaspoon at night	Gond,Andh, Pradhan
38	*Bauhinia racimosa* Linn.	Aapta	Caesalpiniaceae	Tree	Stem bark	Against Weakness	Make a powder	1 teaspoon powder with warm water for one week	Gond,Andh, Pradhan
39	*Citrus aurantium* Linn.	Limbu	Rutaceae	Shrub	Fruit	Against stomach problem	Make fruit juice	Drink 1 teaspoon day or night	Gond, Andh, Pradhan
40	*Tridax procumbens* Linn.	Ghavmel, kambarmodi	Asteraceae	Herb	Leaves	Wound of quick healing	Make juice	Wrap the leaves on wound	Gond,Andh, Pradhan
41	*Termindus indica* Linn.	Sittamara(Chinch)	Fabaceae	Tree	Whole plant	used for treating diarrhea and dysentery.	1.pulp with lemon is used to treat diarrhea, and the root is used to treat dysentery	1.Thrice in a day for 2 days 2. decoction of root thrice in a day	Gond,Andh, Pradhan

Fig. No. 1 :- Graphical representation of plants in different family (Top Four Family)

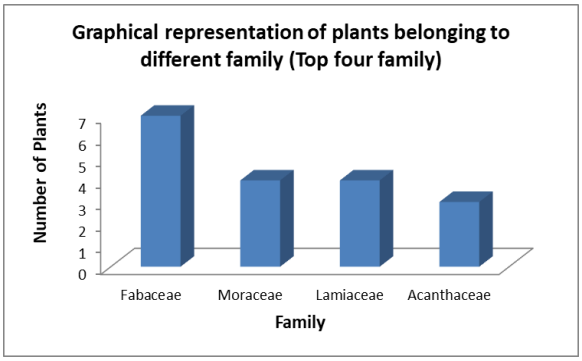
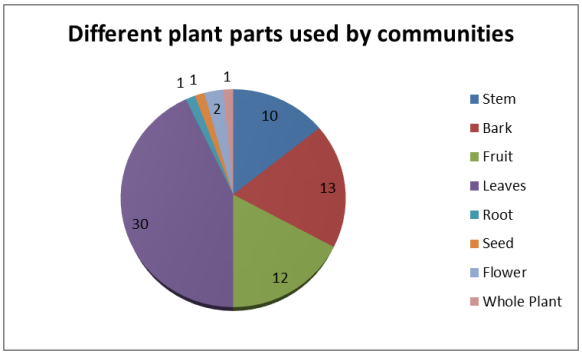


Fig No. 2 :- Different plant parts used by communities in study area



CONCLUSION

The present study revealed that the exploration of ethnomedicinal plants in of tribals communities in Mahurgad forest area of Nanded district. The tribal of Mahur forest range have adequate ethnomedicinal knowledge which has been transmitted from one generation to another, but the present enumerations were not recorded or documented. However, to prove investigations are essential for optimum utilization. These Data Open window for Research to use it and develop new molecules as well as, to continue studying the effects of extracts and isolated chemicals derived from these plants for their health benefits, in important diseases.

REFERENCES

[1] Biradar, S.D. and Ghorband, D.P. (2010). Ethnomedicinal wisdom of tribals of Kinwat forest of Nanded district (Maharashtra). Indian Journal of Natural product and Resources. Vol.1(2), 254-257.

[2] Bodele, S.K. and Shahare, N. H. (2015). Ethnobotanical study of medicinal plants in forest region of Chimur Tahsil, Chandrapur District, Maharashtra. Asian Journal of Plant Science and Research. Vol.5(12), 24-28

[3] Ghorbani, A., Naghibi, F., Mosaddegh, M. (2006). Ethnobotany, Ethnopharmacology and Drug Discovery. Iranian Journal of Pharmaceutical Sciences. Vol. 2(2), 109-118.

[4] Kanthale, P. R. and Biradar, S.D. (2012). Ethnomedicinal wisdom of tribals of Mahur forest of Nanded district, Maharashtra, India. Recent Research in Science and Technology. 2012, Vol. 4(10), 67-70.

[5] Kanthale, P.R. and Biradar, S.D. (2012). Ethnomedicinal plants and their utilization by tribals of Mahur ranges forest of Nanded district of Maharashtra, India. Indian Journal of Natural product and Resources. Vol.3(4), 578-581.

[6] Kulkarni, R. and Sontakke, K. (2020). Ethnobotanical traditions in Kinwat Region of Nanded District. International Journal of Botany Studies. Vol.5(5), 136-138.

[7] Kumadoh, D. and Ofori-Kwakye, K. (2017). Dosage forms of herbal medicinal products and their stability considerations-an overview. Journal of Critical Reviews. Vol, 4(4).1-8.

[8] Kumar, A., Kumar, S., Komal, Ramchiary, N., Singh, P. (2021). Role of Traditional Ethnobotanical Knowledge and Indigenous Communities in Achieving Sustainable Development Goals. Sustainability. Vol.13, 1-14.

[9] Naik, V. N. (1998). Flora of Marathwada Vol I & II. Amrut Prakashan, Aurangabad,

[10] Pramanik, R. (2018). Documentation and Digitalization for Access to Traditional Medicine Knowledge in Southern Odisha. International Journal of Social Science. Vol. 7(2), 327-338.

[11] Reddy, E. S., Rathor, O.S., Chavan, V.B. (2016). The loss of medicinal plant diversity from Mahur and Kinwat forest ranges of Nanded district (Maharashtra). International Journal of Researches in Biosciences, Agriculture and Technology, 128-130.

[12] Wankhade, M.S. (2017). Diversity and distribution of leguminosae plants in Kinwat and Mahur Forest Ranges of Nanded District. International Jouurnal for Research in Applied Science and Engineering Technology. Vol. 5(11),5106-5110.

[13] Yadav, S.R. and Sardesai, M.M. (2002). Flora of Kolhapur District, Publisher Shivaji University, Kolhapur, India,