IJPS INTERNATIONAL JOURNAL OF PLANT SCIENCES
e ISSN-0976-593X Volume **11** | Issue 1 | January, 2016 | 135-140

DOI: 10.15740/HAS/IJPS/11.1/135-140
Visit us - *www.researchjournal.co.in*

A CASE STUDY

Contribution of plant diversity to healthcare in Saptashrungi region in Kalwan tahsil, Maharashtra with special reference to flowers, fruits and seeds

■ **B.D. GARUD, M. VARGHESE AND P.L. THAKUR**

SUMMARY

Saptashrungi region of Kalwan tahsil of Nasik district belongs to northern part of Maharashtra. The climate of the region is moist and dry to support the growth of tropical deciduous forest. The flora of this region is highly diversified with a rich number of floristic elements. Northern part of this region is inhabited by a large number of tribal people. They use a number of plant parts or entire plant for various ailments. Analysis of data revealed that a total number of 43 species belonging to 39 genera of 28 families of flowering plants are being used by tribal for medicinal purpose.

Key Words : Diversity, Saptashrungi region, Healthcare, Medicinal plants

How to cite this article : Garud, B.D., Varghese, M. and Thakur, P.L. (2016). Contribution of plant diversity to healthcare in Saptashrungi region in Kalwan tahsil, Maharashtra with special reference to flowers, fruits and seeds. *Internat. J. Plant Sci.*, **11** (1): 135-140.

Article chronicle : Received : 08.10.2015; **Accepted :** 27.12.2015

The present study deals with the ethnomedicinal uses of flowering plants with special reference to flower, fruit and seed in the treatment of various diseases. Floral parts of these plants are widely used by the local or tribal people of Kalwan taluka. Plants are a great source of medicines, especially in traditional medicine, which are useful in the treatment of various diseases. It has been estimated that, upto 90 per cent of the population in developing countries rely on the use of medicinal plants to meet their primary healthcare needs (WHO,1991) more than 50,000 plant species are used for medicinal purposes worldwide, of which almost 13 per cent are flowering plants.

Medicinal plants contain active chemical constituents like alkaloid, glycoside, saponin, essential oil, tannins and mucilage in root, stem, leaves, bark, flower, fruit and seed etc. which produce a definite curing physiological response in the treatment of various ailments in humans and other animals (Adhikari *et al*., 2010). The demand for medicinal plant is increasing in both developing and developed countries, due to easy availability, no side-effects and sometimes only source of healthcare. Saptashrungi is a hill range in Kalwan taluka and form part of the Sahyadri range of western ghats. The climate of the region is moist and dry to

MEMBERS OF THE RESEARCH FORUM

Author to be contacted :
B.D. GARUD, Jaihind Educational Trust's, Z.B. Patil College, DHULE (M.S.) INDIA
Email: garud7@rediffmail.com

Address of the Co-authors:
M. VARGHESE AND P.L. THAKUR, Jaihind Educational Trust's, Z.B. Patil College, DHULE (M.S.) INDIA
Email: prashant.smart@gmail.com

support the growth of tropical deciduous forest. The flora of this region is highly diversified with a rich number of floristic elements. Northern part of this region is inhabited by a large number of tribal people. They use a number of plant parts or entire plants for various ailments.

Moreover, this work also attempts to document the traditional knowledge about medicinal plants of the Saptshringi area and to evaluate the current status of knowledge of medicinal plant resources of the country. It also focuses on the importance of documenting traditional knowledge and practice related to conservation and sustainable utilization of medicinal plants.

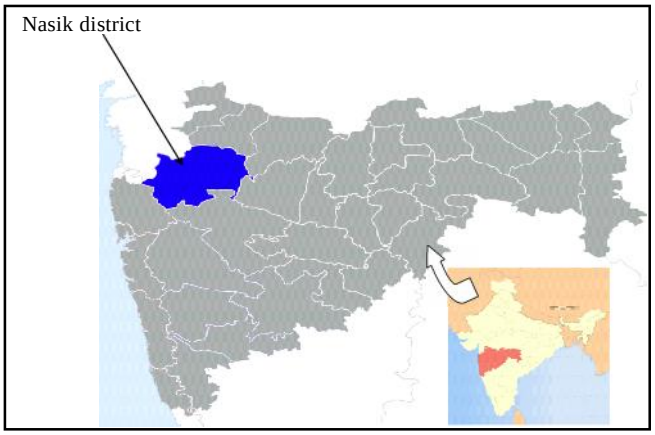

Fig. A: Map of Nasik district

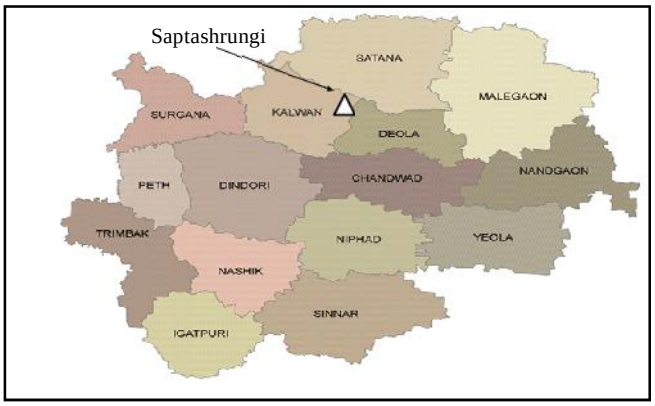

Fig. B: Map of Nasik district showing study area

Study area :

Saptashringi is located between 20°23'25"N and 73°54'31"E, a site of Hindu pilgrimage situated 60 km. from district head quarters Nasik. Saptashringi is a hill range in Kalwan taluka consisting of seven hills locally called Ghads and form part of the Sahyadri Range of hills in Western Ghats. Sahyadri Range is also known as Ajanta Satmala Range and the average height of the peaks is 4500 feet (1400 m) above sea level. The Dhodap, in the center of this mountain range, is the highest peak with an elevation of 4600 feet and Saptashrungi is

Table 1 : Uses of plant species in different diseases with reference to flower, fruit and seed

Sr. No.	Botanical name	Local name	Family	Fl. and Fr.	Disease name	Parts used	Habit
1.	*Aegle marmelos* (L.) Corr.	Bael	Rutaceae	April- Sept.	Dysentery, worm blood dysentery, stomach ache, mouth ulcer	Fruit	Tree
2.	*Annona squamosa* L.	Sitaphal	Annonaceae	June-Oct.	Head lice	Seed	Tree
3.	*Argemone mexicana* L.	Piwala Dhotra	Papaveraceae	Throughout the year	Night blindness	Seed	Herb
4.	*Azadirachta indica* A. Juss.	Khadunimb	Meliaceae	April- June	Piles, rheumatic pain	Seed	Tree
5.	*Balanites aegyptiaca* (L.) Del.	Hingan	Zygophyllaceae	March-June	Asthma, eye spot, stomach pain and cough	Seed fruit	Tree
6.	*Butea monosperma* (Lam.)Taub.	Palas	Fabaceae	Dec-May	Swellings, dysentery, stomach ache, body heat, urinary complaints	Flower	Tree
7.	*Calotropis gigantia* (L.) R. Br.	Ruchkin/ Rui	Asclepiadaceae	Throughout the year	Jaundice migraine	Floral stalk	Shrub
8.	*Carica papaya* L.	Papai	Caricaceae	Throughout the year	Leucoderma	Latex of fruit	Tree
9.	*Cassia absus* L.	ChakanChimar	Caesalpiniaceae	Sept- Nov.	Eye troubles	Seed	Herb
10.	*Cassia fistula* L.	Bahava	Caesalpiniaceae	April- Oct.	Earache, constipation worms, bloated stomach constipation and chest pain in children	Fruit	Tree

Table 1: Contd……

Table 1 : Contd…….

11.	*Celastrus paniculatus* Willd.	Malkangani	Celastraceae	March- Oct.	Joint pains and swellings	Seed	Tree
12.	*Cordia dichotoma* Forest.f.	Bhokar	Ehretiaceae	Feb.-June	Loss of semen	Fruit	Tree
13.	*Cucumis melo* L.	Indrafal	Cucurbitaceae	July- Dec.	Malaria	Fruit	Climber
14.	*Cucumis setosus* Cogn.	Chewat	Cucurbitaceae	Aug- Sept.	Bloated stomach	Fruit	Herb
15.	*Daucas carota* L. var. *sativa* DC.	Gajar	Apiaceae	Dec.-April	Blood pressure	Fruit	Herb
16.	*Delonix regia* (Boj. ex HooK) Raf.	Gulmohar	Caesalpiniaceae	March-Aug.	Stomach ache, epilepsy	Fruit	Tree
17 .	*Diospyros melanoxylon* Roxb.	Tembharun	Ebenaceae	March- Dec.	Tooth ache, Contraceptive	Fruit	Tree
18 .	*Diplocyclos palmatus* (L.) C.Jeffrey	Shivalingi	Cucurbitaceae	Sept- Oct.	Stomach disorder and dysentery	Fruit	Climber
19.	*Emblica officinalis* Gaertn.	Awla	Euphorbiaceae	Fl.- Feb.- May Fr.- July –Aug.	Epilepsy, indigestion, diabetes, acidity, scabies	Fruit	Tree
20.	*Ensete superbum*(Roxb.) Cheesman	Rankeli / Kaundar	Musaceae	July- Aug	Dog bite, stomach ache, insanity	Seed	Herbs
21 .	*Ficus hispida* L.	Bhui umbar	Moraceae	Receptacle- Mar.- April	Tooth ache	Seed	Shrub
22.	*Gmelina arborea* Roxb.	Shivan	Verbenaceae	March - July	Jaundice	Fruit	Tree
23.	*Grewia tiliaefolia* Vahl.var.tiliaefolia	Dhaman	Tiliaceae	April- sept.	Stomach ache	Seed	Tree
24.	*Helicteres isora* L.	Ati	Sterculiaceae	July- Nov.	Infant dysentery, stomach pain	Fruit	Shrub
25.	*Holarrhena pubescens* (Buch- Ham.) Wall. ex .G. Don	Kuda	Apocynaceae	Fl.- April Fr.- Sept.- Feb.	Stomach pain and worms	Seed	Shrub
26.	*Lavandula bipinnata* (Roth) O. Kize	Gayandi	Lamiaceae	Aug.- Feb.	Fever	Flower	Herb
27.	*Limonia acidissima* Linn.	Kawath	Rutaceae	March- Aug.	Stomach pain	Fruit	Tree
28 .	*Madhuca longifolia* (Roxb.) Macbr	Moha	Sapotaceae	March- June	Scorpion bite, snake bite, asthma	Fruit	Tree
29.	*Millettia extensa* (Bth.) Baker	Agrivel	Fabaceae	July-sep	Cough	Seed	Woody climber
30.	*Momordica dioica* Roxb. ex. Willd.	Kanturle	Cucurbitaceae	July- Oct.	Blood impurities	Fruit	Climber
31.	*Morinda pubescens* J. E. Sm	Aal	Rubiaceae	Fl.- Mar.- April .Fr.- Jan..-Feb.	Dysentery	Fruit	Tree
32.	*Mucuna pruriens* (L.) DC.	Kachkhohari/ Kulikuyari	Fabaceae	Sept.- Dec.	Gastric disorders, heart bum, indigestion and asthma, scorpion bite, weakness	Seed	Herb
33.	*Pithecellobium dulce* (Roxb.) Bth.	Gorakh chinch	Caesalpiniaceae	Jan.- June	Conception (Fertility)	Fruit	Tree
34.	*Portulaca pilosa* L. subsp. *grandiflora* (Hook.) Geesink	Chini Gulab	Portulacaceae	Throughout the year	Scorpion bite	Flower stalk	Herb
35.	*Solanum anguivi* Lam.	Jangali Wange (Dorli)	Solanaceae	July- Oct.	Tooth infection	Seed	Shrub
36.	*Solanum virgianum* L.	Bhui-Ringani	Solanaceae	Dec.-March	Asthma, tooth ache	Fruit	Herb
37.	*Sterculia urens* Roxb.	Kadhai	Sterculiaceae	Nov.-May	Weakness	Seed	Tree
38.	*Syzygium cumini* (L) Skeels	Jambhul	Myrtaceae	May- Sept.	Vomiting, Leucorrhoea	Seed	Tree
39.	*Tamarindus indica* L.	Chinch	Caesalpiniaceae	Mar.-Nov.	Scorpion bite	Seed	Tree
40.	*Terminalia bellerica* (Gaertn.) Roxb.	Beheda	Combretaceae	May- Sept.	Cough, asthma, grey hair	Fruit seed	Tree
41.	*Terminalia chebula* Retz.	Hirda	Combretaceae	May- Dec.	Tooth ache	Fruit	Tree
42.	*Withania somnifera* (L.) Dunal	Achkan	Solanaceae	July- March	Leucorrhoea	Fruit	Shrub
43.	*Wrightia tinctoria* R.Br.	Dudh Kudi	Apocynaceae	Fl.-April- May Fr.- July- Feb.	Stomach ache and worms	Seed	Tree

Table 2: List of family, total number of species and their percentage

Sr.No.	Name of family	Total no. species	Percentage	NO.	List of family	Total no. species	Percentage
1.	Annonaceae	1	2.33	15	Meliaceae	1	2.33
2.	Apiaceae	1	2.33	16	Moraceae	1	2.33
3.	Apocynaceae	2	4.65	17	Musaceae	1	2.33
4.	Asclepiadaceae	1	2.33	18	Myrtaceae	1	2.33
5.	Caesalpiniaceae	5	11.63	19	Papaveraceae	1	2.33
6.	Caricaceae	1	2.33	20	Portulacaceae	1	2.33
7.	Celastraceae	1	2.33	21	Rubiaceae	1	2.33
8.	Combretaceae	2	4.65	22	Rutaceae	2	4.65
9.	Cucurbitaceae	4	9.30	23	Sapotaceae	1	2.33
10.	Ebenaceae	1	2.33	24	Solanaceae	3	6.98
11.	Ehretiaceae	1	2.33	25	Sterculiaceae	2	4.65
12.	Euphorbiaceae	1	2.33	26	Tiliaceae	1	2.33
13.	Fabaceae	3	6.98	27	Verbenaceae	1	2.33
14.	Lamiaceae	1	2.33	28	Zygophyllaceae	1	2.33
				#	Total family = 28	Total species= 43	100

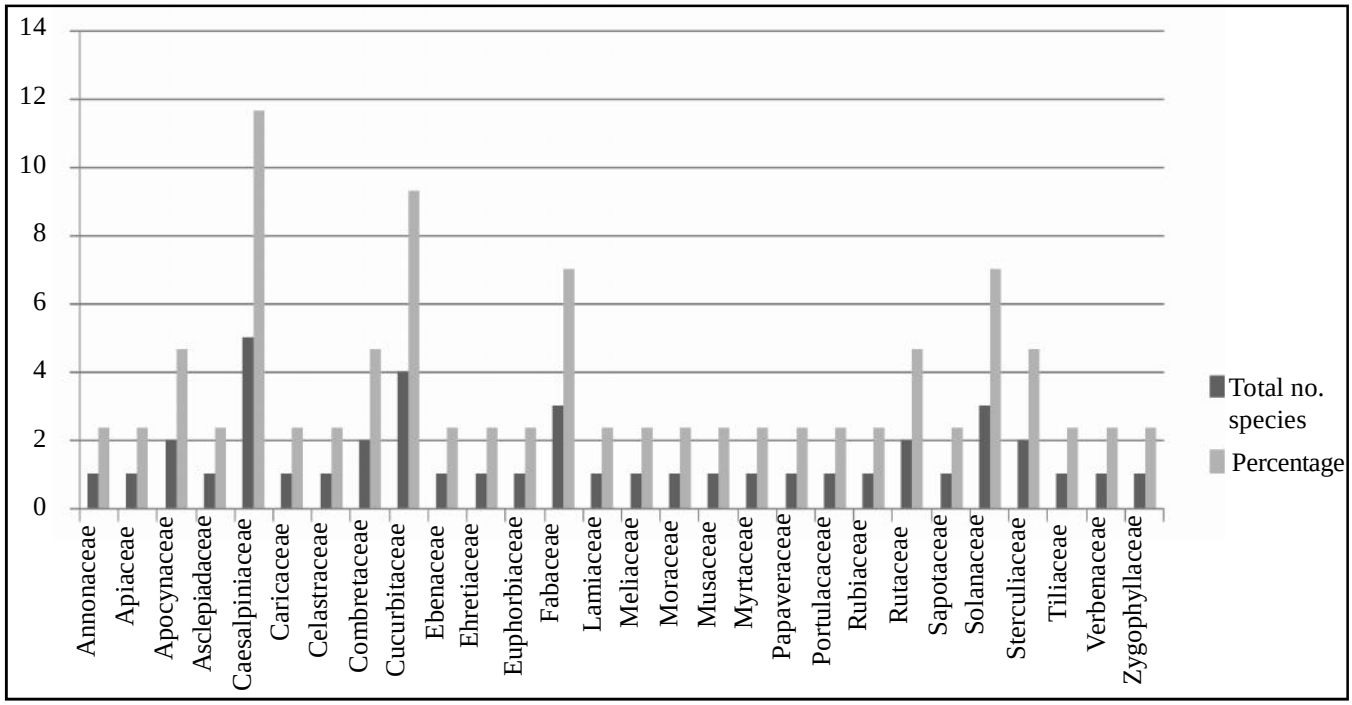

Fig. 1: List of family, total number of species and their percentage

Table 3 : Habit of plant with their percentage

Sr.No.	Habit of plant	No. of plant	Percentage (%)
1.	Trees	24	55.82
2.	Herbs	09	20.93
3.	Shrubs	06	13.95
4.	Climbers	04	9.30
#	Total	43	100

towards its west.

MATERIAL AND METHODS

Apart from the field survey, an extensive literature survey includes several publications (Lakshminarasimhan and Sharma , 1991; Cherian and Pataskar, 1972; Jadhav, 2002; Patil and Patil ,1990 and 2000 and Patil and Yadav, 2003) was carried out.

Semi structured questionnaire were prepared and interviews were carried out to gather Ethnomedicinal information by the local and tribal people.

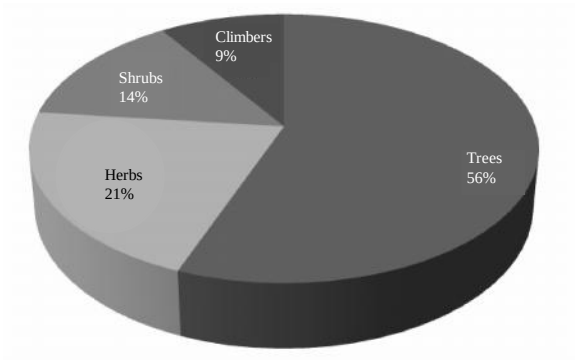

Fig . 2: Habit of plant with their percentage

Table 4: Plant part used and their percentage

Sr.No.	Parts used	No of plant	Percentage (%)
1.	Fruits	21	48.83
2.	Seeds	16	37.21
3.	Flowers	4	9.31
4.	Fruits and seeds	2	4.65
#	Total	43	100

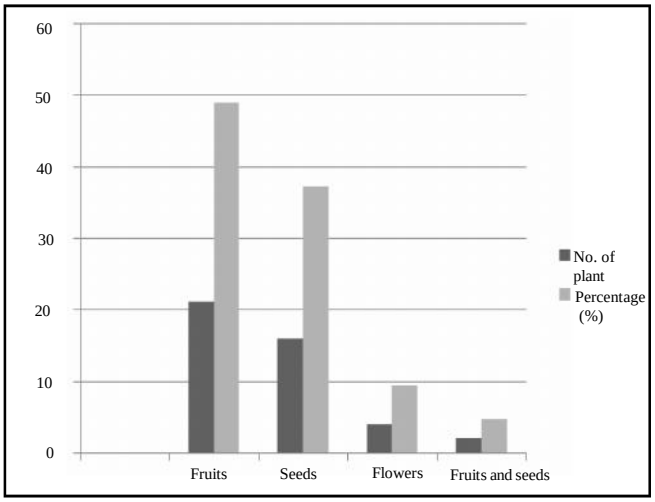

Fig. 3: Plant part used and their percentage

Table 5 : Name of genera and number of plant species belong to the genera

Sr. No	Name of genus	No. of plants species belong to genera	Sr. No.	Name of genus	No. of plants species belong to genera
1.	*Aegle marmelos*	1	21.	*Grewia tiliaefolia*	1
2.	*Annona squamosa*	1	22.	*Helicteres isora*	1
3.	*Argemone mexicana*	1	23.	*Holarrhena pubescens*	1
4.	*Azadirachta indica*	1	24.	*Lavandula bipinnata*	1
5.	*Balanites aegyptiaca*	1	25.	*Limonla acidissima*	1
6.	*Butea monosperma*	1	26.	*Madhuca longifolia*	1
7.	*Calotropis gigantia*	1	27.	*Millettia extensa*	1
8.	*Carica papaya*	1	28.	*Momordica dioica*	1
9.	*Cassia absus* / fistula	1+1=2	29.	*Morinda pubescens*	1
10.	*Celastrus paniculatus*	1	30.	*Mucuna pruriens*	1
11.	*Cordia dichotoma*	1	31.	*Pithecellobium dulce*	1
12.	*Cucumis melo / setosus*	1+1=2	32.	*Portulaca pilosa*	1
13.	*Daucas carota*	1	33.	*Solanum anguivi / virgianum*	1+1=2
14.	*Delonix regia*	1	34.	*Sterculia urens* Roxb.	1
15.	*Diospyros melanoxy*	1	35.	*Syzygium cumini*	1
16.	*Diplocyclos palmatus*	1	36.	*Tamarindus indica* L./	1
17.	*Emblica officinalis*	1	37.	*Terminalia* bellerica / *chebula*	1+1=2
18.	*Ensete superbum*	1	38.	*Withania somnifera*	1
19.	*Ficus hispida*	1	39.	*Wrightia tinctoria*	1
20.	*Gmelina arborea*	1	Total	Genera=39	Species=43

RESULTS AND DISCUSSION

In the present investigation a total 43 plant species belonging to 39 genera of 28 families were found to possess medicinal properties.

Out of 43 plant species, 24 species are trees, 9 are herbs, 6 are shrubs and climbers are 4. The percentage is like 55.81, 20.93, 13.95, 9.30, respectively.

Out of 43 plant species fruits of 21 plants, seeds of 16 plants, flowers of 4 plants and both fruits and seeds of same plant 2 plants are used for various diseases.

The major group of plants are belong to the families Caesalpinaceae,Cucurbitaceae,Fabaceae and Solanaceae etc. are used.

Out of 28 families only one family (Musaceae) belongs to monocot.

Acknowledgement :

Authors are greatful to Dr. P.H. Pawar, Principal and Dr. S.S. Yadav, Vice- Principal, Dr. Neelima Patil, Head, Department of Botany, Jaihind Educational Trust's, Z.B. Patil College, Dhule for providing necessary facilities and support.

REFERENCES

Adhikari, B.S., Babu, M.M., Saklani, P.L. and Rawat, G.S. (2010). Medicinal plants diversity and their conservation status in wildlife institute of India (WII) Campus, Dehradun. *Ethno-botanical Leaflets*, **14**:46-56.

Cherian, P.J. and Pataskar, R.D. (1972). Studies on the vegetation of Surgana-Harsul Ranges of the Sahyadries, Nasik district, Maharashtra Bull. *Bot.Sur.India* **2**(3&4) :381-397.

Jadhav, J.T. (2002). Phytosociological studies of the flora of Tryambakeshwar and Vani (Saptashrungi), Nasik district Ph.D. Thesis, North Maharashtra University, Jalgaon, M.S. (INDIA).

Lakshminarasimhan, P. and Sharma, B.D. (1991). *Flora of the Nasik district.* B.S.I. FI. India ser., Calcutta (W.B.) INDIA.

Patil, D.A. (1990).The vegetation of the river Girna (Maharashtra). *J. Econ.Tax.Bot.***14** (3): 655-657.

Patil, D.A. (2003), *Flora of Dhule and Nandurbar districts* (Maharashtra). Bishen Singh Mahaendrasing Pal Singh, Dehradun (UTTARAKHAND) INDIA.

Patil, M.V. and Patil, D.A. (2000).Some more wild edible plants of Nasik district(Maharashtra). *Ancient Sci. Life.*,**19**(374):102-104 .

Patil,S.H. and Yadav, S.S. (2003). Traditional medicinal plants of Satpuda, Nandurbar district, Maharashtra State, *Indian Forester*,**129** (2):1379-1385.

World Health Organization (1991).*Guideline for the practice of Traditional Medicine*(TRM/Geneva p.6).