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Original Article

A compiled knowledge repository of Indigenous traditional medicinal plants in Ghaziabad India as obtained from Vaidya and Hakims

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ABSTRACT: Medicinal plants are an essential source of therapeutically active drugs and play a primary role in the healthcare system throughout world. The Indian system of medicines has been an integral part of the civilization and tradition of India down the centuries. Plant based medicines were being used extensively for the amelioration, prevention and treatment of chronic and acute human diseases by people who were known as traditional healers i.e., vaidya, hakims whom we know as doctors in the present times. In terms of wealth of traditional knowledge India is one of the leading countries in Asia, as we know traditional medicine is an all-inclusive term used to describe two systems such as organized systems which includes all the Ayurveda, siddha, Unani, Greek medicines and several types of unorganized medicinal practices (i.e. indigenous, folk or tribal medicine). In India traditional knowledge till today majorly remains undocumented, most of this important information were passed through generations in the form of folklores, hence it is very important to tap this ethno-botanical knowledge of people and document the useful plants of that particular region, it can prove to be an essential tool that might help in the understanding of human-environment association. Our work involves a survey on the use of traditional medicinal plants by the villagers for the prevention and treatment of several diseases and disorders, this information was passed through generations in the form of folklores. The present study was carried out in the villages of Muradnagar district Ghaziabad all the information was gathered from young and old age people, vaidya, traditional healers and hakim who were aged between 30-65 years.

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INTRODUCTION

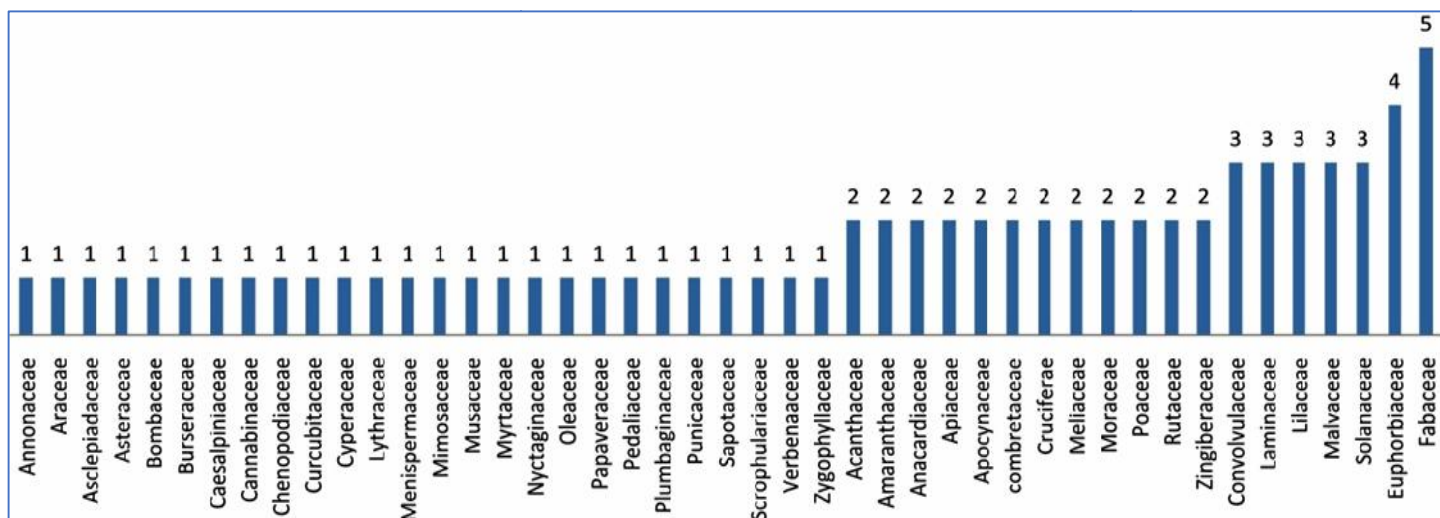
Nearly eighty per cent of world population depends on the traditional system of alternative medicine [1-3]. It is assumed that in developing countries like India, Nepal, Srilanka, Bangladesh more than fifty per cent drugs under clinical trials are of herbal origin. India due to its geographical location is blessed with a plethora of diverse flora, it is because of climatic biodiversity that plants withstand different weather and develop the chemical system to fight against the microbes, suns harsh radiations and oxidants, these secondary metabolites synthesised by plants are being tapped since ages to obtain therapeutically

active drugs, it seems that treatment by herbs gives eminent pleasure, mental peace good lifestyle [4, 5].

In terms of wealth of traditional knowledge of plants and their benefits, India is one of the leading countries in Asia, health benefits of over two thousand plant species are identified by the Ayurvedic system of medicine, and has been documented as in ancient Indian books like *Charak Samhita*, *Sushrut Samhita*, *Bhav prakasha*, *Ras Tarang* [6-7], but most of this knowledge has been conveyed orally from one generation to another generation by vaidya and hakim and improvised by practicing, due to the lack of documentation most of these medicinal plants

Table 1: List of plant family with their frequency

S. No.	Family of the plants	Frequency	S. No.	Family of the plants	Frequency
1	Annonaceae	1	24	Scrophulariaceae	1
2	Araceae	1	25	Verbenaceae	1
3	Asclepiadaceae	1	26	Zygophyllaceae	1
4	Asteraceae	1	27	Acanthaceae	2
5	Bombaceae	1	28	Amaranthaceae	2
6	Burseraceae	1	29	Anacardiaceae	2
7	Caesalpiniaceae	1	30	Apiaceae	2
8	Cannabinaceae	1	31	Apocynaceae	2
9	Chenopodiaceae	1	32	Combretaceae	2
10	Curcubitaceae	1	33	Cruciferae	2
11	Cyperaceae	1	34	Meliaceae	2
12	Lythraceae	1	35	Moraceae	2
13	Menispermaceae	1	36	Poaceae	2
14	Mimosaceae	1	37	Rutaceae	2
15	Musaceae	1	38	Zingiberaceae	2
16	Myrtaceae	1	39	Convolvulaceae	3
17	Nyctaginaceae	1	40	Laminaceae	3
18	Oleaceae	1	41	Lilaceae	3
19	Papaveraceae	1	42	Malvaceae	3
20	Pedaliaceae	1	43	Solanaceae	3
21	Plumbaginaceae	1	44	Euphorbiaceae	4
22	Punicaceae	1	45	Fabaceae	5
23	Sapotaceae	1			

**Fig 2: Graphical presentation of frequency of the plants Families**

Bark of the under mentioned list of plants are used extensively as traditional medicine, bark of plants like *Terminalia arjuna*, *Saraca asoca* is used to cure certain heart ailments, and menorrhagia respectively when given along with milk.

Bark of plant such as *Hibiscus rosa-sinensis*, *Acacia Arabica*, *Ficus religiosa* are used to cure wounds, as abortifacient, and strengthening gums respectively (table 2).

Table 3 contains a list of plants whose fruits are used extensively for various therapeutic purpose.

Table 2: Bark utilized by Practitioner as traditional medicine

S. No.	Botanical Name	Family	Local Name	Part Used	Utilization
1	<i>Terminalia arjuna</i>	Combretaceae	Arjun	Bark	Bark powder is given with milk to cure the heart disease.
2	<i>Saraca asoca</i>	Fabaceae	Ashok		Bark powder is given with milk during menorrhagia from the forth days of menstrual cycle.
3	<i>Hibiscus rosa-sinensis</i>	Malvaceae	Gurhal		13 to 15 grams of gurhal bark extract are given continuously for a week cause abortion
4	<i>Acacia Arabica</i>	Mimosaceae	Babul		Bark extract are used to cure wounds
5	<i>Ficus religiosa</i>	Moraceae	Peepal		Bark powder are used in morning tooth wash for strengthening of gums

Table 3: Fruit utilized by Practitioner as traditional medicine

S. No.	Botanical Name	Family	Local Name	Part Used	Utilization
1	<i>Semecarpus anacardium</i>	Anacardiaceae	Bhilwa	Fruit	Daily intake of fruit improves the indigestion and treat the piles and cough
2	<i>Terminalia bellirica</i>	Combretaceae	Bahera		Bahera are used in trifla preparation. For expel out the gas from stomach
3	<i>Momordica charantia</i>	Curcubitaceae	Karela		One glass of karela juice, empty stomach is helpful to cure diabetes
4	<i>Emblica officinalis</i>	Euphorbiaceae	Amala		Fruit juice is helpful to cure diabetes and heart disease. It is prescribed with drug for procurement of skin disease.
5	<i>Tamarindus indica</i>	Fabaceae	Imli		Fruit paste is applied on hair to remove dandruff. Bark Powder cure the gastric pain
6	<i>Allium cepa</i>	Lilaceae	Pyaz		Vinegar pate of pyaz with karela fruit pulp are used helpful in headache
7	<i>Musa paradisiaca</i>	Musaceae	Kela		Cut the ripe banana and filled with desi kapoor, tie with a thread and kept 8a side for overnight. Next morning peel the banana and eat this continue three days. Worms will be removed out in stool.
8	<i>Syzygium cumini</i>	Myrtaceae	Jamun		Fruit seed powder intake can relieve from the diabetes and indigestion problem.
9	<i>Punica granatum</i>	Punicaceae	Annar		Fruit juice are given for enhance the memory and improve the brain strength
10	<i>Aegle marmelos</i>	Rutaceae	Bael		Fruit pulp juice are used to cure dysentery and diarrhea
11	<i>Citrus medica</i>	Rutaceae	Chota Neebu		Cut the neebu in two pieces and rubbed with black salt at bruises for two to three days to remove the bruises.
12	<i>Tribulus terrestris</i>	Zygophyllaceae	Gokhru		Fruit are boiled with water and this water given daily for removing of stone from kidney

Apart from fruits other parts such as seeds are also known to be therapeutically active, the following list contains the same.

According to the vaidya and hakims seeds of *Mangifera indica* are known to cure piles and skin disorder, seed powder of *Chenopodium albicum* are known to cure swollen gums, seed powder of *Brassica campestris* and *Jatropha curcas* are helpful in intestinal disorders and stomach disorders (table 4).

Rhizomes of the following plants are believed to be therapeutically active. Rhizomes of *Acorus calamus*, *Curcuma domestica*, *Zingiber officinalis* are used as anti-pyretic, anti-inflammatory, anti-tussive respectively (table 5).

Table 4: Seeds Utilize by Practitioner as Traditional Medicine

S. No.	Botanical Name	Family	Local Name	Part Used	Utilization
1	<i>Mangifera indica</i>	Anacardiaceae	Aam	Seed	Seed powder are taken early in the morning with fresh water use to cure piles and skin disease
2	<i>Chenopodium album</i>	Chenopodiaceae	Bathua		Seed powder are given with fresh powder to cure the swollen gums
3	<i>Brassica compestris</i>	Cruciferae	Sarsaun		Oil given to calves for removal of the intestinal disorder
4	<i>Jatropha curcas</i>	Euphorbiaceae	Ratanjot		powdered seed extract are helpful to cure stomach disorder and cholera

Table 5: Rhizomes Utilize by Practitioner as Traditional Medicine

S. No.	Botanical Name	Family	Local Name	Part Used	Utilization
1	<i>Acorous calamus</i>	Araceae	Bach	Rhizomes	Powder of rhizomes are twice in a day to cure the fever in children
2	<i>cyperus rotundus</i>	Cyperaceae	Motha		Equal quantity of motha rhizomes pieces of gloe and dried ginger are given orally trice in a day to cure the malaria.
3	<i>Asparagus racemosus</i>	Lilaceae	Satawari		Rhizomes juice are increase sex desire.
4	<i>Curcuma domestica</i>	Zingiberaceae	Haldi		make a paste with mustard oil and apply on the broken horn of animal to relieve the pain and work as anti-inflammatory
5	<i>Zingiber officinalis</i>	Zingiberaceae	Adarak		Domestically it is given in cold and cough.

Table 6: Leaf Utilized by Practitioner as Traditional Medicine:

S. No.	Botanical Name	Family	Local Name	Part Used	Utilization
1	<i>Annona squamosa</i>	Annonaceae	Sharifa	Leaf	In the treatment of jaundice leaf paste are rubbed on head.
2	<i>Coriandum sativum</i>	Apiaceae	Dhania		Leaf paste (Chatani) are given in food to increase the appetizer
3	<i>Eclipta alba</i>	Asteraceae	Bhringraj		Paste of leaves are used to cure dandruff and black the hair
4	<i>Cannabis sativa</i>	Cannabinaceae	Bhang		Fresh leaf paste is applied on anus to cure piles
5	<i>Convolvulus pluricaulis</i>	Convolvulaceae	Sankhpushpi		Paste of sankhpushpi are useful as brain tonic and hair tonic
6	<i>Evolvulus alsinoides</i>	Convolvulaceae	Shankhpushpi		Cup of fresh juice in morning cure the urinary problem.
7	<i>Ricinus communis</i>	Euphorbiaceae	Arend		Mustered oil applied on the leaves, warm it and apply at the point of pain helpful to reduce the inflammation
8	<i>Dalbergia sissoo</i>	Fabaceae	Shisham		Leave extract with sugar cure the bleeding in nose. Bark Powder are use for gonorrhoea
9	<i>Mentha piperita</i>	Laminaceae	Pudina		Leaves are given in the treatment of jaundice
10	<i>Nyctanthes arbour-tristis</i>	Oleaceae	Harsingar		Trice in a day leaf extract with black pepper, salt and ginger to cure malaria fever
11	<i>Ocimum basilicum</i>	Laminaceae	Kali Tulsi		For removing of cough used in the tea.
12	<i>Ocimum sanctum</i>	Laminaceae	Tulsi		For removing of toothache, leaves are crushed with salt and place on the tooth.
13	<i>Lowsonia inermis</i>	Lythraceae	Mehndi		Leaf decoction is given to the jaundice patient
14	<i>Gossypium arboretum</i>	Malvaceae	Kapas		Leaf paste with vinegar used to remove fungal infection
15	<i>Melia azadirachta</i>	Meliaceae	Meetha neem		Watery juice are used to kill the worm in cattle

16	<i>Bacopa monnieri</i>	Scrophulariaceae	Brahmi		Boil with water and given to child to remove the cough, cold and asthma
17	<i>Nicotiana tobacum</i>	Solanaceae	Tambaku		For the procurement of asthma 2 to 3 gram of complete burn ash given daily.
18	<i>Solanum nigrum</i>	Solanaceae	Makoi		Small cup of leaves water extract is used to cure skin and liver disease.
19	<i>Andrographis paniculata</i>	Acanthaceae	Kalmegh		Water extract are used to cure fever. Leaves extract are given with milk to cure snake bite
20	<i>Catharanthus roseus</i>	Apocynaceae	Sadabahar		Cup of leaf juice (2 to 3 drop) are useful to cure the blood dysentery. Root paste cure the aseptic wounds
21	<i>Acalypha indica</i>	Euphorbiaceae	Khokali		Little bit amount of paste with leaf paste are used to cure eczema and chest pain
22	<i>Abutilon indicum</i>	Malvaceae	Atibala		Orally five to seven ml leave paste are used to cure piles
23	<i>Cynodon dactylon</i>	Poaceae	Doob ghass		5 to 7 ml of juice with sugar cure the nasal bleeding.
24	<i>Cassia fistula</i>	Caesalpinaceae	Amaltas	Leaf and Flower	leaf and flower are boiled in water and gives to children to remove the worms from stomach
25	<i>Aerva lanata</i>	Amaranthaceae	Chhaya	Leaf Juice	watery juice is helpful to cure the urinary problem

Root powder of in the form of paste of *Cuscuta reflexa*, *Cleodendron inerme*, *plumbago zeylanica* are used to treat dandruff, psoriasis, eczema, scabies and other related skin diseases. Root bark of *Tephrosia purpuria* and *Boehavia diffusa* are used to cure stomach pains and anti-flatulent.

Powdered roots of *Barleria prionitis* and *Nerium oleander* are used as bronchiolytics and anti-inflammatory agents respectively (table 7).

Various parts of the under mentioned plants are utilized for an array of therapeutic activities as mentioned below in table 8, 9.

S. No.	Botanical Name	Family	Local Name	Part Used	Utilization
1	<i>Barleria prionitis</i>	Acanthaceae	Kala bansa	Root	For the treatment of Bronchitis 10 gram of root powder soaked in water, filter it and take the filtrate twice in a day for one week.
2	<i>Achyrenthes aspera</i>	Amaranthaceae	Chirchita		Root paste is applied at scorpion bite point two to three times in a day give relief.
3	<i>Nerium oleander</i>	Apocynaceae	Safed Kaner		In severe inflammation powdered roots is apply.
4	<i>Bombax ceiba</i>	Bombaceae	Samel		Impotency can be cure from oral intake of root powder with milk
5	<i>Raphanus sativus</i>	Cruciferae	Muli		Fresh juice of muli helpful to cure syphilis and urinary problem
6	<i>Butea monosperma</i>	Fabaceae	Gulmohar		Palash roots powder are used to cure tuberculosis
7	<i>Tephrosia purpurea</i>	Fabaceae	Sarphankha		Root bark juice are given orally to cure stomach pain
8	<i>Boerhavia diffusa</i>	Nyctaginaceae	Punarnava		powdered root are macerate with water for overnight. Oral Intake of this liquid are useful to expel out the gas from stomach.
9	<i>Withania somnifera</i>	Solanaceae	Ashwagandha		Goat milk and root powder of ashwagandha are given up to 2 to three months for complete procurement of arthritis. Rice are not allowed in between the treatment.
10	<i>Cuscuta reflexa</i>	Convolvulaceae	Amarbel		Watery extract is applied in hair for removing the dandruff.
11	<i>Plumbago zeylanica</i>	Plumbaginaceae	Chetrak		Twice in a day two to five gram of paste on skin cure from the eczema and scabies
12	<i>Clerodendrum inerme</i>	Verbenaaceae	Bharangi		In the treatment of psoriasis and skin disease root paste are helpful

Table 8: Flower, Latex, Mucilage, Oil, Stem and Whole Plant Utilize by Practitioner as Traditional Medicine

S. No.	Botanical Name	Family	Local Name	Part Used	Utilization
1	<i>Zea mays</i>	Poaceae	Makka	Flower	Flower (Male)smoke is useful to cure asthma and after complete ignition ash is taken orally for the same
2	<i>Madhuca latifolia</i>	Sapotaceae	Mahuwa		Mahuwa flower are used to prepare local daru (liquor)
3	<i>Ficus benghalensis</i>	Moraceae	Bargad	latex	White color latex is used for fixing of tooth, latex is also given in the treatment of dysentery and diarrhea
4	<i>Aloe barbadensis</i>	Lilaceae	Ghritkumari	Mucilage	Paste of aloe leaves is useful for glowing skin. In combination with methi seeds are helpful to care hair loss.
5	<i>Calotropis procera</i>	Asclepiadaceae	Madar	Oil	Oil of madar are used to prevent hydrocele by applying on the testis surface for over night
6	<i>Sesamum indicum</i>	Pedaliaceae	Til		For the treatment of bruises first apply the till oil then dry powder of ginger than ash of the aak.
7	<i>Tinospora cordifolia</i>	Menispermaceae	Giloy	Stem	For smooth delivery, stem (one kg) boiled with one-liter water and in that take one cup at delivery pain.
8	<i>Azadirachta indica</i>	Meliaceae	Neem	Whole Plant	Leaves are boiled in water and cool. Bath with this water is used to cure allergy. Bark paste also used to cure eczema
9	<i>Argemone mexicana</i>	Papaveraceae	Bharbanda		one to two-gram root powder are given orally to child for expel out the tape worm

Table 9: Use of Plant Parts by the Traditional Practitioner

S. No.	Plant Part	Use of Plant Part
1	Bark	5
2	Flower	2
3	Fruit	12
4	Latex	1
5	Leaves	23
6	Leaf and flower	1
7	Leaf Juice	1
8	Mucilage	1
9	Oil	2
10	Rhizomes	5
11	Root	12
12	Seeds	4
13	Stem	1
14	Whole Plant	2

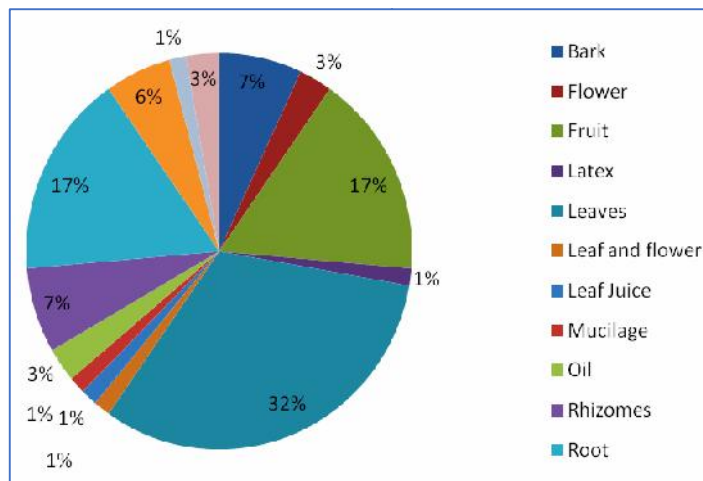


Fig. 3: Plant part used in percentage

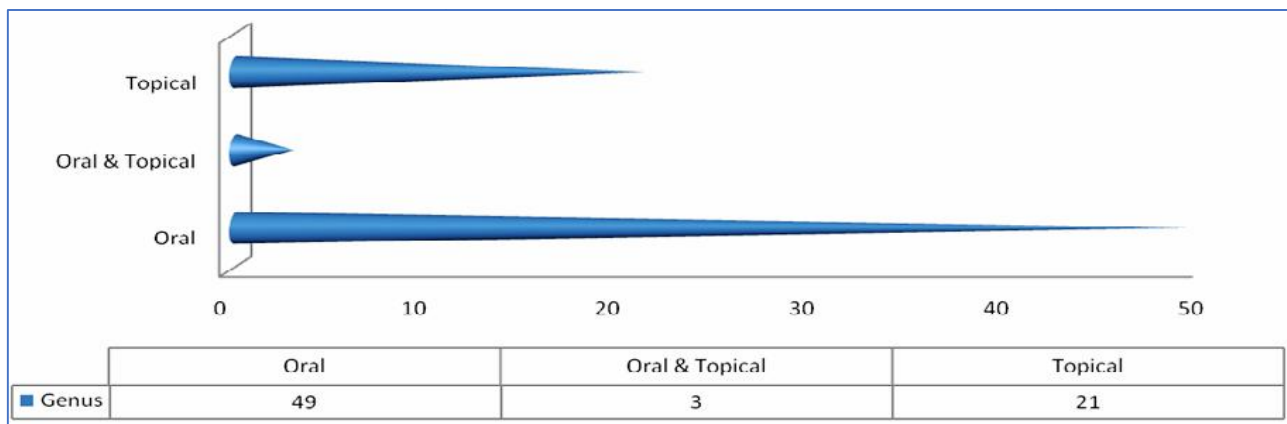


Fig. 4: Mode of Administration of medicinal plants

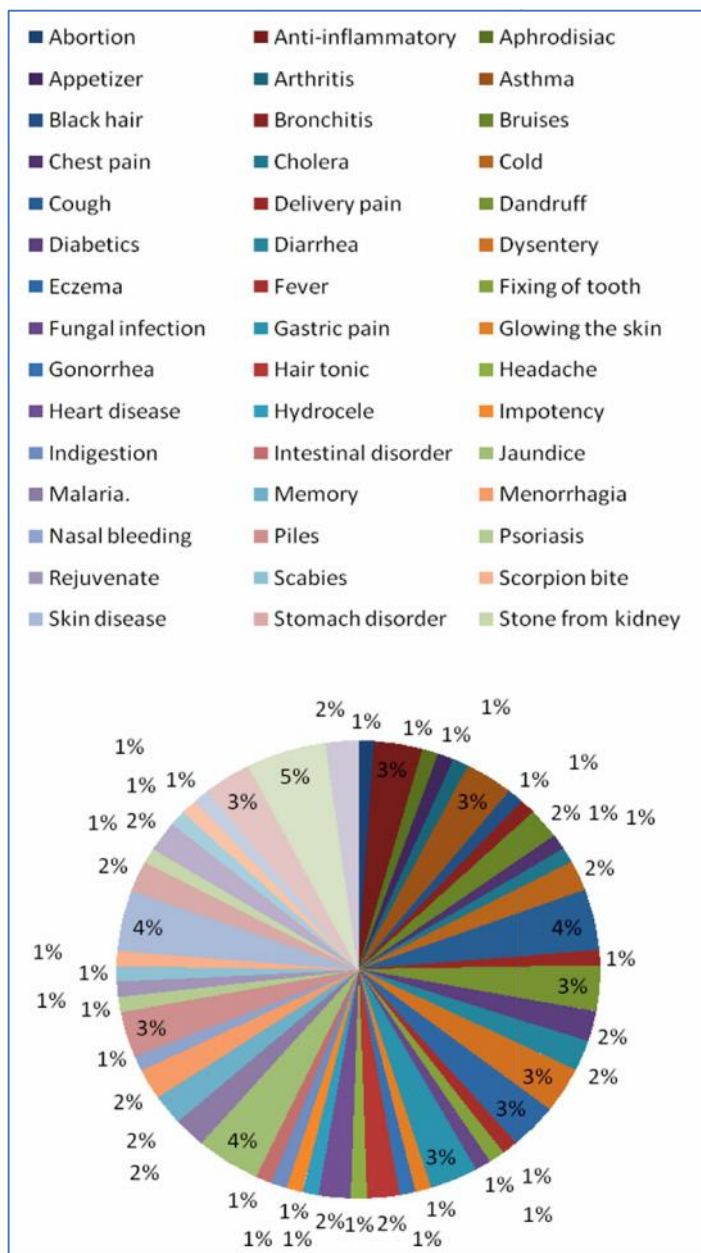


Fig. 5: Ethno-botanical Use of Plants

RESULTS AND DISCUSSION

List of plants were prepared by interviewing Vaidya, Hakim and local villagers. In the study area total seventy-two plants with forty-five families were found to be useful in curing various diseases. Euphorbiaceae and Fabaceae are the two families from which maximum number of plants is used. All the plant part used to cure the disease.

A list have been prepared on the basis of their part used like Bark (5), Flower (2), Fruit (12), Latex (1), Leaves (23), Leaf and flower (1), Leaf Juice (1), Mucilage (1), Oil (2), Rhizomes (5), Roots (12), Seeds (4), Stem (1), Whole Plant (2). Figure 3 give an idea that Traditional Practitioner mostly uses the Leaves (32%), Fruit (17 %) and Roots (17%) for the treatment of Disease. Figure 4 explain the Mode of administration of medicinal plants, in which we have seen that the percentage of Oral root of administration is more other than the topical.

So, we can say most of the Vaidya and hakim are preferred to give dosage as in the form of powder and pills. Number of disease like Abortion, Allergy eczema, Anti-inflammatory, Aphrodisiac, Appetizer, Arthritis, Asthma, Brain tonic, Bronchitis, Bruises, Chest pain, Cholera, Cold and Cough, Dandruff, Delivery pain, Diabetics, Diarrhoea, Dysentery, Eczema, Fever, Fungal infection, Gastric pain, Glowing skin, Gonorrhoea, Headache, Heart disease, Hydrocele, Impotency, Indigestion, Inflammation, Intestinal disorder, Jaundice, Malaria, Memory, Menorrhagia, Nasal bleeding, Piles, Psoriasis, Rejuvenate, Scabies, Scorpion bite, Stomach disorder, Stone, Strengthening of gums, Swollen gums, Syphilis, Tooth fixing, Toothache, Tuberculosis, Urinary problem, Worms and Wounds are cure by these above mentioned medicinal plant.

CONCLUSION

This survey represents the contribution of natural flora of Ghaziabad District. The knowledge text out in the article collected from the vaidya, hakim and practitioners. Further investigation should be carried based on their safety parameters of plants use. This study indicate that traditional health care system is one of the old age practice area. In this article we tried to text out the information which is transmitted from one generation to another generation verbally. It is our duty to preserve this valuable knowledge of indigenious people of traditional healthcare system.

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