Ethnomedicinal plants used for the treatment of respiratory disorders by rural and tribal communities in Mahur taluka of Nanded District, Maharashtra, India.

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Abstract: An ethno-botanical survey was undertaken to collect information on the use of medicinal plants for the treatment of respiratory diseases by rural and tribal communities of Mahur Taluka of Nanded District, Maharashtra, India.In the present Information on 64 plant species used especially for the treatment of respiratory disorders, as the traditional herbal remedies are based on ancestral knowledge and empiric experiences.This wealth of traditional knowledge needs to be collected and preserved which may help to understand remedial plant metabolites for development of novel herbal medicines and for the betterment of the mankind.

Key Words: Ethno Medicinal plants, respiratory disorders, rural and tribal communities, Mahur taluka of Nanded district, Maharashtra.

1. INTRODUCTION:

Man has been dependent on plants for traditional medicines since time immemorial. This knowledge of medicinal plants has been accumulated in the course of several centuries, forming the basis of medicinal systems such as *Ayurveda, Unani* and *Siddha*. During the last few decades, an increasing interest in the study of traditional uses of medicinal plants has been witnessed in different parts of the world, mainly due to several problems associated with synthetic drugs and emergence of multi-drug resistant pathogens **(Chellaiah *et.al*. 2006).** Additionally, the treatment of various diseases with indigenous medicinal plants generates considerable health and economic benefits. Traditional knowledge in this regard has been conserved for generations in different tribal communities in several parts of the world and especially in Western *Ghats* of India which is considered as a treasure trove for such traditional medicines **(Pokharkar *et.al.* 2010).**

Complementary Alternative Medicine is also becoming more and more popular in many developed countries. Forty-two percent of the population in the US have used Complementary Alternative Medicine at least once **(WHO 1998),** and a national survey reported the use of at least one of 16 alternative therapies increased from 34% in 1990 to 42% in 1997 **(UNCCD 2000).**

2. MATERIALS AND METHODS:

Mahur taluka is located in northern part of Nanded district. It is bounded North by Yavatamal district, South by Kinwat taluka of Nanded district East part by Adilabad district of Telangana and West by Pusad taluka of Yavatmal district of Vidarbha region. Mahur taluka is a thick forested area of Nanded District. The main river is Penganga which flows from the South to North direction.

Geographically the Mahur taluka is situated between $19^0$49`to$19^0$83` North latitude and 77^0 91` to $77^0$55` East longitude. The total geographical area of taluka is 52160 hectares of which 14397.39 hectares area covered with forest and 37762.612 hectares are non-forested area and its population is 86782 (Census-2001), out of this 15.5 percent is inhibited by tribal population of aborigines like Andh, Kolam, Gond, Naikede and Pradhan.

The survey of villages in Mahur taluka of Nanded district was conducted during year 2014 to 2015. The desired information regarding plant part used medicinally was collected during field trips on the basis of interview with the tribal and local people. By repeated enquiries, changing the pattern of questioning like showing the plant collected from one tribal healer/ rural people to another of a distinct locality and asking them for its use as medicine and vice-versa. Methods and identification of collected plant material was done either in the field itself or with the help of

relevant literature Almeida (1996), Naik (1998) Yadav and Sardesai (2002), Flora of Maharashtra (BSI), Dhore *et.al*. (2011). Given accession numbers and deposited in the Department of Botany, Baliram Patil College, Kinwat, District Nanded, Maharasthra, India.

3. RESULTS AND DISCUSSIONS:

The survey showed that rural and tribal community of study area utilize 64 species of flowering plants belonging to 57 genera comprising of 37 families are belongs to dicotyledons and only one is monocotledon. They are distributed habit wise as 23 (36%) trees, 14 (22%) shrubs, 23 (36%) herbs and 04 (6%) climbers; it is shown in Figure No. 1. Among reported plants, 11 applications using leaf (17%), whole plant 10 (16%), roots 10 (16%), bark 8 (12%), flower 7 (11%), seed 7 (11%), fruit 3 (3%),tuber and latex each 2 (2%), both root and leaf 2 (2%), root and fruit only one and only one plant part nut, it is shown in figure no. 2.

It has been observed that most of the plants are common except few vulnerable species like, *Aegle marmelos, Gloriosa superba,, Semecarpus anacardium* etc, within the study area. Majority of the preparations are used internally in his form of infusion or decoction. The detailed information regarding the therapeutic application of different plants of 64 plant species were obtained and their role in curing various of respiratory system like common cold, rhinitis, chronic bronchitis, allergic bronchitis, sinusitis, asthma, etc. and mode of administration by tribal healers, priests and ordinary villagers were compared with available literature in different regions of India and abroad (Parrota 2001, Kirtikar and Basu 2005, Almida 2010 and Madhav Chetty *et. al.,* 2013). It was found that many of the uses listed are not recorded earlier. It provides deeper insight into the indigenous method of applications and effectiveness of the plant derivatives in treating different ailments of the respiratory system.

Table No.1 - List of medicinal plants used for respiratory disorders

Sr.No.	Botanical name	Family	Local name	Part use
1	*Abrus precatorius L.*	Fabaceae	Gunj	Leaf
2	*Abutilon indicum* (Link) Sweet.	Malvaceae	Kanghi	Leaf
3	*Acacia nilotica (L.)* Willd. ex Del. ssp indica (Benth.) Brenan.	Fabaceae	Babhul	Whole Plant
4	*Acalypha indica L.*	Euphorbiaceae	Khokli	Leaf & Root
5	*Achyranthus aspera L.*	Amaranthaceae	Aghada	Leaf
6	*Adhatoda zeylanica* (L)	Acanthaceae	Adulsa	Leaf
7	*Aegle marmelos* (L.) Corr.	Rutaceae	Bel	Bark
8	*Ailanthus excelsa* Roxb.	Simaroubarceae	Maharuk	Whole Plant
9	*Anisomeles malabarica* (L.) R. Br. Ex.Simg.	Lamiaceae	Bhutganja	Whole Plant
10	*Anogeissus latifolia* (Roxb.ex.Dc.) Wall. Ex. Guill & Perr.	Combretaceae	Dhawanda	Seed
11	*Argemone mexicana L.*	Papaveraceae	Pivala-Dhotara	Seed
12	*Aristolochia indica L.*	Aristolochiaceae	Isarmul	Seed
13	*Balanites aegyptica (L.)* Delile.	Balanitaceae	Hinganbet	Root & Leaf
14	*Bambusa arundinacea* (Retz.) Willd.	Poaceae	Bambu	Flower
15	*Bauhinia racemosa* Lamkark.	Caesalpiniaceae	Apta	Root

16	*Barleria cristata L.*	Acanthaceae	Nili koranti	Whole Plant
17	*Boerhavia diffusa L.*	Nyctaginaceae	Punarnarva	Root
18	*Boerhavia erecta* L.	Nyctaginaceae	Punarnarva	Bark
19	*Boswellia serrata* Triana & Planch.	Burseraceae	Salai	Flower
20	*Calotropis gigantea* (L.) R.Br.ex. Schult.	Asclepiadaceae	Ruchaki	Flower
21	*Calotropis procera* (Ait.) W.T.Aiton.	Asclepiadaceae	Pandri Ruchaki	Flower
22	*Careya arborea* Roxb.	Lecythidaceae	Kumbhi	Leaf
23	*Cassia occidentalis L.*	Caesalpiniaceae	Rantarota	Seed
24	*Cassia tora L.*	Caesalpiniaceae	Takla	Whole Plant
25	*Chrysanthemum indicum L.*	Asteraceae	Shevanti	Seed
26	*Celosia argentea L.*	Amaranthaceae	Kurdu	Root
27	*Chrozophora prostrata* Dalz in dalz & Gibbs.	Euphorbiaceae	Pattarpod	Root
28	*Chrozophora rottleri* (Geis.) Spreng.	Euphorbiaceae	Pattarpod	Root
29	*Clerodendrum serratum* (L.) Moon.	Lamiaceae	Bharangi	Leaf
30	*Cordia dichotoma* Forst.f.	Boraginaceae	Bhokar	Tuber
31	*Cyperus rotundus L.*	Cyperaceae	Nagarmotha	Leaf
32	*Datura metal L.*	Solanaceae	Kala Dhotra	Root
33	*Desmodium gangeticum* (L.) DC.	Fabaceae	Shali-parni	Whole Plant
34	*Eclipta alba* (L.) Hassk.	Asteraceae	Maka	Whole Plant
35	*Euphorbia hirta L.*	Euphorbiaceae	Dudhanali	Whole Plant
36	*Evolvulus alsinoides L.*	Convolvulaceae	Vishanukranta	Latex
37	*Ficus benghalensis L.*	Moraceae	Vad	Tuber
38	*Gloriosa superba* L.	Colchicaceae	Kal-lavi	Root
39	*Helecteris isora L.*	Sterculiaceae	Murud-shang	Root
40	*Hibiscus rosa-sinensis L.*	Malvaceae	Jaswand	Seed
41	*Holarrhena antidysentrica* Sensu.Wall. ex. DC.	Apocynaceae	Kala kuda	Whole Plant
42	*Leucas aspera (Willd.) Link.*	Lamiaceae	Kumbha	Flower
43	*Leucas cephalotes Spreng.(Roth)*	Lamiaceae	Tumba	Flower
44	*Madhuca longifolia (J.Konig) J.F.Macbr. (J.Konia) Maebr.*	Sapotaceae	Moha	Flower

45	*Nelumbo nucifera Gaertn.*	Nelumbonaceae	Kamal	Bark
46	*Nyctanthus arbor-tristis L.*	Oleaceae	Parijatak	Leaf
47	*Oscimum americanum L.*	Lamiaceae	Ashta	Leaf
48	*Opuntia elatior Mill.*	Cactaceae	Nagfani	Leaf
49	*Pergularia daemia (Forssk.) Chiov.*	Asclepiadaceae	Utaranvel	Fruit
50	*Phyllanthus emblica L.*	Phyllanthaceae	Awla	Bark
51	*Pterocarpus marsupium Roxb.*	Fabaceae	Bijasal	Root,Fruit
52	*Pupalia leppaceae (L.) Juss.*	Amaranthaceae	Erra uttareni	Nut
53	*Semecarpus anacardium L.f.*	Anacardiaceae	Bibba	Root
54	*Sida rhombifolia L.*	Malvaceae	Bala	Leaf
55	*Solanum nigrum L.*	Solanaceae	Kamanchi	Fruit
56	*Solanum virginianum L.*	Solanaceae	Bhui Ringani	Seed
57	*Syzygium cumini (L.)*	Myrtaceae	Jambhul	Bark
58	*Terminalia bellirica (Gaertn.) Roxb.*	Combretaceae	Behda	Bark
59	*Terminalia chebula Retz.*	Combretaceae	Hirda	Bark
60	*Terminalia cuneata Roth.*	Combretaceae	Arjuna	Fruit
61	*Tribulus terristris L.*	Zygophyllaceae	Ghakaru	Whole Plant
62	*Vernonia cinerea (L.) Less.*	Asteraceae	Sahadevi	Root
63	*Withania somnifera (L.) Dunal*	Solanaceae	Ashwagandha	Latex
64	*Wrightia tinctoria (Roxb) R.Br.*	Apocynaceae	Pandra kuda	Bark

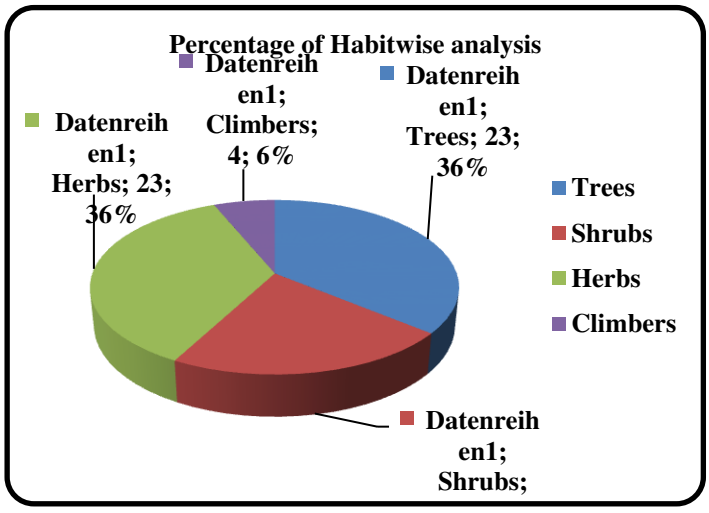

Fig. No.1-Percentage of Habitwise analysis

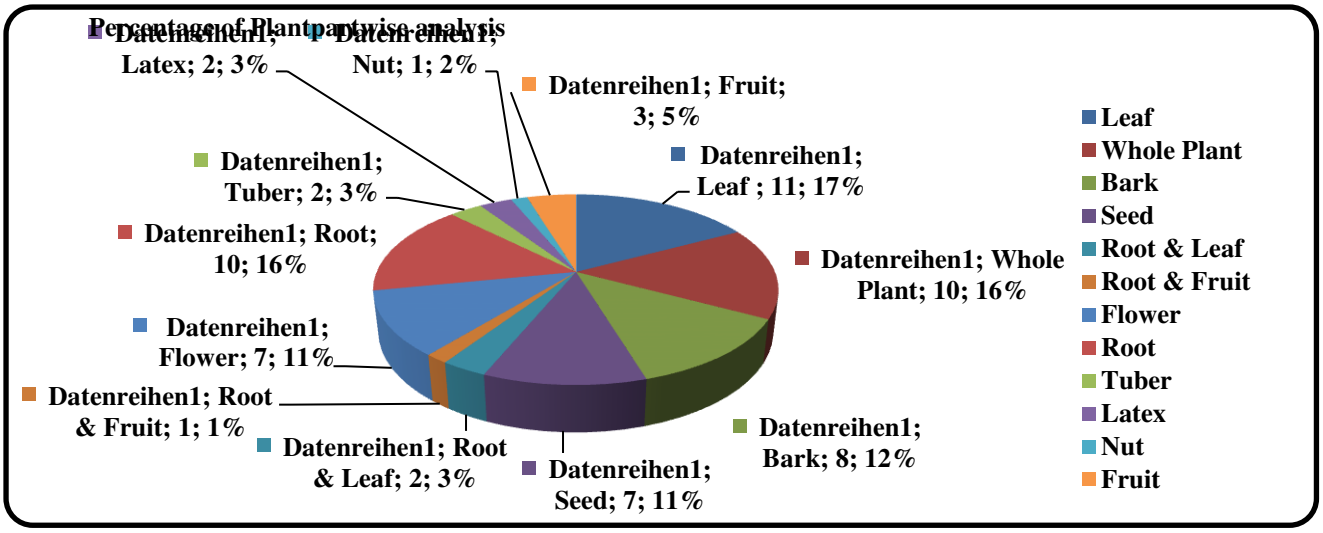

Fig. No.2- Percentage of Plant partwise Analysis

CONCLUSION:

Respiratory tract infections continue to be a major health challenge worldwide especially due to the increasingly fast development of resistance to the drugs currently in use, many plant species are traditionally used for respiratory illness treatment, and some have been investigated for their efficacy with positive results.

Further pharmacological and clinical studies on these plants may provide effective natural medicines for various respiratory disorders and it will also be useful to determine in the bioprospecting potential of these plants.

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