ISSN: 0976-7126

INTERNATIONAL JOURNAL OF PHARMACY & LIFE SCIENCES

Some ethnomedicinal plants of Bhopal district used for treating stone diseases

Kumkum Agarwal*and Ranjana Varma
Department of Botany,
Sarojini Naidu Govt. Girls P.G. College, Bhopal (M.P.) - India

Abstract

The present work has been done to study the flora of Bhopal district which is useful for treating stone diseases. This study showed the first hand information on such medicinal plants available here. This information was gathered through literature search from various sources such as books, journals, internet websites and field survey in various localities of Bhopal district. The study revealed information on 79 ethnomedicinal plant species belonging to 42 families being used for stone problems. Most of the plants belonged to Asteraceae family.

Key-Words: Stone problems, Ethnomedicinal plants, Asteraceae

Introduction

India with its glorious past of traditional medical system and use pattern of different plants is one of eight major centers of origin and diversification of domesticated taxa, having rich biodiversity and is one of the 17-mega diverse countries of the world. With only 2.5% of the land area, India already accounts for 7.8% of the global recorded species.[1]

Botanically derived medicine has played a major role in human societies throughout history and prehistory.

Traditional knowledge is a valuable system continuously developed over generations by tribal and rural communities in different parts of the world and transmitted from one generation to the next generation in oral form.[2]

Traditional medicines are used by 70% of the world population. Traditional herbal medicines are an important part of the healthcare system in India.[3] Traditional healers or medicine-men have their own diagnostic and treatment systems, which they have acquired from their ancestors and long history of use pattern.[4]

Thus the study of ethnomedical systems and herbal medicines as therapeutic agents is of paramount importance in addressing health problems of traditional communities and third world countries as well as industrialized societies.

*** Corresponding Author**
E-mail: shivalaya2011@gmail.com
Mob. +91 9425301562

In recent years, the use of plants in traditional medicine has increased the interest in ethno-botanical studies throughout the world. In fact, World Health Organization (WHO) estimates that 70% of populations from many countries are using traditional or folk medicine to cure various ailments.[5]

Ethnobotanical studies are also of interest to conservationists and other NGOs because such studies have much to offer about the sustainable use of natural ecosystems. Thus the potentialities of ethnomedicinal studies should be given importance as it can provide us a very effective strategy for the discovery of more potent chemical compounds.

The documentation of indigenous knowledge on the utilization of local plant resources by different ethnic groups or communities is one of the main objectives of ethnobotanical research. These traditional knowledge systems have started to disappear with the passage of time due to insufficiency of written documents. Thus this existing valuable information is needed to be documented before lost or disappeared.

Although, lot of work on documentation of ethnobotanically used medicinal plants in Madhya Pradesh has been done, but to the best of our knowledge this is the first report on the availability of plants useful for stone problems in Bhopal district. Lithiasis is the formation of calculi or stone which is a concretion of material mainly mineral salts in any part of the body. Antilithics are agents that prevent the formation or promote the dissolution of formed calculi.

The present day medical management of stone problems is costly and result in recurrent stones along

with persistent side effects. Hence search for new drugs from natural sources for treating stone problems has assumed greater importance as herbal alternatives are cost effective along with this they confer no side effects.

Thus the principle objective of this study is to identify and document medicinal plant species used by the people in and around Bhopal district for curing stone problems. For this literature search of such plants used in various systems of medicine and field survey in different areas of Bhopal district was undertaken.

Methodology

The present study was done in and around Bhopal district, Madhya Pradesh. Bhopal has an average elevation of 427 metres (1401 ft). Bhopal, the capital city of Madhya Pradesh is located in the central part of India, and is just north of the upper limit of the Vindhya mountain ranges. Located on the Malwa plateau, it is higher than the north Indian plains and the land rises towards the Vindhya Range to the south. The city has uneven elevation and has small hills within its boundaries.[6]

Frequent field survey was carried out in different localities of Bhopal district since July 2009 till 2011. Information was collected from rural people, old and experienced persons who practice and have experience in the use of phytomedicines, as well as through the review of the information gathered from number of books and published papers to confirm the ideas about the medicinal plants given by local communities. The plants were initially identified by their vernacular names through consultations with the local people.

Specimens of plants which were mentioned to be used in stone problems were collected and identified. Specimens were identified with the help of regional Floras (The Flora of Bhopal by M.Oommachan) and taxonomists and preserved in the form of herbarium.

Results and Discussion

The survey includes various local plants of different families used by the local people to cure stone problems. Information on 79 ethnomedicinal plant species belonging to 42 families has been enumerated along with their families and common name. (Table 1)

Different plant parts such as root, leaves, bark, fruits etc are administered with other products such as milk, water, sugar etc for treatment of stone problems. In the present paper majority of plants belong to the Asteraceae family. (Fig. A) The flora of Bhopal was found to be rich in medicinal plants which are used in stone problems. Most of these plants are seen to be growing in wild conditions and in order to keep their existence, it is essential to record important information regarding their uses as these plants could be on the way of extinction due to negligence. Literature search has shown that no such work on flora of Bhopal district which is useful in stone diseases has been done earlier, so there is an urgent need for creating awareness in the area about the importance of the flora and sustainable collection and conservation of important medicinal plants.

Acknowledgement

The local people of Bhopal district are greatly acknowledged for their cooperation during fieldwork. The author would also like to acknowledge the Principal of Sarojini Naidu Govt. Girls. P.G. College, Bhopal as well as sincere gratitude are also due to the Head of Department of Botany, Teaching and non teaching staff of the college for their cooperation.

References

1. Kannaiyan S.. An overview on biological diversity act- 2002, International Biodiversity Day - 2007: S*ouvenir* ; (2007) 1-11.
2. Kannaiyan S.. Biological diversity and traditional knowledge, International Biodiversity Day- 2007: *Souvenir* ; (2007) 12-19.
3. Vallinayagam M., Veeraraghavan G., Subhash A., Sundaram R.L, Parthasarathy R.P, Thanka J. & Hannah R V. Safety and bioactive potential of a traditional polyherbal formulation "Sirupeelai samoola Kudineer. *Journal of Pharmacy Research, 3(9)* (2010), 2211-2214
4. Singh P.K, Kumar V, Tiwari R.K., Sharma A, Rao V. and Singh R.H. Medico-Ethnobotany of 'Chatara' Block of District Sonebhadra, Uttar Pradesh, India*; Advances in Biological Research,* Vol 4, Issue 1: (2010) ,65-80
5. 5 Jiofack T., Fokunang C., Guedje N., Kemeuze V., Fongnzossie E., Nkongmeneck B. A., Mapongmetsem P. M. and Tsabang N. Ethnobotanical uses of medicinal plants of two ethnoecological regions of Cameroon; *International Journal of Medicine and Medical Sciences* Vol. 2(3), March (2010) pp. 60-79
6. http://en.wikipedia.org/wiki/Bhopal
7. Acharya Balakrishna (2008). *Ayurveda –jadi buti rahasya*, Divya Publication, Patanjali yogpeetha; 1-419.
8. Dhanvantari krit (2010)- *Bharatiya jadi – butiyan*; D.P.B. Publication Delhi.1-698.

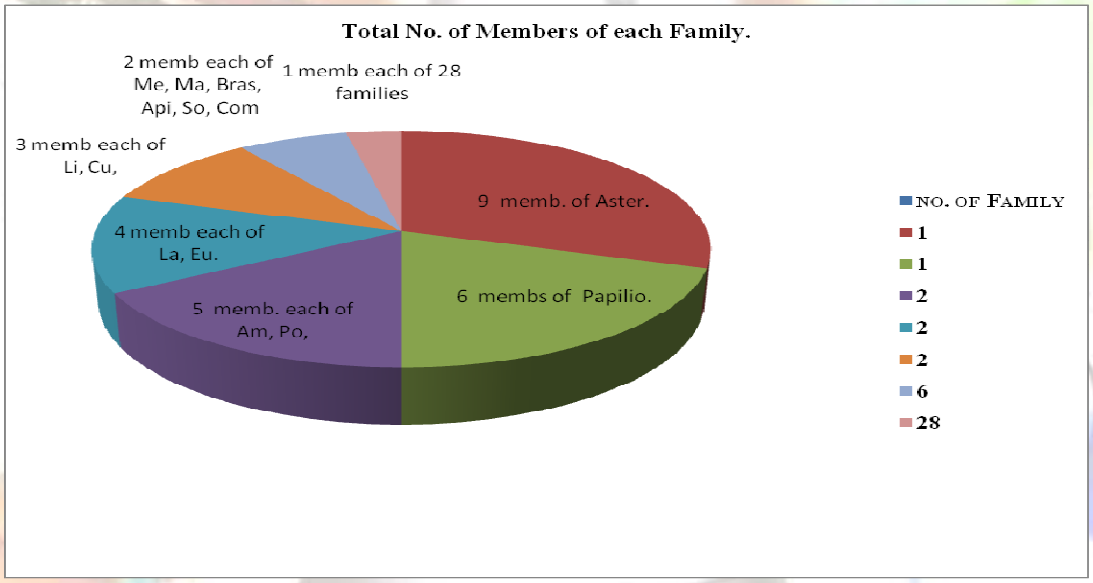
9. Brahmavarchas (2010). *Ayurveda ka praan, van aushadhi vigyan*-Publisher-Yug nirman vistar trust; Gayatri Tapobhumi, Mathura.1-474.
10. Dinesh Chandra (2009). *Van aushadhi jadi-buti ; Chitravali*; Publisher – Hindi seva sadan, Mathura ;25-642.
11. Aggarwal A, Tandon S., Singla S.K, Tandon C. (2010). Reduction of oxalate-induced renal tubular epithelial (NRK-52E) cell injury and inhibition of calcium oxalate crystallisation *in vitro* by aqueous extract of Achyranthes aspera; *International Journal of Green Pharmacy*,Vol: 4. Issue : 3 : 159-164.
12. Awari D.M., Mute V., Babhale S.P.,.Chaudhari S.P. (2009). Antilithiatic effect of Achyranthus Aspera Linn. leaves extract on ethylene glycol induced nephrolithiasis; *Journal of Pharmacy Research* Vol.2.Issue 5.; 994-997
13. Tiwari S., Tiwari, S. (2008). Plants: A Rich Source of Herbal Medicine; *Journal of Natural Products*, Vol. 1:27-35
14. Kumar K. P. S, Bhowmik D., Chiranjib, Biswajit and Tiwari P. (2010). Allium cepa: A traditional medicinal herb and its health benefits; *J. Chem. Pharm. Res., , 2(1): 283-291*
15. Sharma M., Sharma A. and Kumar A. (2011). *Ethnopharmacological* importance of *Asparagus* racemosus: A review; *Journal of Pharmaceutical and Biomedical Sciences*, 6(12); 1-12
16. Christina, A.J.M (2005). Antilithiatic effect of Asparagus racemosus willd on ethylene glycol induced lithiasis in male albino Wistar rats; *Methods Find Exp Clin Pharmacol*, 27(9): 633
17. Prachi, Chauhan N., Kumar D., Kasana MS. (2009). Medicinal plants of Muzaffarnagar district used in treatment of urinary tract and kidney stone; *Indian J. of Traditional Knowledge*; Vol. 8(2); 191-195.
18. Ghatapanadi S. R., Johnson N. and Rajasab A. H. (2010). Medicinal plants of North Karnataka used in treatment of kidney stones and urinary tract infections; *The Socioscan*; Vol. 2(3&4) pp. 23-24.
19. Sharma N., Tanwer B.S. and Vijayvergia R. (2011). Study of medicinal plants in Aravali regions of Rajasthan for treatment of Kidney stone andUrinary tract troubles; *Int.J. PharmTech Res.* 3(1); 110-113.
20. Behera M., Mishra R.R, Bindhani B.K., Panigrahi J. (2010).Cytological studies in astercantha longifolia (L.) Nees.- A medicinal herb.; *International J. of Botany* 6(2); 132-135.
21. Panigrahi J. Mishra R.R, Behera M. (2006). In-vitro multiplication of Astercantha longifolia (L.) Nees.- A medicinal herb; *Indian J. of Biotechnology*, Vol. 5, 562-564.
22. Arora R, Gupta D., Chawla R, Sagar R, Sharma A, Kumar R, Prasad J, Singh S, Samanta N and Sharma R.K (2005). Review article; Radioprotection by Plant Products: Present Status and Future Prospects; *Phytother. Res.* 19, 1–22
23. Ramana P. Patil S.K, Sankri G. (2007). Floristic diversity of Magadi wetland area in Gadag district, Karanataka; *Proceedings of Taal* ; The 12th world lake conference; 424-429.
24. Kamboj A., Saluja A.K. (2009). Bryophyllum pinnatum (Lam.) Kurz. : Phytochemical and Pharmacological profile: A review; *Phcog Rev*. Vol 3, Issue 6, 364-374
25. Chauhan C.K., Joshi M.J.and Vaidya A.D.B. (2009). Growth inhibition of struvite crystals in the presence of herbal extract Boerhaavia diffusa Linn; *American J.of Infectious diseases*, 5(3): 177-186
26. Verma V., Jalalpure S. S., Sahu A., Bhardwaj L.K., Yache P. (Jan-March 2011). Bombax ceiba Linn: Pharmacognostical, Phytochemistry, Ethnobotany, and Pharmacology studies; *Internationale Pharmaceuticasciencia* ; Vol. 1, Issue 1*;* 62-68.
27. Patil U.H. and Gaikwad D.K. (2011). Medicinal Profile of a Scared Drug in Ayurveda: Crataeva religiosa A Review: *J. Pharm. Sci. & Res*. Vol.3 (1), 923-929
28. Rad A.K, Hajzadeh M.A.R, Rajaei Z. , Sadeghian M.H, H.N., Keshavarzi Z.(2011). Preventive effect of Cynodon dactylon against ethylene glycol-induced nephrolithiasis in male rats; *Avicenna Journal of Phytomedicine*, Vol. 1, No. 1, 14-23.
29. Olagunjua JA, Adeneyeb AA, Fagbohunkac BS, Bisugac NA, Ketikuc AO, Benebod AS, Olufowobic OM, Adeoyec AG, Alimic MA, Adelekec AG (2009). Nephroprotective activities of the aqueous seed extract of Carica papaya Linn. in carbon tetrachloride induced renal injured Wistar rats: a dose- and time-

dependent study; *Biology and Medicine*, Vol. 1 (1): 11-19

30. Pathan J.K, Khan N, Sohel H.M. (2011). Evaluation of Coleus barbatus and Trigonella foenum graecum extracts and their combination on kidney stones in rats; *International Journal of Toxicology and Applied Pharmacology*; 1 (1) 1-5
31. Garimella TS, Jolly CI, Narayanan S. (Jun 2001). In vitro studies on antilithiatic activity of seeds of Dolichos biflorus Linn. and rhizomes of Bergenia ligulata Wall.; *Phytother Res*.;15(4):351-5.
32. Alok S., Rawal S., Mahor A. and Sabharwal M. (January to June, 2010). In vitro evaluation on antilithiatic activity on Hyptis suaveolens (L.) leaves; *International Journal of Plant Sciences*, Vol. 5 Issue 1: 250-253
33. Latha P.G., Suja S.R., Shyamal S., Rajasekharan S. (July-Aug 2005). Some hepatoprotective garden plants; *Natural product radiance*, Vol. 4(4), 278-279.
34. Chaudhary G., Goyal S, Poonia P. (2010). Lawsonia inermis Linnaeus: A Phytopharmacological Review; *International Journal of Pharmaceutical Sciences and Drug Research*; 2(2): 91-98
35. Khan A.V, Ahmed Q.U., Mir M.R, Shukla I., Khan A.A. (2011). Antibacterial efficacy of the seed extracts of *Melia azedarach* against some hospital isolated human pathogenic bacterial strains; *Asian Pacific Journal of Tropical Biomedicine*, 452-455.
36. Padmavathy A. and Anbarashan M (June, 2011).; Phytomedicinal study of coastal sand dune floras in Puducherry. *Journal of Medicinal Plants Research.* Vol. 5(12), pp. 2566-2571
37. Sachan D., Jain S. K. and Singh N. (2011). In-vitro & in-vivo efficacy of moringa oleifera plant constituents in urolithiasis as antilithiatic drug ; *International Journal Of Pharmaceutical Sciences And Research*; Vol. 2(7): 1638-1644
38. Jha U, Shelke T.T., Oswal R.J, Adkar PP, Navgire VN (2011). Pharmacological screening of Musa paradisica Linn. against ethylene glycol induced renal calculi; *International Journal Of Research In Ayurveda And Pharmacy*; 2(3); 995-998
39. Chaudhary M.I., He Q., Cheng Y.Y.and Xiao P.G. (2006). Ethnobotany of medicinal plants from Tian Mu Shan biosphere reserve, Zhejiang-province, China; *Asian J. of Plant Sciences* 5(4): 646-653.
40. Udupa A. L., Sanjeeva , Benegal A., Prusty V., Kodancha G. P., Kumar M. C. S., Bhat V. Ratnakar U. P. (2010). Diuretic activity of Phyllanthus niruri (Linn.) in rats, *Health*, Vol.2, No.5, 511-512
41. Singh A.P., Singh A.J., Singh N. (Oct 2011). Pharmacological investigations of punica granatum in glycerol induced acute renal failure in rats; *Indian J of Pharmacology*; Vol 43; issue 5; 551-556.
42. Alqasoumi S, al-yahya M, Al-howiriny A, rafatullah S. (2008). Gastroprotective effect of radish "*Raphanus sativus"* l. On experimental Gastric ulcer models in rats; *Farmacia*. Vol.lvi, 2; 204-214
43. Mohammed N.H.SH., Abelgasim A.I. and Mohammed A.H. (2008). Protective effect of Raphanus sativus against carbon tetrachloride induced hepatotoxicity in wistar albino rats; *J. of Pharmacology and Toxicology* 3(4): 272-278
44. Vargas R, Perez R M, Perez S, Zavala M A, Perez C (Dec 15 1999). Antiurolithiatic activity of Raphanus sativus aqueous extract on rats. *J Ethnopharmacol.*; 68 (1-3):335-8.
45. Leonard D.B. (2006). Medicine at your Feet: Healing Plants of the Hawaiian Kingdom List of Hawaiian Medicinal Plants. *L.Ac.*; 1-16.
46. Joy J. M, Madhavan V, Murali A., Yoganarasimhan S.N, Saravanakumar A. (2011). Diuretic activity of the roots of Triumfetta rhomboidea Jacq. ; *Asian Journal of Pharmaceutical Science & Technology*; Vol 1, Issue 2, 33-37.
47. Kumar G, Banu GS, Pandian MR (October 2005). Evaluation of the antioxidant activity of Trianthema portulacastrum L.; Indian J of Pharmacology; Vol. 37, Issue 5, 331-333.
48. Nitalikar M.M, Patil R.A., Dhole S.D., Sakarkar D.M.. (2010). Evaluation of fenugreek seed husk as tablet binder.; *International Journal of Pharmaceutical Research and Development*; Vol-2, Issue-8; 21-23.
49. Ahsan SK, Tariq M, Ageel AM, al-Yahya MA, Shah AH (1989). Effect of Trigonella foenum-graecum and Ammi majus on calcium oxalate urolithiasis in rats. *J Ethnopharmacol*. 26(3):249-54.
50. Swathi D., Sujatha D., Bharathi K. andPrasad K.V.S.R.G. (Oct-Dec, 2008). Antilithiatic

activity of the aqueous extract of the roots of Tephrosia purpurea Linn.; *Pharmacognosy Magazine* Vol 4, Issue 16 (Suppl.),S 206-211.

51. Sailaja B., Bharathi K. and Prasad KVSRG (Jan- Feb 2011). Protective effect of Tridax procumbens L. On calcium oxalate urolithiasis and oxidative stress; *Pharmanest- An International Journal of Advances In Pharmaceutical Sciences* Vol. 2 (1); 9-14**.**
52. Sreedevi A., Bharathi K., Prasad K.V.S.R.G. (2011). Effect of Vernonia cinerea Aerial Parts Against Cisplatin-induced !ephrotoxicity in Rats; *Pharmacologyonline*, 2: 548-555; 548-555.
53. Punjani B.L. (2010). Herbal folk medicines used for urinary complaints in tribal pockets of Northeast Gujarat; *Indian J. of Traditional Knowledge*; 9(1),126-130.
54. C.P.Khare Ed. (2007). Book: *Indian medicinal plants*; Springer Publication, 1-836.
55. Swami Sadashiva Tirtha (2007). *The ayurveda encyclopedia: Natural secrets to healing, prevention and longevity*. Eco-positive Publication NY, 2nd edition, pg. 102.
56. Hadjzadeh M.R., Khoei A, Hadjzadeh Z., Parizady M. (2007). Ethanolic Extract of Nigella Sativa L Seeds on Ethylene Glycol-Induced Kidney Calculi in Rats; *Urology Journal*, Vol 4 No 2: 86-90.



(Abbreviations used: Aster- Asteraceae, Papilio- Papilionaceae, Am-Amaranthaceae, Po- Poaceae, La-Lamiaceae, Eu- Euphorbiaceae, Li-Liliaceae, Cu-Cucurbitaceae, Me-Meliaceae, Ma-Malvaceae, Bras-Brassicaceae, Api-Apiaceae, So-Solanaceae, Com-Combretaceae, memb.- member**)**

Fig. A: Dominant flora of Bhopal district useful for stone diseases, categorized according to Botanical Family

ISSN: 0976-7126

Table 1: List of some ethnomedicinal plants of Bhopal district used for treating stone diseases

S/No.	Botanical name	Common name	Family
1.	Achyranthes aspera L.	Apamarg [7,8, 9,11, 12]	Amaranthaceae
2.	Ananas comosus Merr.	Pineapple [7, 8]	Bromeliaceae
3.	Azadirachta indica L.	Neem [7]	Meliaceae
4.	Allium cepa L.	Pyaaz [7,10, 13,14]	Liliaceae
5.	Asparagus racemosus Willd.	Satawar [7,10,15, 16]	Lilicaceae
6.	Abutilon indicum L.	Atibala [8, 17, 18]	Malvaceae
7.	Amaranthus spinosus L.	Kanta chaulai [8,18, 19]	Amaranthaceae
8.	Amaranthus viridis L.	Jangli chaulai [19]	Amaranthaceae
9.	Althea rosea (L.) Cav.	khatmi [8,9 , 54]	Malvaceae
10.	Aloe barbadensis Miller.	Aloe vera [8, 10]	Liliaceae
11.	Astercantha longifolia Nees.	Talmakhana [8, 9,10, 20, 21]	Acanthaceae
12.	Argemon mexicana L.	Satyanashi [8, 18]	Papaveraceae
13.	Ageratum conyzoides L.	Mahkua [8,22, 23]	Asteraceae
14.	Anthocephalas cadamba Miq.	Kadamba [9,10]	Rubiaceae
15.	Bryophyllum pinnatum (Lam.) Oken.	Parnabeej [7, 9, 10,17, 24]	Crassulaceae
16.	Boerhaavia diffusa L.	Punarnava [7, 9,10,17, 19, 25]	Nyctaginaceae
17.	Beta vulgaris L.	Chukander [8, 19]	Amaranthaceae
18.	Bauhinia racemosa Lam.	Kachnar [8,10]	Caesalpiniaceae
19.	Butea monosperma (Lam.) Taub.	Palash [8]	Papilionaceae
20.	Brassica oleracea L. var. capitata L.	Patta gobhi [8]	Brassicaceae
21.	Bombax ceiba L.	Semal [9, 26]	Bombacaceae
22.	Chenopodium album L.	Bethua [10, 19]	Chenopodiaceae
23.	Crataeva religiosa (Hook and Frost)	Varun [9,10, 27]	Capparidaceae
24.	Clitoria ternatea L.	Aparajita [7]	Papilionaceae
25.	Cynadon dactylon (L.) Pers.	Doob [7, 8, 10, 17, 28.]	Poaceae
26.	Chrysanthemum coronarium L.	Guldaudi [7, 8]	Asteraceae
27.	Carica papaya L.	Papita [8,9, 29]	Caricaceae
28.	Cuminum cyminum L.	Jeera [8, 9,10]	Apiaceae
29.	Cucumis utilissimus L.	Kakadi [8, 10]	Cucurbitaceae
30.	Cucumis melo L.	Kharbuja [8]	Cucurbitaceae
31.	Coleus forskohlii (Willd) Briq.	Patharchur [30]	Lamiaceae
32.	Celosia argentea L.	Safed murga [9, 18]	Amaranthaceae
33.	Daucas carota L.	Gajar [8, 10, 17]	Apiaceae
34.	Diospyros peregrina (Gaertn.) Gurke	Kala tendu [8]	Ebenaceae
35.	Dolichos biflorus L.	Kulthi [8, 10, 31]	Papilionaceae
36.	Euphorbia hirta L.	Badi dudhi [8]	Euphorbiaceae
37.	Gymnema sylvestris R.Br.	Gudmar [10]	Asclepiadaceae
38.	Helianthus annuus L.	Surajmukhi [7, 9]	Asteraceae
39.	Hyptis suaveolens L. Poit.	Vilayati tulsi [32]	Lamiaceae
40.	Lawsonia inermis L.	Henna [7, 33, 34]	Lythraceae
41.	Melia azedarach L.	Bakain [7,10, 54, 35]	Meliaceae
42.	Momordica charantia L.	Karela [7, 8, 9]	Cucurbitaceae
43.	Mimosa pudica L.	Lajwanti [7, 9, 36]	Mimosaceae
44.	Moringa oleifera Lam.	Sahajan [7, 9, 37]	Moringaceae
45.	Musa paradisiacal L.	Kela [9, 38]	Musaceae
46.	Mallotus philipinnensis Muell, Arg.	Kamala [8, 55]	Euphorbiaceae
47.	Nigella sativa L.	Kalaungi [56]	Ranunculaceae
48.	Ocimum sanctum L.	Tulsi [7]	Lamiaceae

49.	Ocimum gratissimum L.	Aranya tulsi [8, 9,10]	Lamiaceae
50.	Pongamia pinnata L.	Karanj [8]	Papilionaceae
51.	Portulaca oleraceae L.	Kulfa [8, 9,10 ,39]	Portulacaceae
52.	Phyllanthus niruria L.	Bhui anwala [40]	Euphorbiaceae
53.	Punica granatum L.	Anar [41]	Punicaceae
54.	Raphanus sativus L.	Muli [7,9,42, 43, 44]	Brassicaceae
55.	Ricinus communis L.	Arandi [8, 17, 19]	Euphorbiaceae
56.	Syzygium cuminii L.	Jamun [7, 8,9]	Myrtaceae
57.	Solanum surratense Burm.f	Bhatkataiya [7,8, 9, 17, 19]	Solanaceae
58.	Solanum nigrum L.	Makoi [39]	Solanaceae
59.	Sesamum orientale L.	Til [7,9,18]	Pedaliaceae
60.	Saccharum spontaneum L.	Kans [8,10]	Poaceae
61.	Spharanthes indicus L.	Gorakhmundi [8]	Asteraceae
62.	Sorghum vulgare L.	Jwar [8]	Poaceae
63.	Triumfetta rhomboidea Jacq.	Chiriyari [45, 46]	Tiliaceae
64.	Terminalia arjuna (Roxb.) Wight & Arn.	Arjuna [7]	Combretaceae
65.	Terminalia bellerica (Gaertn.) Roxb.	Bahera [7, 9]	Combretaceae
66.	Tagetes erecta L.	Genda [7, 8,10]	Asteraceae
67.	Tribulus terrestris L.	Gokhru [7, 8, 9, 10 ,17, 18, 19]	Zygophyllaceae
68.	Thevetia peruviana Pers. Schum.	Kaner [7]	Apocynaceae
69.	Triticum aestaivum L.	Gehu [8]	Poaceae
70.	Taraxacum officinale F.H. Wigg.	Aranya kasni [8,10]	Asteraceae
71.	Trianthema portulacastrum L.	Safed punarnava [10,17, 47]	Aizoaceae
72.	Trigonella foenum graecum L.	Methi [30, 48, 49]	Papilionaceae
73.	Tephrosia purpurea	Sarphoka [50]	Papilionaceae
74.	Tridax procumbens L.	Ghamra [19,51]	Asteraceae
75.	Tropaeolum majus L.	Nasturtium [45]	Tropaeolaceae
76.	Vitis vinifera L.	Angur [7,8,9]	Vitaceae
77.	Vernonia cinerea L.	Sahadevi [9,52]	Asteraceae
78.	Xanthium strumarium L.	Gokhru [53]	Asteraceae
79.	Zea mays L.	Makai [17,18]	Poaceae