

## Diversity and Assessment of Indigenous Medicinal Plants From Religious Sacred Hills in Hatkangale tahsil Dist. Kolhapur, Maharashtra

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### Abstract: -

Hatkanangle tahsil is one of the popular and holy places in Kolhapur district. Holy places such as Bahubali hills, Ramling hills, Babu-Jamal darga hills, Dhuleshwar hills, Raspeeth hills (Buddha Hills, Narande hills. are located in outsources of Sahayadri ranges of Western Ghats. The hilly plains in these holy places comprises of deep black soil while slope comprises gravel soil. An attempt has been made to survey and document medicinal plants in religious holy places of Babujamal dararga hills, Ramling hills, Dhuleshwar hills, Bahubali hills and Raspeeth hills of Hatkangale tal., dist. Kolhapur which had great significance in utilization of wild resources pertaining to ethno-botanical plants and local medicinal plant (adiabatic). During the survey, 184 plants were assessed by Quadrat method. The plants are found to have medicinal value and remedy for different health problems to local people. It was revealed that, these wild resources (medicinal plants) were utilized by local people for their therapeutic needs. These medicinal plants are very popular among local people and farmers. These plants are utilized frequently in various ailments

**Keywords:** Babujamal darga hills, Ramling hills, Dhuleshwar hills, Bahubali hills, Raspeeth hills (Buddha hills, Local - medicinal plants, Assessment.

### Introduction:

It is a fact that over 70-80% of the world population depends on the crude plant drugs to get rid of their health ailments. An Indian material medica includes about 2000 drugs of natural origin derived from different traditional systems and folklore medicines (Narayan et al, 1998) while in modern medicines over 130 drugs originally extracted from higher plants (Dev, 1997). In last few decades, new trends of 'Herbal Drugs' from medicinal plants are becoming more prominently apparent (Dev 1999, Bisset 1994). Now a days it has been estimated that the present global market of indigenous medicine is increasing at the rate of 20% annually (Dev, 1997). The concept of Ayurveda began and flourished between 2500-500 BC in India. The use of medicinal plants were documented in old literature, majority of them were found in Rig-Veda and Athervveda and also in Charaka Sanhita (900 BC), Sushruta Sanhita (600 BC) and Ashtang Hridaya (700 AD). Thus ayurveda is recognized globally by various scientific community.

India is a store house of medicinal plants and there are almost 1250 Indian medicinal plants. (Chatterjee and Pakarshi, 1991). Survey of Kolhapur district shows almost 600 plant species of various therapeutic value. Out of them some

important medicinal plants are found in the Dhuleshwar hills. Dhuleshwar hills is one of the holy places of Hatkanangale tahsil. It's situated at 16°45'N, 74°22' E and at an altitude of 773 m. from mean sea level. The vegetation is dry deciduous (Yadav and Sardesai, 2000). Dhuleshwar is the part and parcel of Sahayadri ranges. The plant diversity of Dhuleshwar hills shows different medicinal plants in the form of herbs, shrubs, trees and climbers.

The common medicinal plants screened in this area are as follows

*Gloriosa superba* L., *Discoria bulbifera* L., *Plumbago zeylanica* L., *Boerhavia diffusa* L., *Vitex negundo*, *Launea procumbens*, *Lantana camara* L., *Terminalia arjuna*, *Clerodendrum serratum*, *Grewia tiliaefolia* etc.

### Material and Method:

The assessment of medicinal plants was studied with the help of quadrat method. The shape of quadrat is usually square. The size of quadrat varies with the type of vegetation to be studied. The quadrat of 10 x 10 m size was laid randomly at three different places and species were recorded with their number in each quadrat. The abundance, density, frequency and frequency percentage of each species were determined by using the standard methods. (Kapur and Rani, 2000). The herbarium specimens were maintained in the laboratory by following standard herbarium techniques. Some selected plants are assessed in the following tabulate form.

**Observation:**

**Table.1- Assessment of Ethan medicinal plants by Quadrate analysis:**

Sr. No.	Name of plants species	Quadrate			Total No. of species in all Qua.	Total no. of Qua. studied	No. of Qua. in which species occur	Abundance	Density	Frequency %	Frequency class
		1	2	3							
1.	<i>Carisa carrandus L.</i>	02	05	03	10	03	03	3.33	3.33	100	E
2.	<i>Discoricia bulbifloraL.</i>	05	-	07	12	03	02	4	6	66	D
3.	<i>Plumbago zeylanica L</i>	03	02	06	11	03	03	3.66	3.66	100	E
4.	<i>Commelina benghalensis L.</i>	08	06	10	24	03	03	8.0	8	100	E
5.	<i>Lagacea mollis.</i>	03	15	05	23	03	03	7.66	7.66	100	E
6.	<i>Acalypha indica L.</i>	14	15	17	46	03	03	15.33	15.33	100	E
7.	<i>Lavandula burmanniBenth.</i>	11	24	13	48	03	03	16.0	16.0	100	E
8.	<i>Tribulus terrestris L.</i>	26	37	29	94	03	03	31.33	31.33	100	E
9.	<i>Stylosathes mucronate Wild.</i>	02	14	17	33	03	03	11.0	11.0	100	E
10.	<i>Cyanotis axillaris (L.) D. Don.</i>	13	07	09	29	03	03	9.66	9.66	100	E
11.	<i>Spermacoce hispida</i>	19	27	32	79	03	03	26.33	26.33	100	E
12.	<i>Rungia Crenata Andrews</i>	02	26	08	36	03	03	12	12	100	E
13.	<i>Euphorbia hirta L.</i>	21	17	33	73	03	03	24.33	24.33	100	E
14.	<i>Bursera penicillata (Sesse&amp;Moc ex DC.)</i>	03	05	04	12	03	03	4	4	100	E
15.	<i>Clerodendrum serratum</i>	20	23	18	61	03	03	20.33	20.33	100	E
16.	<i>Panicum americanum L.</i>	03	---	07	10	03	02	3.33	5.66	100	E
17.	<i>Polygala arvensis Willd.</i>	02	---	07	09	03	02	3.0	3.0	100	E
18.	<i>Acanthospermum hispidatum L.</i>	08	11	16	35	03	03	11.66	11.66	100	E
19.	<i>Gloriosa superba L.</i>	06	11	10	27	03	03	9.0	9.0	100	E
20.	<i>Bidens Pilosa L.</i>	133	106	95	334	03	03	111.33	111.33	100	E
21.	<i>Evolvulus alsinoides L.</i>	06	05	07	18	03	03	6.0	6.0	100	E
22.	<i>Echinops echinatus Roxb.</i>	15	06	---	21	03	02	7.0	10.5	66.66	E
23.	<i>Opuntia dilleni. Grah.</i>	07	09	08	24	03	03	8.0	8.0	100	E
24.	<i>Pergularia arborea. Dennst.</i>	03	---	04	07	03	02	2.5	3.5	66.0	D
25.	<i>Dodonea viscosa J acp.</i>	02	04	06	12	03	03	4.0	4.0	100	E
26.	<i>Iphigenia indica (L.) A Cray</i>	02	05	---	07	03	02	3.5	3.5	66.0	D
27.	<i>Terminalia arjunaL.</i>		---	02	07	03	02	2.5	3.5	66.0	D
28.	<i>Dichoma tomentosa Causs.</i>	03	01	06	10	03	03	9.5	9.5	100	E
29.	<i>Vitex negundo L</i>	04	-	05	03	-	-	07	02	66.0	D
30.	<i>Neanotis foetida (Hook.</i>	15	22	18	17	48	25	36	15	100	E

	<i>F.) W. H. Lewis.</i>										
31.	<i>Ocimum sanctum.L.</i>	10	10	20	12	56	12	06	36	100	E.
32.	<i>Asparagus racemosus Wild Var. avanica</i>	05	08	12	03	21	01	-	04	66.0	D.
33.	<i>Withania somnifera L.</i>	02	06	03	04	10	08	01	02	66.0	D
34.	<i>Mimosa pudica L.</i>	14	22	20	14	05	36	16	25	100.0	E
35.	<i>Eclipta alba (L.) Hassk.</i>	02	-	14	06	08	07	02	03	66.0	D.
36.	<i>Curculigo orchioidesGarten</i>	10	02	09	03	06	-	07	01	66.0	D
37.	<i>Securinea leucopyrusMuell.</i>	16	12	45	26	-	08	06	25	100	E
38.	<i>Tinospora cordifolia Miers</i>	05	01	-	1	03	-	01	05	66.0	D
39	<i>Adhatoda zeylanica Medic.</i>	02	04	01	02	03	02	-	02	66.0	D
40	<i>Buchmania lanzan Spreng</i>	20	06	02	-	-	05	01	-	66.0	D.
41	<i>Grewia tiliaefolia.</i>	02	-	02	-	04	06	01	-	66.0	D
42	<i>Cryptostegia grandiflora R.Br.</i>	06	13	04	12	08	09	06	04	66.0	D
43	<i>Bacopa monnieri (Micha)</i>	05	02	09	-	12	08	22	09	100	E
44	<i>Sterculia urens Roxb.</i>	10	16	14	-	12	20	-	15	100	E
45	<i>Rauwolfia serpentine (Bth)</i>	02	06	03	-	05	04	03	-	66.0	D
46	<i>Boerhavia diffusa( L.)</i>	06	20	36	14	41	-	22	06	100	E
47	<i>Aloe vera</i>	03	02	06	11	03	03	3.66	3.66	100	E
48	<i>Solanum xanthocarpum L.</i>	02	05	---	07	03	02	3.5	3.5	66.0	D
49	<i>Riccinus communis</i>	05	02	09	-	12	08	22	09	100	E
50	<i>Euphobia ligularia Roxb.</i>	20	23	18	61	03	03	20.33	20.33	100	E
51	<i>Sopubia delphinifolia (L.) G.Don</i>	08	11	16	35	03	03	11.66	11.66	100	E
52	<i>Rhusmis urensis</i>	02	04	01	02	03	02	-	02	66.0	D
53	<i>Abutilon indicum (L.) Sweet</i>	20	23	18	61	03	03	20.33	20.33	100	E
54	<i>Enicostea axillare L.</i>										
55	<i>Piper longum L. Sp.</i>	19	27	32	79	03	03	26.33	26.33	100	E
56	<i>Trichodesma indicum lehn</i>	13	07	09	29	03	03	9.66	9.66	100	E
57	<i>Mucona pruniens De.</i>	02	-	14	06	08	07	02	03	66.0	D.
58	<i>Gymnosporia montanum Benth</i>	26	37	29	94	03	03	31.33	31.33	100	E
59	<i>Cynotics tuberosa [Roxb]</i>	15	22	40	41	25	12	40	10	100	E
60	<i>Ruta graveolens L.</i>	05	01	-	1	03	-	01	05	66.0	D
61	<i>Solanum nigrum L...</i>	02	05	03	10	03	03	3.33	3.33	100	E
62	<i>Cathranthus roseus (L.) G. Don</i>	03	15	05	23	03	03	7.66	7.66	100	E
63	<i>Gymnema sylvestre R. Br.ex</i>	02	04	04	10	03	03	3.33	3.33	100	E
64	<i>Launaea pinnatifida Roxb.</i>	06	13	04	12	08	09	06	04	66.0	D
65	<i>Enicostemma axillare L.</i>	05	01	-	1	03	-	01	05	66.0	D
66	<i>Malvarum triuspium (R.Br.) A.Gray</i>	14	15	17	46	03	03	15.33	15.33	100	E

67	<i>Leucasaspera [wild]Link enum</i>	14	22	20	14	05	36	16	25	100.0	E
68	<i>Dodona viscosa (Miller).</i>										
69	<i>Launaea procumbence (Roxb.) Ramayya &amp; Rajgopal</i>	03	05	04	12	03	03	4	4	100	E
70	<i>Desmodium triflorum (Benth) Drum &amp; Thoth</i>	02	26	08	36	03	03	12	12	100	E
71	<i>Indoneesilla echioides L.</i>	02	05	---	07	03	02	3.5	3.5	66.0	D
72	<i>Cassia auriculata L.</i>	19	27	32	79	03	03	26.33	26.33	100	E
73	<i>Withania somanifera L. Dunal</i>	05	-	07	12	03	02	4	6	66	D
74	<i>Lantana camara auct. non. L.</i>	15	06	---	21	03	02	7.0	10.5	66.66	E
75	<i>Bougainvillea spectabilis.</i>	05	02	09	-	12	08	22	09	100	E
76	<i>Polycarpea corymbosa L.</i>	02	04	01	02	03	02	-	02	66.0	D
77	<i>Dodonia viscosa L.</i>	05	01	-	1	03	-	01	05	66.0	D
78	<i>Asperags recemosus Wild</i>	03	---	07	10	03	02	3.33	5.66	100	E
79	<i>Iphgenia indica L. A. Gray</i>	02	05	---	07	03	02	3.5	3.5	66.0	D
80	<i>Malarum triatriatum (R.Br.) A.Gray</i>	11	24	13	48	03	03	16.0	16.0	100	E

**Table**

**: -Medicinal uses and Plants listed at Ramling Hills/ Babu-Jamal Hills/ Bahu-bali Hills/Dhulehwar Hills/ Narande Hills/ Raspeeth Hills.**

**1. Ramling Hills Assessment**

Sr. No.	Name of plants species	Parts used	Medicinal value
1.	<i>Carisa carrandus L.</i>	Fruits, Leaves	Remedy in Hemoglobin loss and anti acidic
2.	<i>Buchnanania lanzan Spreng.</i>	Seeds, Fruit pulp	Stomach ache
3.	<i>Vitex negundo L.</i>	Leaves, Fruits	Poultice of leavesfor inflammation
4.	<i>Ocimum sanctum L.</i>	Leaves, Seeds.	Cough and cold
5.	<i>Cryptostegia grandiflora R. Br.</i>	Bark, latex and leaves	External application of Poultice, leaves for inflammation, latex against boils, scabies
6.	<i>Neanotis foetida (Hook. f.) W. H. Lewis</i>	Leaves	Joint pains, Arthritis
7.	<i>Launaea procumbence (Roxb.) Ramayya &amp; Rajgopal</i>	Leaves juice	Heart problems
8.	<i>Desmodium triflorum (Benth) Drum &amp; Thoth</i>	-----	-----
9.	<i>Withania somanifera L. Dunal</i>	Root, leaves	Tonic, Churn, Nervous disorders medicine.
10.	<i>Lantana camara auct. non. L.</i>	Leaves	Injuries
11.	<i>Gymnosporia montanum Benth</i>	-----	-----
12.	<i>Terminalia arjuna (Roxb) Wt. &amp; Arn.</i>	Bark, Fruits.	Decoction of bark powder, blood purification, decoction with milk for heart problems

<b>13.</b>	<i>Dioscoria bulbifera L.</i>	Tuber	Urinary, energy
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**Babu-jamal Hills.**

<b>14.</b>	<i>Gymnemasyvestre R.Br.ex</i>	Leaves, Roots	<b>Diabetic medicine and liver tonic snake bite.</b>
<b>15.</b>	<i>Lavandulaburmani /L.bipinnata</i>	Leaves	Common on hillslopes.
<b>16.</b>	<i>Burserapenicillata [Sesse] [Moc.ex.D.C.]</i>	Stem and Wood	Oil is used in medicine.
<b>17</b>	<i>Polygala aruensis Wild</i>	Roots	Peculiar smell of zandu balm.
<b>18</b>	<i>Bouganvillea spectabilusl.</i>	Flower, Leaves.	Used in folk medicine.Anti-ulcerative, Anti- microbial
<b>19</b>	<i>Polycarpeacorymbosa L.</i>	All parts	Occasional on hill slopes on rocky soil
<b>20</b>	<i>Malvarumtriuspiatum(R.Br.) A.Gray</i>	Leaves and seeds	Leaves and seeds are used in Ayurvedic medicines.
<b>21</b>	<i>Trichodesma indicum lehn</i>	Fruits	Common on hill slopes used medicine.
<b>22</b>	<i>Leucasaspera [wild]Link enum</i>	Stem and Roots	Used in many Ayurvedic medicine
<b>23</b>	<i>Iphigenia indica L. A.Gray</i>	Seeds	Common species used as source of Colchicine.
<b>24</b>	<i>Tribulusterrestris L.</i>	Seeds and Leaves	Urinary medicine.
<b>25</b>	<i>Enicostemmaaxillare L.</i>	Leaves & Roots	Joint pain medicine.
<b>26</b>	<i>Echinopsechinatus (DC)</i>	All parts	Skin diseases, cough syrups.
<b>27</b>	<i>Dodona viscosa(Miller).</i>	Laves	Leaves tied along with poultice & muscle pans &swelling.
<b>28</b>	<i>Grewiatiliaefoliavahl.</i>	fruits	Againt intestinal gas problem.
<b>29</b>	<i>Cynoticstuberosa [Roxb]</i>	tubers	Common in moist grassland.
<b>30</b>	<i>Cassia auriculata L.</i>	Leaves and seeds , Roots , Flower	Leaves and seeds are used in Ayurvedic medicines, jaundice and skin diseases.
<b>31</b>	<i>Rhusmisurensis</i>	Leaves and Roots	Used in HIV medicines.
<b>32</b>	<i>Bacopamonnierimicha</i>	All parts	Children cough cold.Historia medicine etc.
<b>33</b>	<i>Plumbago zeylanica L.</i>	All parts	Medicine used in skin diseases
<b>34</b>	<i>Malarumtriatrium(R.Br.)A.Gray</i>	Leaves and seeds	Leaves and seeds are used in Ayurvedic medicines.
<b>35</b>	<i>Withania somniferaL.Dunal</i>	Root, stem and leaves	Stimulating medicine
<b>36</b>	<i>Iphgenia indica L. A.Gray</i>	Seeds	Common species used as source of Colchicines.

37	<i>Boerhavia difusa L.</i>	All parts	Swelling and diseases.
38	<i>Enicostea axillare L.</i>	Leaves & Roots	Joint pain medicine.
39	<i>Mucona pruniens De.</i>	Seed	Asthma small insect medicine.
40	<i>Asperagus recemosus Wild</i>	Leaves, roots.	Urine disease and acidity.
41	<i>Abutilon indicum(L.) Sweet</i>	Leaves, Stem	Ayurvedic medicine
42	<i>Cathranthus roseus (L.)G. Don</i>	Bark and Seeds	Bark and seed used in Aurvedic medicine specially stomach disorder.
43	<i>Dodonia viscosa L.</i>	Leaves	Leaves tied along with muscle.
44	<i>Rutagraveolens L.</i>	Stem	Oil used in medicine.
45	<i>Solanum nigrum L...</i>	Fruits, seed	Used in medicine.
46	<i>Piper longumL.Sp.</i>	Fruits	Dried, Unripe fruits and roots used in native medicine.
47	<i>Launaea pinnatifida Roxb.</i>	Roots ad leaves	Health tonic
48	<i>Sopubia delphiniifolia(l.) G.Don</i>	Leaves	Common in grassland & Wet field.
43	<i>Euphobia ligularia Roxb.</i>	Latex, Stem.	Used in Ayurvedic medicine.
50	<i>Riccinus communis</i>	seeds	Used in dental medicine, snake bite
51	<i>Solanum xanthocarpumL.</i>	All parts	Used in medicine
52	<i>Sterculia urens Roxb.</i>	Bark, Leaves.	Cough, Diarrheic, bone medicine.
53	<i>Commelina benghalensis L.</i>	Leaves,tubers	Skin disease medicine
54	<i>Aloe vera L.</i>	Leave	Cough, juice anti-inflammatory.
55	<i>Lagacea mollis</i>	Leaves	Skin disorder, Fever
56	<i>Acalypha indica L.</i>	Stem, Leaves, Roots	Anti-bacterial, anti-ulcer
57	<i>Stylosathes mucronate Wild.</i>	Whole plant	Antimicrobial
58	<i>Cyanotis axillaris (L.) D. Don</i>	Whole Plant	Boils and Ascites
59	<i>Spermacoce hispida</i>	Root, Stem, Leaves	Urinary infections, internal heat
60	<i>Rungia Crenata Andrews</i>	Whole Plant	Diuretic, Antimicrobial
61	<i>Euphorbia hirta L</i>	Leaves, Roots, Stem	Dysentery, Jaundice, Pimples
62	<i>Clerodendrum serratum</i>	Whole Plant	Cough, Cold.
63	<i>Panicum americanum L.</i>	Leaves	Jaundice, Diabetes
64	<i>Acanthospermum hispidatum</i>	Leaves and Flowering Top	Jaundice, malaria, Vomiting
65	<i>Gloriosa superb L.</i>	Tubers and Seed	Antiperiodic and anti-helminthic
66	<i>Bidens Pilosa L.</i>	Leaves	Ulcer, Diabetics
67	<i>Evolvulus alsinoides L.</i>	Whole plant	Blood purifier
68	<i>Opuntia dilleni</i>	Leaves, roots	Diabetes, High Cholesterol
69	<i>Pergularia arborea</i>	Whole plant	Asthma, bronchitis

<b>70</b>	<i>Dodonea viscosa</i>	Leaves, Roots, Stem	Antimicrobial, anti-inflammatory
<b>71</b>	<i>Dichoma tomentosa</i>	Whole plant	Toothache
<b>72</b>	<i>Asparagus racemosus Wild Var. avanica</i>	Roots, Leaves	Upset stomach, anxiety
<b>73</b>	<i>Mimosa pudica</i>	Roots, leaves	Antibacterial, Antivenom
<b>74</b>	<i>Eclipta alba</i>	Root, leaves	Increase digestive system
<b>75</b>	<i>Curculigo orchioides Garten</i>	Roots, Leaves	Arthretis, Knee Joint
<b>76</b>	<i>Securinega leucopyrus Muell.</i>	Roots, Leaves	Wound healing
<b>77</b>	<i>Tinospora cordifolia</i>	Whole plant	Fever, Bone fracture
<b>78</b>	<i>Adhatoda zeylanica</i>	Leaves, roots, Flower and Bark	Cold, cough
<b>79</b>	<i>Rauwolfia serpentine (Bth)</i>	Leaf and root extract	Mental disorder
<b>80</b>	<i>Indoneesilla echioides</i>		Goiter, Liver disease

**Conclusion:-**

It is evident from the survey of indigenous medicinal plants, which were assessed from the holy places of Hatkanagle tahsil viz., Ramling hills, Babu-Jamal hills, Bahu-bali hills, Dhuleshwar hills, Narande hills, and Raspeeth hills that about 184 plants are found to be having traditional medicinal importance. All of the medicinally important plants were locally used for remedies against different ailments and curing the diseases.

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