Indian J. Applied & Pure Bio. Vol. 31(1), 91-104 (2016).

Uses of weeds as Medicine in Durg District of Chhattisgarh

A. K. Shrivastava[1]; S. Patra[2] and A. Tikariha*

(Affiliation: Pt. Ravishankar Shukla University, Raipur, Chhattisgarh)
([1]P.G. Department of Botany, Govt. D. T. College, Utai, Durg, C.G.) (India)
([2*]P.G. Department of Botany, Govt. N.P.G. College of Science, Raipur, C.G.) (India)
(E-mail ID anitatikariha@gmail.com; 9827402592)

Abstract

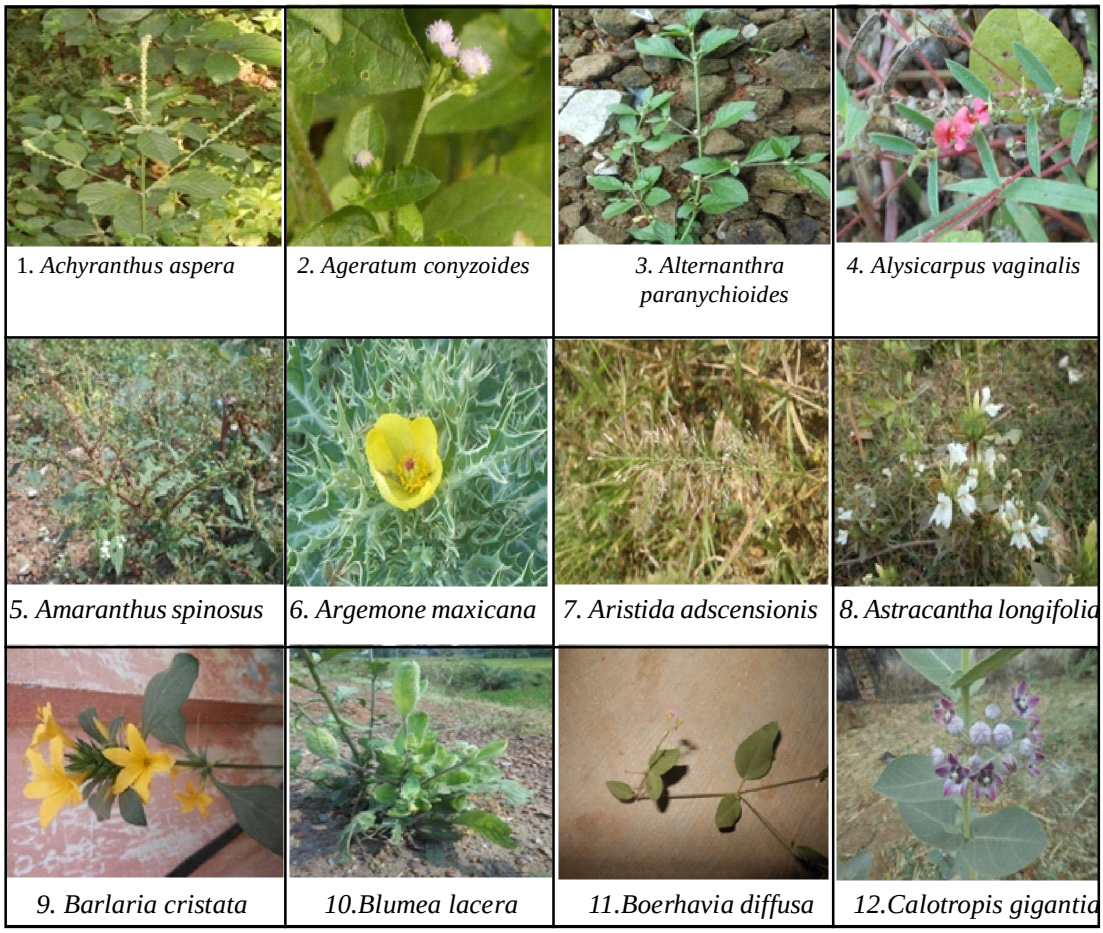
Survey done in 2012-2013 and 2013-2014 in Durg district of Chhattisgarh state showed the biodiversity of different weeds. About 21 families with 42 genera and 46 species were studied. Out of which, 43 weeds belonged to 20 families of Angiosperms having medicinal properties. Among them, 07 belonged to monocot where as 36 belonged to dicot group. They were reported to be used in treating various diseases. Chhattisgarh is rich in biodiversity, having wild as well as cultivated plant of the weeds are allergenic, poisonous and harmful to mankind, while the others have medicinal value.

Durg district of Herbal Chhattisgarh state of India is famous for its natural resources, tribes and rich Biodiversity since ancient time. Site selection Durg district is situated in the 21' 13^0 N and 81' 26^0 E. The state is endowed with 44% of forest cover. A large size of population resides in forest and villages. Plants play important role in their life particularly in dialects, socioreligious ceremonies, traditional and domestic system of medicine. The knowledge of medicinal weeds is being orally transmitted by the tribal's and others old family members, from one generation to another[20,25]. Thus present work is taken into consideration to prepare a collection data for those weeds, which are used as medicine in the district.

Fig.1- Map : Chhattisgarh

1. The weed flora and information based on weeds were collected from Durg and its neighboring areas– Bhilai Steel Plant, Bhilai Industrial area, Chunkatta Bhilai Area etc. The extensive and intensive seasonal survey of weed flora in different habitat of waste land was done for the collection of weed flora and for the preparation of herbarium. The herbarium was prepared, labeled and stored in the herbarium of the department. The identified weeds were further studied for their medicinal value and properties. Unwanted plant in crop fields are very common, dominant and easily available, but proper utilization of such weeds for welfare of people is least reported[1,5,10,12,21,23,29,30,32,33].
2. The information was gathered by contacting the farmers, local people, hakims, elderly people, vaidyas, Ayurvedic doctors who were interviewed gave knowledge about the Ethnomedicinal uses of these weeds reference books were referred for literature [11,14,18,26,28].
3. E-photo / Herbarium.

Figure: 2 : Weeds as Medicine

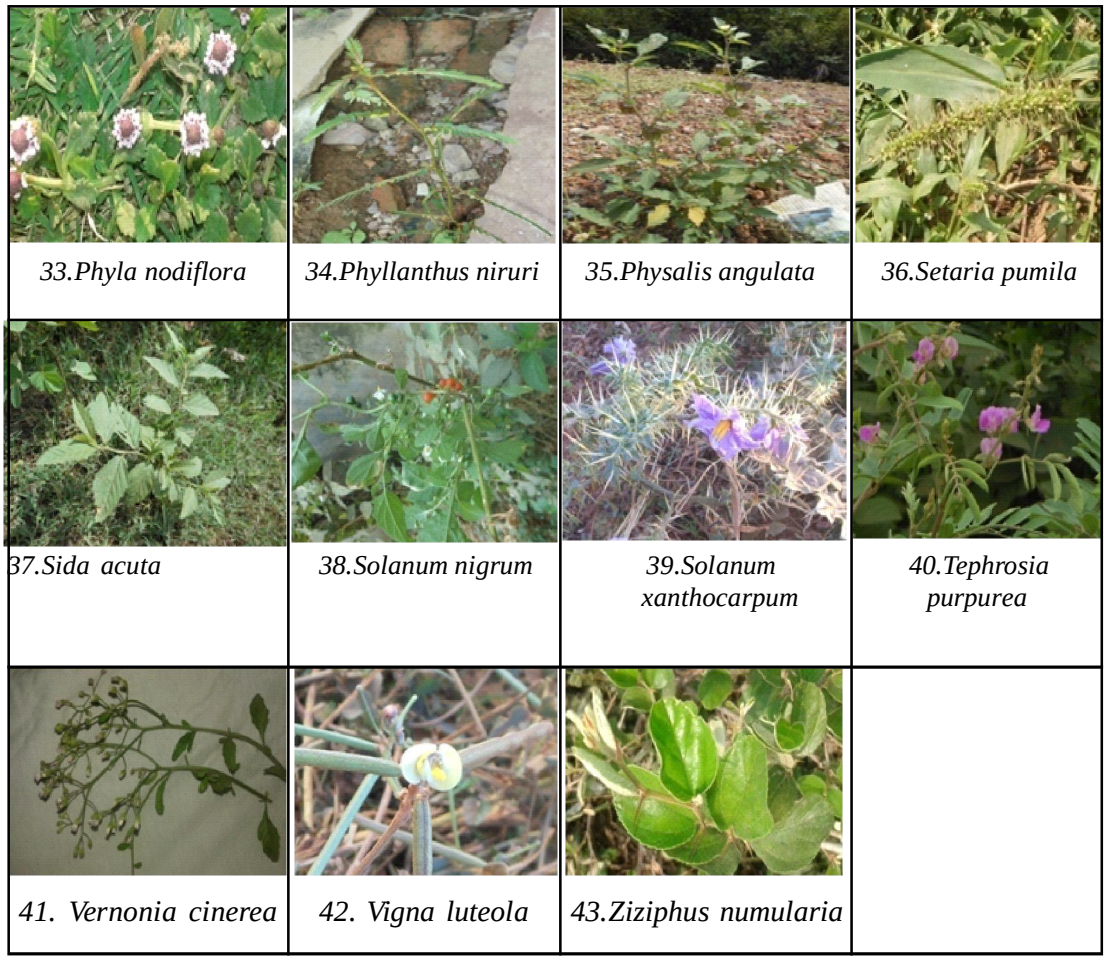


1. *Achyranthus aspera* | *2. Ageratum conyzoides* | *3. Alternanthra paranychioides* | *4. Alysicarpus vaginalis*

5. Amaranthus spinosus | *6. Argemone maxicana* | *7. Aristida adscensionis* | *8. Astracantha longifolia*

9. Barlaria cristata | *10.Blumea lacera* | *11.Boerhavia diffusa* | *12.Calotropis gigantia*

			
13.Calotropis procera	*14.Cassia tora*	*15.Centella asiatica*	*16.Chenopodium album*
			
17.Cleome viscosa	*18.Celosia argentia*	*19.Coix aquatica*	*20.Commelina benghalensis*
			
21.Cynodon dactylon	*22.Cyperus rotundus*	*23.Cyperus sphacelatus*	*24.Datura alba*
			
25.Desmodium trifolium	*26.Eleusine indica*	*27.Euphorbia hirta*	*28.Lantana camara*
			
29.Leucas aspera	*30.Mimosa pudica*	*31.Ocimum basilicum*	*32.Persicaria lapathiflolia*



33.Phyla nodiflora	*34.Phyllanthus niruri*	*35.Physalis angulata*	*36.Setaria pumila*
37.Sida acuta	*38.Solanum nigrum*	*39.Solanum xanthocarpum*	*40.Tephrosia purpurea*
41. Vernonia cinerea	*42. Vigna luteola*	*43.Ziziphus numularia*	

Fig. 2- E-photo of weeds species

All the weeds were arranged according to Botanical name, Vernacular (local) name, family and Ethnomedicinal uses and were summarized[30] (Table-1). Weeds grow tremendously in crop fields and these problems are faced by every farmer but now a day's these problematic, unwanted weeds can be one of the major sources of the Ethnomedicinal importance[2,4,7,8,15-17,2427,34]. These weeds are also used by vaidyas for different formulation and most of the pharmaceutical industries to obtained different drugs from weeds[3,9,13]. Weeds, once regarded as waste should be preserved for medicinal value which is found in waste land and on bunds to enhance the productivity of weeds as well as main crop. It also conserves the soil by preventing soil erosion and retains moisture.

Table-1. Name of plant with ethnomedicinal uses

S. No.	Botanical Name	Local Name	Family	Used plant parts	Ethnomedicinal Uses
1.	*Achyranthus aspera*	Chirchita	Amaranthaceae	Stem	Anti-venom properties for scorpion bite.
2.	*Ageratum conyzoides*	Gandhila	Asteraceae	Whole plant	Allelopathyic effects,heals wounds, relieves pain
3	*Alternanthra paranychioides*	-	Amaranthaceae	Whole plant	Flatulence, skin disease, diarrhea, wounds, cough, bronchitis and diabetes.
4	*Alysicarpus vaginalis*	-	Fabaceae	Whole plant	Diarrhea, worms, swelling, cystitis
5	*Amaranthus spinosus*	Chaulai	Chenopodiaceae	Seed, root, leaf, stem	Toothache, dropsy, antioxidant
6	*Argemone maxicana*	PiliKateri	Papaveraceae	Whole plant	Opthalmia, skin disease, leprosy and opacity of cornea. Seeds are purgative and sedative,
7	*Aristida adscensionis*	-	Poaceae	Whole plant	Anti microbial activity, itching, ringworms
8	*Astracantha longifolia*	Tal-makhana	Acanthaceae	Whole plant	Jaundice, rheumatism and dropsy.
9	*Barlaria alba*	Kesria	Acanthaceae	Whole plant	Skin diseases, dysentery, cough, fever, wounds and rheumatism.
10	*Blumea lacera*	Kukurmutta	Asteraceae	Whole plant	Bronchial asthma.
11	*Boerhavia diffusa*	Pathri bhaji	Carryophyllaceae	Root, leaf, stem	Anemia
12	*Calotropis gigantia*	Madar	Asclepiadaceae	Root	Jaundice
13	*Calotropis procera*	Ak	Asclepiadaceae	Flower	Antihelmintic and an expectorant
14	*Cassia tora*	Charouta	Fabaceae	Leaf, seed, root	Skin troubles, fever, snakebite
15	*Centella asiatica*	Bramhi	Apiaceae	Leaves	Cholera and also to cure madness.
16	*Chenopodium album*	Bathua	Chenopodiaceae	Leaf, stem, seed	The oil extracted from seed is used for the treatment of hookworm.

17	*Cleome viscose*	Hur-huria	Capparidaceae	Leaf, seed, stem	Treatment of wound, ear ache, deafness, swellings, seed gastric problems
18	*Cleosia argentea*	Silyari	Amaranthaceae	Flower, seed	Haemostatic, ophthalmic, parasiticide, poultice, kidney troubles
19	*Coix aquatica*	-	Poaceae	Leaf, stem	Invigorate the spleen function and promote urination, diarrhea
20	*Commelina benghalensis* L.	Kauwa-kini	Commelinaceae	Leaf, stem, flower	Dysentery and paste applied to treatment of pimples.
21	*Cynodon dactylon*	Dub ghass	Poaceae	Whole plant/tuber	Antiseptic, astringent, diuretic and emollient.
22	*Cyperus rotundus*	Motha	Cyperaceae	Rhizome/ tuber	In skin, urinary, digestive and reproductive diseases
23	*Cyperus sphacelatus*	-	Cyperaceae		
24	*Datura alba*	Dhatura	Solanaceae	Leaf, seed, root	Healing of wounds, inflammation, skin infections, leprosy, diarrhea, scabies, ulcer, snake bite.
25	*Desmodium trifolium*	-	Fabaceae	Whole plant	Piles
26	*Eleusine indica*	-	Poaceae	Leaf, root, seed	Diphoretic, Diuretic
27	*Euphorbia hirta*	Dudhi	Euphorbiaceae	Leaf, flower, fruit	Cough, diarrhea, asthma, stomach ailments.
28	*Lantana camara*	Gotiful	Verbenaceae	Leaf, flower, fruit	Anti-mycobacterial activities
29	*Leucas aspera*	Gumma	Lamiaceae	Whole plant	Anti-venom properties, cough & cold, swelling
30	*Mimosa pudica*	Chhui-mui	Fabaceae	Leaf, root	Diarrhea, Amoebic dysentery, skin diseases, bronchitis
31	*Ocimum basilicum*	Ban Tulsa	Lamiaceae	Whole plant	Antibacterial, antifungal, antispasmodic, carminative, diaphoretic, digestive,

					expectorant, stimulant, stomachic,refrigerant etc.
32	*Persicaria lapathifolia*	-	Polygoniaceae	Seed	Antifungal
33	*Phyla nodiflora*	-	Verbenaceae	Whole plant	Swallen cervical glands, chronic indolent ulcers
34	*Phyllanthus niruri*	Bhuinanwla	Euphorbiaceae	Whole plant	In Jaundice, clinical efficacy in viral Hepatitis B, urinary disorder
35	*Physalis angulata* L.	Popti	Solanaceae	Leaf, fruit	Diabetes, Rheumatism, diarrhea, vomiting, asthma in children, stomach disorders.
36	*Setaria pumila*	Grass	Poaceae	Leaf, seed	Antiseptic, Astringent, fever, stomachache
37	*Sida acuta*	Baliyari	Malvaceae	Leaf	Antimicrobial activity of aqueous and ethanol leaves extracts.
38	*Solanum nigrum*	Kakamachi	Solanaceae	Whole plant	Rabies, Diabetes, scabies, itching, ulcer, hiccups and constipation and heart problems, fever and urinary disorder, whole.
39	*Solanum xanthocarpum*	Bhatakateri	Solanaceae	Whole plant	It's used as a carminative, an expectorant.
40	*Tephrosia purpurea*	-	Fabaceae	Leaf, root	Anthelmintic, alexiteric, alterative, and antipyretic, urinary disorder
41	*Vernonia cinerea*	-	Asteraceae	Leaf, root	Anti-inflammatory, antipyretic and behavioral activities,
42	*Vigna luteola*	Mungesar	Fabaceae	Whole plant	Antimicrobial and antineoplastic properties
43	*Ziziphus numularia*	Jangali Ber	Rhamnaceae	leaves, fruit, root	Used for anthelmintic activity and antibacterial activity.

Table-2. Number of Family, Genera and species

S. No.	Name of the family	No. of genera	No. of species Species	S. No. of plant
1.	Acanthaceae	2	2	8,9
4.	Amaranthaceae	3	3	1,3,18
5.	Apiaceae	1	1	15
6.	Asclepiadaceae	1	2	12,13
7.	Asteraceae	3	3	2,10,41
8.	Capparidaceae	1	1	17
9.	Caryophyllaceae	1	1	11
10.	Chenopodiaceae	2	2	5,16
11.	Commelinaceae	1	1	20
12.	Cyperaceae	1	2	22, 23
13.	Euphorbiaceae	2	2	27, 34
14.	Fabaceae	6	6	4,14,25, 30, 40, 42
15.	Lamiaceae	2	2	29, 31
16.	Malvaceae	1	1	37
17.	Papaveraceae	1	1	6
18.	Poaceae	5	5	7, 19,21,26, 36
19.	Polygoniacea	1	1	32
20.	Rhamnaceae	1	1	43
21.	Solanaceae	3	4	24, 35, 38,39
22.	Verbenaceae	2	2	28, 33
Total	20	40	43	43 plant species

Graph No. 1

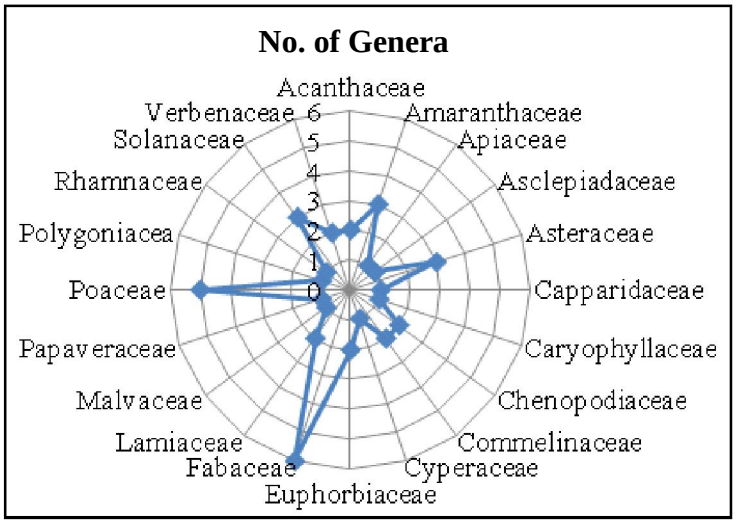
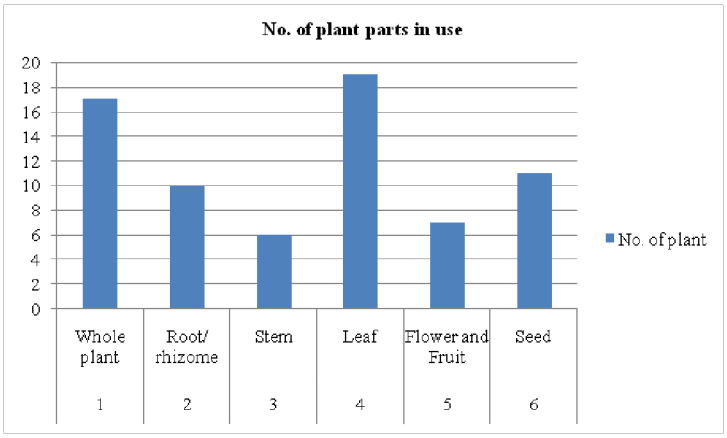
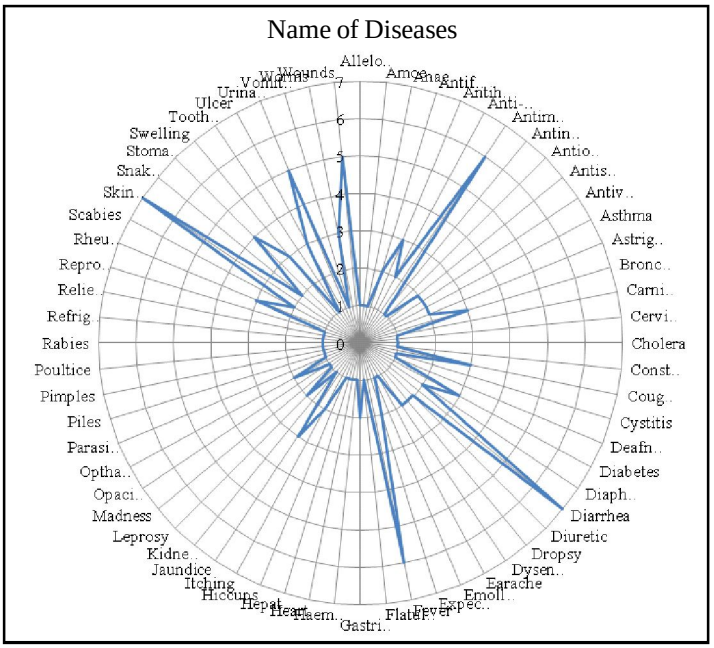


Table-3. Plant parts in use

S. No.	Plant Parts	No. of plant
1	Whole plant	17
2	Root/ rhizome	10
3	Stem	06
4	Leaf	19
5	Flower and Fruit	07
6	Seed	11



Graph No. 2



Graph No. 3.

Table-4. Table of Diseases

S. No.	Name of Diseases	No. of Plants	S. No. of Plants
1.	Allelopathic	1	2
2.	Amoebic dysentery	1	30
3.	Anemia	1	11
4.	Antifungal	2	31,36
5.	Antihelmintic	3	13,40,43
6.	Anti-inflammatory	2	24,41
7.	Antimicrobial	6	7,28,31,37,42,43
8.	Antineoplastic	1	41
9.	Antioxidant	1	5
10.	Antiseptic	2	21,32
11.	Antivenom	2	1, 29
12.	Asthma	2	27, 35
13.	Astringent	2	21,32
14.	Bronchitis	3	3,10,30
15.	Carminative	1	31
16.	Cervical gland swelling	1	33
17.	Cholera	1	15
18.	Constipation	1	38
19.	Cough & cold	4	3,9,27,29
20.	Cystitis	1	4
21.	Deafness	1	17
22.	Diabetes	3	3,35,38
23.	Diaphoretic	2	31, 26
24.	Diarrhea	7	3,4,19,24,27,30,35
25.	Diuretic	2	21,26
26.	Dropsy	2	5,8
27.	Dysentery	2	9,20
28.	Earache	1	17
29.	Emollient	1	21
30.	Expectorant	2	31,39
31.	Fever	6	9,14,32,38, 40, 41

32.	Flatulence	1	3
33.	Gastric problem	2	17,22
34.	Haemostatic	1	18
35.	Heart problem	1	38
36.	Hepatitis ‘B’	1	34
37.	Hiccups	1	38
38.	Itching	2	7,38
39.	Jaundice	3	8,12,34
40.	Kidney trouble	1	18
41.	Leprosy	2	6,24
42.	Madness	1	15
43.	Opacity of cornea	1	6
44.	Opthalmia	2	6, 18
45.	Parasiticide	1	18
46.	Piles	1	25
47.	Pimples	1	20
48.	Poultice	1	18
49.	Rabies	1	38
50.	Refrigerant	1	31
51.	Relieve pain	1	2
52.	Reproductive disease	1	22
53.	Rheumatism	3	8,9,35
54.	Scabies	2	24,38
55.	Skin diseases	7	3,6,9,14,22,24,30
56.	Snake bite	2	14,24
57.	Stomachache	4	27,31,32,35
58.	Swelling	3	4,17,29
59.	Toothache	5	5
60.	Ulcer	3	24,33,38
61.	Urinary disorder	5	19,22,34,38,40
62.	Vomiting	1	35
63.	Worms	3	4,8,16
64.	Wounds	5	2,3,9,17,24

Forty three plant species belonging to 20 families were recorded in Durg district. Out of these 43 species have been reported to be used for various purposes by local inhabitants. They used them as folk medicine in remedy of various diseases cough-cold, eczema, asthma, elephantiasis, nausea vomiting, diarrhea, Diuretic, ophthalmic opacity of cornea, stimulant and carminative, good tonic, antihelmintic, fever, rheumatism, antivenomic, skin diseases, Hepatitis 'B', Jaundice etc. (Table-1)[7,22].

These medicinal plants belong to 40 genera and 20 families. The Fabaceae family provided the largest number of species (six), while 5 species from Poaceae family, 4 species from Solanaceae family, 3 species each came from Amaranthaceae and Asteraceae, 2 species each came from Acanthacea, Asclepiadaceae, Chenopodiaceae, Cyperaceae, Euphorbiaceae and Lamiaceae families and one species came from Apiaceae, Capparidaceae, Caryophyllaceae, Commelinaceae, Malvaceae, Papaveraceae, Polygoniaceae and Rhamnaceae families (Table-2).

Out of 43 plant species which were studied, leafy part of 19 plant species, whole plant of 17 plant species, seed of 11 plant species, root and rhizome of 10 plant species, flower and fruit of 07 plant species and stem of 06 plant species were used as medicine (Table-3).

There 43 plant species were used by the local inhabitants for the treatment of 66 diseases. More than one plant species were used for treatment of some diseases. Such as 7 plants were used to treat Diarrhea and Skin diseases, 6 plants were used to treat antimicrobial and fever, 5 plants were used to treat urinary disorder and wounds, 4 plant species were used to treat cough and cold, 3 plants are used to treat antihelmintic, bronchitis, diabetes, jaundice, rheumatism, swelling, ulcer, worms etc, 2 plant species used to treat 16 diseases and every single plant species is used to treat 31 diseases (Table-4).

In the present study of weed flora of dry waste land and crop land of Durg district of Chhattisgarh state, total of 43 species, 40 genus from 20 families were identified. Major Dicotyledon's species were from Acanthaceae, Asteraceae, Malvaceae, Fabaceae, Lamiaceae, Chenopodiaceae, Solanaceae, Amaranthaceae Verbenaceae and Euphorbiaceae families etc. The Monocotyledonous weeds belonged to family Poaceae, Cyperaceae of which *Cynodon* and *Cyperus* species were found dominating.

The medicinal weed plants used by the Vaidyas have been used by them for decades for treatment of diverse ailments. Many of these weed plants are becoming endangered. Scientific studies should be conducted on these plants because they possess considerable potential of containing lead compounds or novel compounds, which can be used as effective drugs.

The authors are obliged to their Principal to provide lab and other required ingredient to fulfill their results.

References :

1. Agharkar, S.P. (1953). Medicinal Plants of Bombay Presidency. *Scientific publishers*, Jodhpur. India, 198.

2. Agharkar, S. P. (1991). Medicinal plants of Bombay presidency. *Scientific Publishers*, Jodhpur, India, 80-87.
3. Akaneme and Florence ifeoma (2008). *African Journal of Biotechnology*, Vol. *7* (1): 006-011.
4. Ali, S.S. and V. B. Sharma (1985). (Chhattisgarh Botanical Association), Botanical Researches from Chhattisgarh.
5. Almeida (1996). Flora of Maharashtra, Blatter herbarium, St. Xaviers College, Mumbai.
6. Anonymous (1994). Ethnobotany in India A status report (Ministry of Environment and Forests, Govt. of India).
7. Ayensu E. S. (1981). Medicinal plants of West Indies, reference publication Inc, Algonac, Michigan, USA.
8. Bagul R. M. and D.K. Patil (2011). *Plant Archives 11*(1): 271-273.
9. Bhattacharjee, I., S.K. Chatterjee, S. Chatterjee and G. Chandra (2006). Antibacterial potentiality of Argemone maxicana solvent extracts against some pathogenic bacteria, *Inst Oswaldo Cruz, Rio de Janeiro*, Vol. *101* (6): 645-648.
10. Cooke, T. (1958). The Flora of presidency of Bombay (Vol. I, II & III) London, Reprinted Edition B.S.I. Calcutta.
11. Dhiman, A.K. (2006). Ayurvedic Drug Plants, Daya Publishing House, Delhi.
12. Dhole, J. A., N. A. Dhole and S.S. Bodke, (2009). *Ethnobotanical Leaflets 13:* 1443-52.
13. Dobhal, U., S. Bhandari and N. S. Bisht (2006). *Ethnomedicinal leaflets 10:* 281-284.
14. Dymock, W., C.J.H. Warden and David Hooper (2005), Pharmacographia India A History of the principal Drugs of Vegetable origin,Srishti Book distributors, New Delhi.
15. Gill, L.S. (1992). Ethnomedicinal uses of plants in Nigeria. University of Benin press, Nigeria. P. 276.
16. Ikram, M.S., B. Laily, M.W.S. Din, I. Y. Nik, A. Latiff, M. A. Rasadah, A. Hamid and A. Hadi (1998). *ASEAN Review of Biodiversity and Environmental conservation (ARBEC),* VI: 1-8.
17. Iwu, M. M., R.D. Angela and, Chins, O.O. (1999). New antimicrobials of plant origin. A reprint from: Jarick J (ed.) Perspectives on new crops and new uses. *Ash press*, Alexandria, V.A, 325.
18. Jain, S. K. (1991). Dictionary of Indian Folk Medicine and ethnobotany, Deep Publications. New Delhi, India and Ethnobotany.
19. Khare, C.P. (2004). Indian Herbal Remedies: Rational Western Therapy, *Ayurvedic and other Traditional usage, Botany*. Springer, New York.
20. Leung, A. Y. and S. Foster (1996). Encyclopedia of Common Natural Ingredients used in Food, Drugs and Cosmetic, 2nd Ed. New York, John Wiley & Sons, Inc.
21. Misra, R. (1959). *Journal of Indian Botany Society*, 38: 1-7.
22. Moura, A.C. (2005). *Phytomedicine. 12*(1-2): 138-42.
23. Naik, V.N. (1998). The Flora of Marathwada (Vol. I & Vol II), Amrut prakashan, Aurangabad.
24. Oudhia, P. (1999). *Int. Rice Res. Notes*. *24*(1): 40.
25. Parekh, J. and Sumitra V. Chanda (2006). *Turk J Biol 31:* 53-58.
26. Prajapati, N. D. and U. Kumar (2003). Agro's Dictionary of Medicinal Plants, Agrobios (India) Jodhpur.
27. Rameshkumar, S. and C.M. Ramakritinan

(2013). *Journal of Coastal Life Medicine*, *1*(3): 225-232.

28. Retnam, K.R. and P. Martin (2006). Ethnomedicinal plants, Agrobios (India) Jodhpur.
29. Shastri, M.B. (1979). Studies in Angiosperms; Taxonomic, Embryological and cytological studies of flora of Koni (Bilaspur), Ph. D. Thesis, Ravishankar University, Raipur.
30. Shrivastava, A.K., A. Tikariha and S. Patra (2014). *International Journal of Current Microbioogy and Applied Science*, *3*(6): x-xx.
31. Shrivastava, A. K., A. Tikariha, S. Patra and M.R. Sinha (2014). *Indian j. sci. res.* *4*(1): 127-133.
32. Shukla, R.V. and M. C. Diwakar (1973). *Plant Prot Bull 25*: 1-2.
33. Songsak, T. and G. B. Lockwood (2002). *Fitoterapia 73*: 209-216.
34. Verma, B. R. (1978). Some functional and structural aspect of a bhata waste of Raipur M.P., Ph.D. Thesis, Ravishnkar University Raipur.