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AS Sure
College of Agriculture, Achloli-Mahad, Dist. Raigad, Maharashtra, India

Sonali Gaikwad
College of Agriculture, Achloli-Mahad, Dist. Raigad, Maharashtra, India

Correspondence
AS Sure
College of Agriculture, Achloli-Mahad, Dist. Raigad, Maharashtra, India

Survey of ethnomedicinal plants diversity in forest area of Raigad district of Maharashtra state

AS Sure and Sonali Gaikwad

Abstract
A survey ethnomedicinal plants of forest area of Raigad district has been carried out during the year 2017-18. During study medicinal plants have been identified for the various medicinal properties. The present study revealed in forest area of Raigad district at different localities. The information pertaining to botanical name, common name, family, morphology, parts used and medicinal properties was identified with the help of local population. The survey investigated 294 wild medicinal plant species belonging to 255 genera and 90 families. Out of these wild medicinal plants 18 species belongs to the family Fabaceae, 12 Species from Euphorbiaceae, 11 Species from Malvaceae, 10 species each from Apocynaceae, Caesalpinaceae; Remaining families are having less than nine species each. Life forms indicated that trees were dominating (37%) followed by herbs (29%), shrubs (18%), climber (8%), creepers, grasses, lianas, twiners (2%) each. The plant parts like root, rhizome, bulb, stem, bark, root bark, latex, leaves, gum, gum-resin, flower, peduncle, arillus, fruit, tuber, oil, seed, sap, shoot, resin and whole plant are used for the treatment of various diseases. Medicinal plants are globally valuable sources of herbal products, and they are disappearing at a high speed due to activities carried out by human as result of over-exploitation, industrialization, development projects and civilization. Therefore, there is need of the management of traditional medicinal plants conservation strategies i.e. in-situ and ex-situ conservation and cultivation practices and resource management i.e. good agricultural practices and sustainable use solutions.

Keywords: Diversity, ethnobotanical, medicinal plants, Raigad, traditional knowledge

Introduction
The use of plants and animals as source of medicine and food is as old as humanity. Health and diseases are coeval with life. By necessity man has undoubtedly always been concerned with the question of health and survival and has sought within the framework of his knowledge, solution to problem of illness (Rubin, 1960) [9]. Human being everywhere, at all times and place had to deal with the threats of disease and illness. The herbal occupied a distinct place in the life right from the primitive period to today and the primitive or ethnic populations have their own medical lore, and some of their therapeutic practices have found place in today's medical knowledge (Jain, 1995) [4]. This traditional knowledge is useful to develop new food sources. Exploration of natural resources and documentation of traditional knowledge is necessary. Maharashtra state with its Sahyadri ranges and Konkan region, is also considered as veritable emporium of medicinal plants. The tribal people of the state mostly rely on traditional medicines directly based on plant materials (Mishra, 2004) [7]. Present work is an attempt to explore the traditional knowledge of wild medicinal plants of Raigad district of Maharashtra state.

Raigad district, geographically it is located in Konkan of west costal region of Maharashtra. The Konkan is lying in the world-famous Western Ghats. Raigad district is sharing border with Pune, Ratnagiri, Thane, Mumbai Districts. It lies between 17^0 51' to 19^0 80' North latitude and between 72^0 51' to 73^0 40' East longitude and it includes 15 tahsils. Map of Raigad district of Maharashtra showing study area presented in Fig. 1. Raigad district occupies an area of approximately 7148 sq. km. which is consisting with 1748.32 sq. km forest area i.e. 24.46% of its total area. The region is also home to various scheduled tribes such as Mahadev-Koli, Katkari, Dhangar, Sonar, Mali, Kunbi and Thakar etc. During study medicinal plants have been identified for the various medicinal properties. The information pertaining to botanical name, local name, family, parts used, medicinal uses, their does and process of administration was identified with the help of local population and available literature.

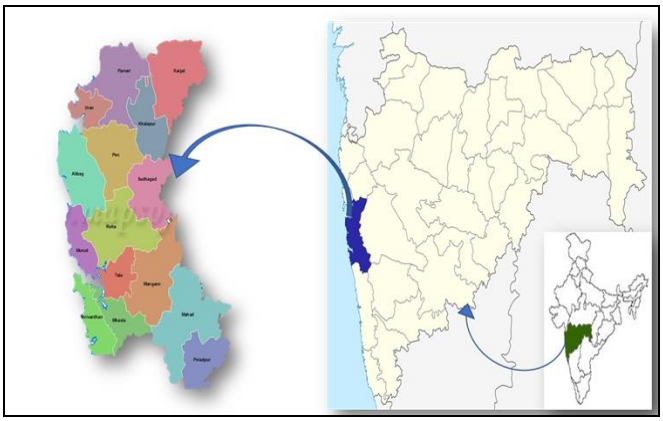

Fig 1: Map of Raigad district of Maharashtra showing study area

Materials and method

Study Area: Raigad District, the work regarding data collection done by repeated surveys at different localities. The representative places in various tahsils of Raigad district were visited during 2017-18.

Data Collection & analysis: The Ethnobotanical information was obtained from knowledgeable person, Vaidya, experienced people of forest department, medicine men, herbal vendor and heads and local inhabitants of the village who have knowledge of plants for health & livelihood security. The knowledge of medicinal plants, information was collected by asking questions in interview session. Data was also recorded during the field visits. Plant samples and plant parts identified during the survey were cross checked against different informants to validate the information. The plant samples were identified with the help of published, authentic literature. The Flora of British India, vol. I-VII (Hooker, 1872-1879) [3], Cooke, 1967 [2], Flora of Maharashtra (Almeida, 1996-2004) [1], Flora of Maharashtra state (Sharma *et al.*, 1996 and Singh *et al.*, 2001) [10, 11] have been consulted for the identification of plant sample. Also, some information is available on books ethnobotany, flora and life-classes of plants (Joshi, 2000, Jain 1981 and Puspangadan, 1995) [6, 5, 8]

Results and discussion

The present study describes the 294 plants species belonging to 255 genera and 90 families. Among the all species, life forms indicated that 109 species of trees were dominating (37%) followed by 86 species of herbs (29%), 52 species of shrubs (18%), 24 species of climber (8%), 6 species of creepers, grasses, lianas, and twiners (2%) each. Diversity in the habits of Medicinal plants presented in Fig. 2.

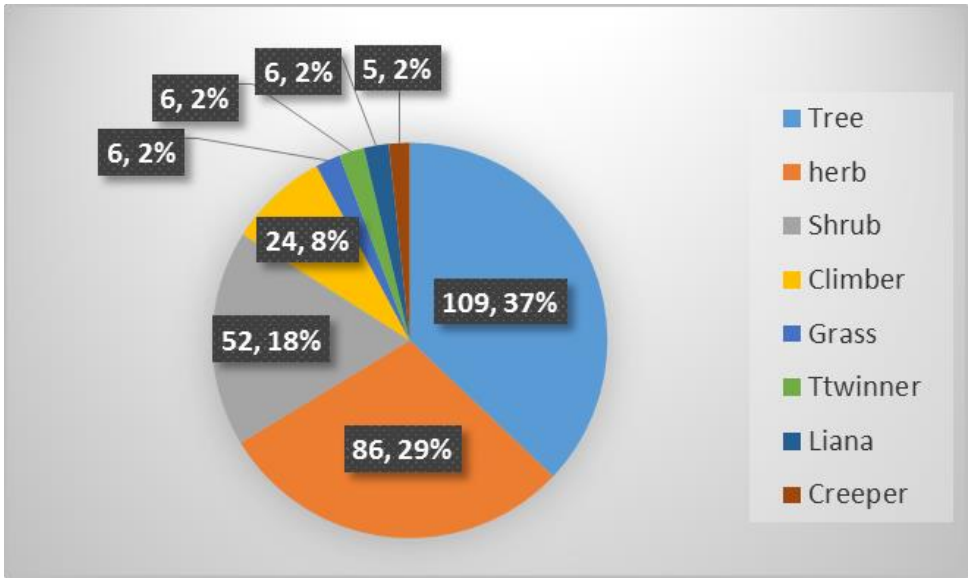

Fig 2: Diversity in the habits of Medicinal plants

Medicinally most important plants family was Fabaceae with 18 species followed by 12 Species from Euphorbiaceae; 11 Species from Malvaceae; 10 species each from Apocynaceae and Caesalpinaceae; Nine species each from Amaranthaceae, Asteraceae and Cucurbitaceae. Eight species each from Asclepiadaceae and Zingiberaceae; Seven species each from Rutaceae and Verbenaceae; Six species each from Acanthaceae, Anacardiaceae, Combretaceae, Liliaceae, Meliaceae, Mimosaceae, Poaceae and Rubiaceae. Five species each from Convolvulaceae, Moraceae and Solanaceae. Four species each from Arecaceae, Bignoniaceae, Clusiaceae, Lamiaceae, Lythraceae, Menispermaceae. Three species each from Apiaceae, Araceae, Capparaceae, Dioscoreaceae, Ebenaceae, Gentianaceae, Sapindaceae and Sapotaceae. Two species each from Aristolochiaceae, Burseraceae, Chenopodiaceae, Flacourtiaceae, Lecythidaceae, Malpighiaceae, Oxalidaceae, Piperaceae, Polygonaceae, Rhamnaceae, Strychnaceae and Zygophyllaceae.

Remaining 41 families having only one species are Adianthaceae, Agavaceae, Aizoaceae, Amaryllidaceae, Annonaceae, Averrhoaceae, Basellaceae, Bixaceae, Boraginaceae, Cannabaceae, Celastraceae, Cleomaceae, Commelinaceae, Compositae, Crassulaceae, Cyperaceae, Dipterocarpaceae, Hypoxidaceae, Lauracaeae, Melastomataceae, Moringaceae, Musaceae, Myristicaceae, Myrtaceae, Nyctaginaceae, Nymphaeaceae, Oleaceae, Pandanaceae, Papaveraceae, Pedaliaceae, Plumbaginaceae, Portulacaceae, Primulaceae, Ranunculaceae, Santalinaceae, Scrophulaceae, Simaroubaceae, Symplocaceae, Ulmaceae and Vitaceae. Family wise occurrence of plants used by the tribal of forest area of district Raigad, studied during the year 2017-18 is represented in Table 1.

Table 1: Family wise occurrence of plants used by the tribal of forest area of district Raigad for medicinal purpose studied during the year 2017-18.

Sr. No	Family	No. of plants	Sr. No	Family	No. of plants	Sr. No	Family	No. of plants
1	Acanthaceae	6	31	Compositae	1	61	Nymphaeaceae	1
2	Adianthaceae	1	32	Convolvulaceae	5	62	Oleaceae	1
3	Agavaceae	1	33	Crassulaceae	1	63	Oxalidaceae	2
4	Aizoaceae	1	34	Cucurbitaceae	9	64	Pandanaceae	1
5	Amaranthaceae	9	35	Cyperaceae	1	65	Papaveraceae	1
6	Amaryllidaceae	1	36	Dioscoreaceae	3	66	Pedaliaceae	1
7	Anacardiaceae	6	37	Dipterocarpaceae	1	67	Piperaceae	2
8	Annonaceae	1	38	Ebenaceae	3	68	Plumbaginaceae	1
9	Apiaceae	3	39	Euphorbiaceae	12	69	Poaceae	6
10	Apocynaceae	10	40	Fabaceae	18	70	Polygonaceae	2
11	Araceae	3	41	Flacourtiaceae	2	71	Portulacaceae	1
12	Arecaceae	4	42	Gentianaceae	3	72	Primulaceae	1
13	Aristolochiaceae	2	43	Hypoxidaceae	1	73	Ranunculaceae	1
14	Asclepiadaceae	8	44	Lamiaceae	4	74	Rhamnaceae	2
15	Asteraceae	9	45	Lauracaeae	1	75	Rubiaceae	6
16	Averrhoaceae	1	46	Lecythidaceae	2	76	Rutaceae	7
17	Basellaceae	1	47	Liliaceae	6	77	Salvadoraceae	1
18	Bignoniaceae	4	48	Lythraceae	4	78	Santalinaceae	1
19	Bixaceae	1	49	Malpighiaceae	2	79	Sapindaceae	3
20	Boraginaceae	1	50	Malvaceae	11	80	Sapotaceae	3
21	Burseraceae	2	51	Melastomataceae	1	81	Scrophulaceae	1
22	Caesalpinaceae	10	52	Meliaceae	6	82	Simaroubaceae	1
23	Cannabaceae	1	53	Menispermaceae	4	83	Solanaceae	5
24	Capparaceae	3	54	Mimosaceae	6	84	Strychnaceae	2
25	Celastraceae	1	55	Moraceae	5	85	Symplocaceae	1
26	Chenopodiaceae	2	56	Moringaceae	1	86	Ulmaceae	1
27	Cleomaceae	1	57	Musaceae	1	87	Verbenaceae	7
28	Clusiaceae	4	58	Myristicaceae	1	88	Vitaceae	1
29	Combretaceae	6	59	Myrtaceae	1	89	Zingiberaceae	8
30	Commelinaceae	1	60	Nyctaginaceae	1	90	Zygophyllaceae	2

The plant parts like root, rhizome, bulb, stem, bark, root bark, latex, leaves, gum, gum-resin, flower, peduncle, arrilus, fruit, tuber, oil, seed, sap, shoot, resin and whole plant are used for the treatment of various diseases. Different plant parts used as medicine is depicted in Fig. 3. These parts are used effectively against fever, cough, cold, cuts, bronchitis, epilepsy, paralysis, inflammation, piles, wounds, mental disorder, abdominal pain, bone fracture, skin problems, jaundice, urinary trouble, stomach disorder, snake and insect bite, joint pain, impotency, weakness, diarrhea, joint pain, headache, eye diseases, liver problems, constipation, digestive problems and disease, asthma, etc. The plant containing different active ingredients like alkaloids, tannin, nicotine, sapponinetic, resin, vitamins etc is possible to boost up human health.

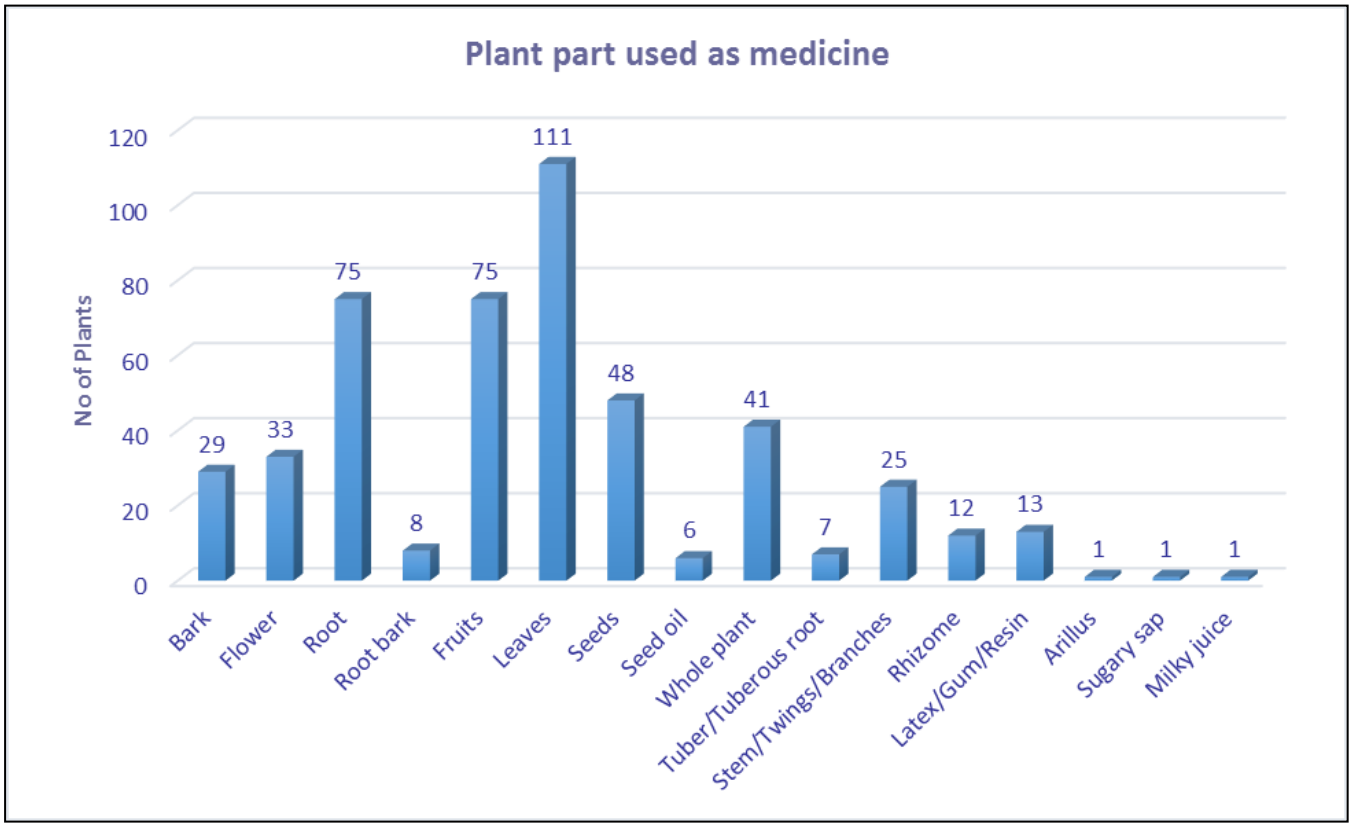

Fig 3: Plant parts used as a medicine to cure different diseases by the tribes of Raigad district studied during the year 2017-18

Conclusion

During the survey, the discussion, interviews and field visits with traditional stakeholder, Vaidu, herbal vender, it is found that they have great knowledge of medicinal uses of wild plants species and having close association with surrounding environment. The medicinal uses of some species may vary from village to village i.e. used to cure multiple ailments. Traditional knowledge of tribal and local people on human disease is very important to find out new drugs for human health, also the doses and their administration needs to standardization with scientific way.

Deforestation, civilization, development projects, modernizations and industrialization largely depleting the biodiversity and natural habitat of this wild species as well as the traditional knowledge and it is needs to be that protection, preservation and conservation practices with in situ or ex situ conservation activities before they lost forever and training to young generation and close association with surrounding nature. An emphasis on suitable harvesting of wild edible plants will help to enhance and maintain the biodiversity. This study reveals that traditional medical plants are still play a vital role in primary health care of human and knowledge gathered from this area will be helpful in further ethnobotanical studies for researches.

References

1. Almeida MR. Flora of Maharashtra, St. Xavier's College, Mumbai, Orient Press, Mumbai. 1996-2004, I-VI.
2. Cooke T. The flora of the presidency of Bombay, 2nd rep. and IIIB. S. I Calcutta. 1967, I-II
3. Hooker JD. 1872-97. The flora of British India reeve & con. London England, I-VII
4. Jain SK. A manual of ethnobotany, 2nd Edition, Scientific publisher (India), Jodhpur, 1995, 67-68.
5. Jain SK. Glimpses of Indian Ethnobotany, Oxford & IBH publishing company Pvt. Ltd., New Delhi, 1981.
6. Joshi SG. Medical plants, Oxford & IBH publishing company Pvt. Ltd., New Delhi, 2000.
7. Mishra DK, Agarwal SC. Medicinal plant diversity of Maharashtra state with special reference to endemism. Geophytology. 2004; 32(1, 2):53-59.
8. Puspangadan P. Ethnobotany in India: A status Report, Govt. of India, New Delhi, 1995.
9. Rubin Vera. Preface in culture, Society and health, Annals of New York academic science. 1960; 84:783-1060
10. Sharma BD, Karthikeyan S, Singh NP. Flora of Maharashtra State, Monocotyledones. Botanical Survey of India, Calcatta, 1996.
11. Singh NP, Lakshminarasimhan P, Karthikeyan S, Prasanna PV. Flora of Maharashtra State, Dicotyledones Botanical Survey of India, Calcatta. 2001, 2.