

## Floristic diversity and ethnobotanical study of some part of Southern Haryana: Block Narnaul, district Mahendergarh, Haryana, India

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### Abstract

The present document is an analytical data of exploration of floristic diversity and ethnobotanical important plant of block Narnaul, Mahendergarh, Haryana, India. A comprehensive survey conducted during 2016-2018, revealed a total 56 species belonging to 52 genera and 30 families have ethnobotanical importance. Majority of plants are herbaceous (30 species), followed by Tree (15 species), Shrub (06 species) and Climber (05 species). Fabaceae (Commonly known as Leguminosae) have lion's share in representation by 08 genera comprising 10 species, accompanied by Solanaceae 04 genera, 05 species; Asteraceae and Euphorbiaceae 04 genera, 04 species; Amaranthaceae and Moraceae each with three genera and three species and two genera three species respectively and then Cucurbitaceae, Menispermaceae, each expressed by two genera two species; Chenopodiaceae 01 genera and 02 species. Remaining families are monogeneric and monospecific. The study also signifies the reluctant and ignorant attitude of people towards this valuable heritage. The current findings might draw the attention of people and government and could be helpful in proper planning to preserve diversity and natural wealth.

**Keywords:** ethnobotany, floristic diversity, Narnaul, Mahendergarh, southern Haryana

### Introduction

Diversity is the hallmark of nature. Things are present in variety of form that create diversity. India is a land of diversity (Physical, cultural, social, linguistic etc.) and is one of the 17 mega diversity countries in world as recognized by World Conservation monitoring centre in 2000. India harbors about 47513 plant species out of 0.4 million species hitherto in world, representing 11.4% of world in spite of having only 2.4% of landmass of world (ENVIS 2020 [5] report) (Chapman 2009) [3] (Singh and dash, 2014) [19]. But the scenario is quite polar apart with respect to Haryana being one of the leading states of India. Haryana comprises only 3.62% forest cover of total geographical area (SFR, 2019). This signifies that how phytodiversity had paid the cost of economic development. Biodiversity is not only indicator to environmental condition of an area but also have remained an integral part of human society to fulfill the primary needs like food, shelter, clothing as well as remedies to cure various disease since time immortal. Earlier some workers has tried to enumerate some ethnobotanical aspect from some district of Haryana like Lal and Yadav, 1983; Jain 1984; Jain and Verma 1987;

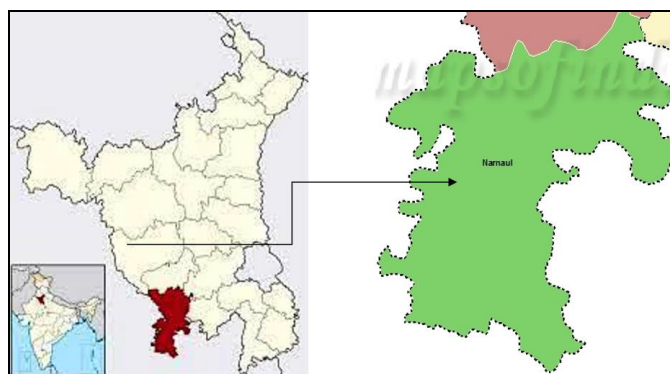
Sharma, *et al.* 1992; Yadav *et al.* 2006; Panghal, 2010 [17]; Yadav, 2010 [17]; Vashistha and Kaur, 2013 [11]; Yadav and Bhandoria, 2013 [21]; Singh and Singh, 2014 [19]; Singh and Vashistha, 2014 [19]; Yadav, 2014. But still Southern Haryana is not explored much.

Keeping the importance of plant resources, present paper emphasizes the Floristic diversity and ethnobotany of Block Narnaul, district Mahendergarh, Haryana.

### Material and method

#### Study site

Narnaul is the head quarter of district Mahendergarh which is among one of few district in India with the name of district different from name of headquarter. It is a municipal council having very popular tourist centers which survived various rules, including Jal-Mahal, Tomb of Ibrahim Khan Sur, Tripolia gate-way of 16<sup>th</sup> century, Tomb of Pir-Turkman, Chamunda Devi mandir, Janki Sarovar, and many more. Every year, thousands of tourists visit the city and learn more about local culture, history and lifestyle. The climatic condition is of semi-desert type. Narnaul is situated between 28° 3' 56.8656" N and 76° 6' 5.3244" E.



**Fig 1:** The map of district Mahendergarh, Haryana, India showing site of investigation.

## Methodology

Substantial expedition and systematic surveys were accomplished round the year of Block Narnaul, district Mahendergarh, Haryana, India to evaluate and proper documentation of Floristic diversity and ethnobotany of plants from 2016 to 18. Plants were photographed from all possible angle and description of all morphological and reproductive details along with habitat and habit noted in field note book. Specimens were collected comprising for future references. Alongside important traditional importance of plants were documented from local people including 'vaid's', 'Ayurvedacharya'. Herbarium was prepared by following standard procedures (Jain *et al.* 1977) [7]. With the assistance of accessible literature, collected

species in herbarium were recognized (Duthie, 1903-23) [4] (Maheswari, 1963) [15] (Jain *et al.* 1977) [7]. For ethnobotanical Purpose 110 people were interviewed among them 64 were women.

## Result and Discussion

The exploration and survey results a collection of number of plants among them about 56 plant species were studied for their ethnobotanical importance. The particulars concerning taxonomy of collected plant species, with their distribution status is furnished by Table – I; simultaneous Table - II expresses the data concerning local name, ethnobotanical utility and used part.

**Table 1:** Scientific name with respective family and distribution in study site

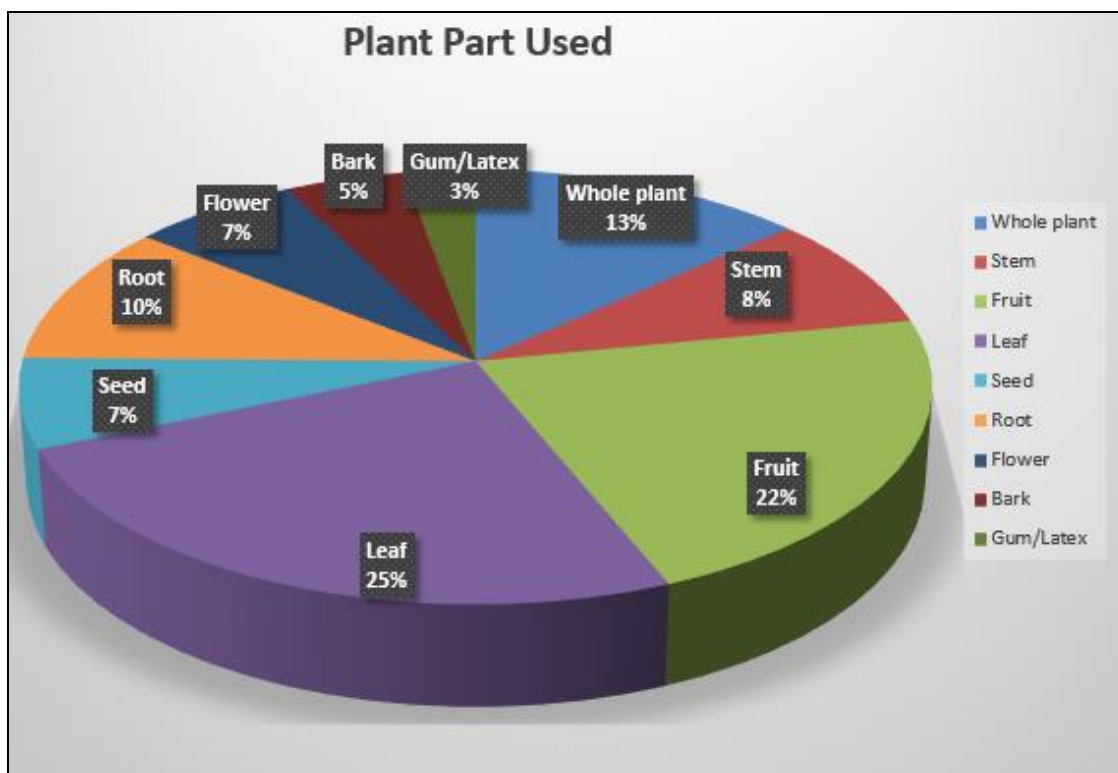
	Name of the species	Family	Habit	Flowering, Fruiting Period	Distribution in study site
1	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Herb	Round the year	Abundant
2	<i>Abrus precatorius</i> L.	Fabaceae	Climber	August to February	Common
3	<i>Acacia nilotica</i> (L.) Sweet	Fabaceae	Tree		Abundant
4	<i>Achyranthes aspera</i> L.	Amaranthaceae	Herb	Round the year	Abundant
5	<i>Aegle marmelos</i> Correa ex. Roxb.	Rutaceae	Tree	April to August	Common
6	<i>Ageratum haustoniam</i> Mill.	Asteraceae	Herb	Dec. to April	Abundant
7	<i>Albizia lebeck</i> (L.) Benth.	Fabaceae	Tree	August to November	Common
8	<i>Amaranthus viridis</i> L.	Amaranthaceae	Herb	August to march	Abundant
9	<i>Anagalis arvensis</i> L.	Primulaceae	Herb	January to April	Common
10	<i>Argemone maxicana</i> L.	Papaveraceae	Herb	January to may	Abundant
11	<i>Asparagus racemosus</i> Willd.	Asparagaceae	Climber	Nov. To December	Uncommon
12	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Tree	March to May	Common
13	<i>Barleria prionites</i> L.	Acanthaceae	Herb	Sept. to December	Common
14	<i>Bauhinia purpurea</i> L.	Fabaceae	Tree	September to March	Uncommon
15	<i>Boerhaavia diffusa</i> L.	Nyctiginaceae	Herb	Round the Year	Abundant
16	<i>Calotropis procera</i> (Aiton) Dryand	Asclepiadaceae	Shrub	February to July	Abundant
17	<i>Cannabis sativa</i> L.	Cannabaceae	Herb	September to March	Common
18	<i>Capparis decidua</i> (Forsk.) Edgew.	Capparidaceae	Tree	March to April	Common
19	<i>Cassia tora</i> L.	Fabaceae	Herb	August to September	Common
20	<i>Cassia fistula</i> L.	Fabaceae	Tree	April to May	Common
21	<i>Chenopodium album</i> L.	Chenopodiaceae	Herb	December to March	Abundant
22	<i>Chenopodium murale</i> L.	Chenopodiaceae	Herb	January to march	Common
23	<i>Citrullus colocynthis</i> (L.) Schard.	Cucurbitaceae	Herb	Round the year	Common
24	<i>Coccinia grandis</i> (L.) J.Voigt	Cucurbitaceae	Climber	July to December	Abundant
25	<i>Cocculus hirsutus</i> (L.) Diels	Menispermaceae	Climber	February to April	Common
26	<i>Commelina benghalensis</i> L.	Commelinaceae	Herb	August to November	Common
27	<i>Croton bonplandianum</i> Baill.	Euphorbiaceae	Herb	Round the year	Common
28	<i>Datura stramonium</i> L.	Solanaceae	Herb	December to May	Common
29	<i>Dalbergia sissoo</i> DC	Fabaceae	Tree	March to August	Common
30	<i>Digera muricata</i> (L.) Mart.	Amaranthaceae	Herb	July to December	Common
31	<i>Eclipta alba</i> (L.) Hassk.	Asteraceae	Herb	Round the Year	Common
32	<i>Eichhornia crassipes</i> Kunth.	Pontederiaceae	Herb	April to august	Abundant
33	<i>Embellica officinalis</i> Gaertn.	Euphorbiaceae	Tree	March to May	Uncommon
34	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Herb	Round the Year	Abundant
35	<i>Ficus benghalensis</i> L.	Moraceae	Tree	March to Sept.	Abundant
36	<i>Ficus racemosa</i> L.	Moraceae	Tree	April to August	Occasional
37	<i>Fumaria indica</i> (Hausskn.) Pugsley	Fumariaceae	Herb	March to November	Abundant
38	<i>Gnaphalium indicum</i> L.	Asteraceae	Herb	December to April	Common
39	<i>Lantana camara</i> L.	Verbenaceae	Shrub	Almost the season	Common
40	<i>Lawsonia inermis</i> L.	Lythraceae	Shrub	July to November	Occasional
41	<i>Morus alba</i> L.	Moraceae	Tree	January to April	Common
42	<i>Nicotiana plumbaginifolia</i> Viv.	Solanaceae	Herb	February to May	Common
43	<i>Pedaliium murex</i> L.	Pedaliaceae	Herb	August to November	Common
44	<i>Prosopis juliflora</i> (Sw.)DC	Fabaceae	Tree	Almost the year	Abundant
45	<i>Ricinus communis</i> L.	Euphorbiaceae	Tree	Almost the year	Common
46	<i>Rumex dentatus</i> L.	Polygonaceae	Herb	January to may	Common
47	<i>Salvadora oleoides</i> L.	Salvadoraceae	Tree	March to July	Abundant
48	<i>Senna occidentalis</i> (L.) Link.	Fabaceae	Shrub	June to October	Common
49	<i>Solanum americanum</i> Mill.	Solanaceae	Shrub	August to January	Uncommon
50	<i>Solanum virginianum</i> L.	Solanaceae	Herb	Almost the year	Common
51	<i>Tephrosia purpurea</i> (L.) Pers.	Fabaceae	Herb	July to December	Common
52	<i>Tinospora sinensis</i> (Lour.) Merr.	Menispermaceae	Climber	February to April	Common

53	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Herb	July to November	Abundant
54	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Herb	February to April	Common
55	<i>Xanthium strumarium</i> L.	Asteraceae	Herb	June to November	Abundant
56	<i>Ziziphus jujuba</i> Lam.	Rhamnaceae	Shrub	Sept to February	Abundant

**Table 2:** Ethnobotanical importance of plants with local name and part used

	Scientific name of the species	Part used	Vernacular name	Traditional importance
1	<i>Abutilon indicum</i> (L.) Sweet	Root system and leaves	Kanghi	Root system both in pulverized form as well as decoction used to cure pulmonary infection and fever while fresh juice of leaves before dawn helps in renal stone. Pulverized leaf given to cattle as remedy for diarrhoea.
2	<i>Abrus precatorius</i> L.	Seed and Root system	Ratti/ Chirmati	Seeds are given to improve mental weakness while its paste applied to joints. Roots extraction helps to cure pulmonary infection as well as to remove intestinal worm.
3	<i>Acacia nilotica</i> (L.) Sweet	Bark, Twig, Gum, Leaves	Desi Kikar, Babool	Bark paste is applied to skin for rashes and other dermal issues and to stop bleeding. An aqueous extract of leaf cure chest infection. Twigs used to strengthen gums and teeth.
4	<i>Achyranthes aspera</i> L.	Root, twigs, Leaf, Floral parts	Ultakanta/ kutri	Whole plant aqueous extraction is very effective in pneumonia and also diuretic for cleansing kidney. Flowers and seed paste is good antidote to snakebite. Leaves are good substitute for spinach.
5	<i>Aegle marmelos</i> (L.) Corre'a	Fruits	Bel patra	Fresh fruit juice prevents chronic dysentery and abdominal issues.
6	<i>Ageratum haustoniam</i> Mill.	Leaves	Ganghili	Paste of leaves applied to skin for dermal issues and extraction cure gastric problems.
7	<i>Albizia lebbek</i> (L.) Benth.	Bark, Seed	Siras	Seed oil relieves the pain of pile and cure it. Pulverized bark used to treat alveolar congestion.
8	<i>Amaranthus viridis</i> L.	Fresh leaves	Chaulai	Tender stem and leaves are edible and good source of Iron so helpful in treatment of anemia, also bear anti venom properties.
9	<i>Anagalis arvensis</i> L.	Whole plant	Jonkmari	Helpful in treatment of many issues like leprosy, gout, dropsies; boost mental weakness. Given to cattle to expulsion of leeches.
10	<i>Argemone maxicana</i> L.	Whole plant, chiefly flowers and Latex	Satynasi/ Pilibutti	Aqueous extraction of plant utilized to cure liver health. Flowers cure alveolar congestion and latex applied for dermal infection.
11	<i>Asparagus racemosus</i> Willd.	Roots	Stawari	Pounded root mixed with honey is very effective against epilepsy.
12	<i>Azadirachta indica</i> A. Juss.	Whole plant	Neem	Leaves effective antiseptic and antihelmenthic; leaf paste effective in dermal issues. Fruits bear blood purification properties. Dry leaves fumes repel mosquitoes. Bark paste applied to achenes.
13	<i>Barleria prionites</i> L.	Leaves, roots	Pila bansa	Burnt powder of roots and leaves well mixed with honey is good expectorant. Chewing fresh leaves prevent cavities and toothache. Leaf paste applied to bare feet to relieve cracks.
14	<i>Bauhinia purpurea</i> L.	Pods, root, Flower bud, and bark	Khairwal	Floral bud, root and bark are good for stomach related issues as having good fiber content; relieve flatulence.
15	<i>Boerhaavia diffusa</i> L.	Whole plant	Santi/ Punarnava	Plant is effective vitalizing agent; Aqueous extraction has diuretic, laxative and expectorant qualities. Also helpful in treatment of liver, renal and eye disorders
16	<i>Calotropis procera</i> (Aiton) Dryand.	Root, flower, leaf and latex	Aak	Pulverized leaves and flowers taken in leucoderma and their paste applied in rheumatism. Leaf ash with honey good expectorant; latex relieves toothache, earache and applied to dermis for rashes.
17	<i>Capparis decidua</i> (Forsk.) Edgew.	Fruit	Teent	Helpful in gastric issues and have good antioxidant properties.
18	<i>Cannabis sativa</i> L.	Leaf and seed and female inflorescence	Baang	Plant decoction has anti-asthmatic and anti-dysentery properties; also have used in mental issue in having sedative and hypnotic qualities. Used as narcotic also.
19	<i>Cassia tora</i> L.	Leaves and seed	Panwad	Meshed leaf has cooling and purgative effect. Seed have anti inflammatory and antifungal properties.
20	<i>Cassia fistula</i> L.	Fruit and seed	Amaltas	Ripe fruit extraction helpful in treatment of pulmonary infection. Seed are taken as laxative and known as good blood purifier.
21	<i>Chenopodium album</i> L.	Whole plant	Bathua	Known to have good amount of Iron and Vitamin-A. Taken as vegetable. Root decoction used for Liver health and in jaundice. Also treat constipation and expel intestinal worms.
22	<i>Chenopodium murale</i> L.	Whole Plant	Kharthua	Leaves and stem paste is good pain reliever; also helpful in alveolar congestion if taken with jaggery.
23	<i>Citrullus colocynthis</i> (L.) Schard.	Fruit	Gadtumba	Taken as remedy of rheumatism and gout.
24	<i>Coccinia grandis</i> (L.) J.Voigt	leaf, fruit and Root	Ram kachri / Chibaad	Fresh leaf extracts cure ulcer and sore throat. Fruits are edible. Also helpful in controlling blood sugar level.
25	<i>Cocculus hirsutus</i> (L.)W. Theob.	Root and leaf	Jaljamanti	Roots as pain-killer; leaves paste anti-inflammatory and applied on dermis and scorpion-bite. Eczema and leukemia can be cure by decoction of leaf.
26	<i>Commelina benghalensis</i> L.	Whole plant	Kana	Remedy for constipation and acidity being laxative and demulcent. Leaf can be used as moisturizing cream and ingredients of many such creams.
27	<i>Croton bonplandianum</i>	Leaf and Stem	Ban Tulsi	Pulverized leaf associated with Avnla and Reetha powder strengthen hair follicle and cleans scalp. Fresh extract of tender stem used in cataract.

	Baill.			
28	<i>Datura stramonium</i> L.	Leaf, Fruit and seed	Dhatura	Narcotic and Hallucinogenic. Leaf extraction used in urinogenital issues. If consumed right proportion seed have abortive property. Also paste of seed in mustard oil applied for dermal issues.
29	<i>Dalbergia sissoo</i> DC	Heart wood, flowers and Leaf	Shisham	Heart wood used in furniture and other household articles. Leaf have soothing effect so applied on sunburn as paste and used in "Thandai" with flowers as well as helpful in urinogenital issues.
30	<i>Digera muricata</i> (L.) Mart.	Whole plant	Kundra / Tartara	Plant is good source of Iron and Vitamins; edible; flowers and seed have helps in removal of blockage in urinary pathway. Leaves have cooling effect and blood-coagulant properties.
31	<i>Eclipta alba</i> (L.) Hassk.	Whole plant	Bhringraj	A good health tonic, hair tonic and antiseptic. Plant extract used for dermal problems. Mustard oil extraction of plant applied on joint for pain relievers.
32	<i>Embellica officinalis</i> Gaertn.	fruit	Avnla, Amla	Fruit are good immunity-booster and can be taken in any form pickle, jam, or raw. Good source of Vitamin-C. Helps in blackening of hairs and follicle strength.
33	<i>Eichhornia crassipes</i> (Mart.) Solms	Inflorescence and whole plant	Jal kummi	Plant is good reclamation agent in water-logged area. Beautiful pot-herb. Can block public drainage system also.
34	<i>Euphorbia hirta</i> L.	Whole plant	Dudhi	Latex for dermal issues; Foliage decoction remedy for pulmonary infection; crude extraction of leaf cure jaundice and mycoses.
35	<i>Ficus benghalensis</i> L.	Fruit, Prop root, Gum and Bark	Badd	Prop roots have ingredients to cure urinogenital problems; paste of bark applied to wound. Fruit edible; plant gum is ingredient of many moisturizing cream being emollient.
36	<i>Ficus racemosa</i> L.	Fruit and bark	Gullar	Pulverized bark known to control blood sugar; remedy for leucorrhoea, small pox and leprosy. Fruit edible being rich in minerals.
37	<i>Fumaria indica</i> (Hausskn.) Pugsley	Shoot	Shastra papra	A good blood purifier if juice is consumed with black pepper. Anti-nausea and anti-pyretic.
38	<i>Gnaphalium indicum</i> L.	Whole plant	Gaadi / Raksha	Anti-inflammatory and good healing agent. Used to treat fractured bone.
39	<i>Lantana camara</i> L.	Twig, Fruit	Nilgiri	Fruits are edible. Stem and twigs being very flexible and tough, used to make household articles like basket, "Jhula".
40	<i>Lawsonia inermis</i> L.	Leaves and fruit	Mehndi, Heena	Heena powder have natural dye "Lawson" used in paste form in auspicious rituals like marriage etc.; also applied on hairs to colour. Have soothing effect so used in sun-burn and skin-burn.
41	<i>Morus alba</i> L.	Fruit, Leaf and sticks	Tut, Tutri	Being rich in minerals and Vitamins fruits are edible, also remedy for sore throat, melancholia; twigs flexible and durable to make chairs and table. Leaves as fodder.
42	<i>Nicotiana plumbaginifolia</i> Viv.	Root and leaves	Jungli Tambakhu, ban tambhakhu	Being little narcotic, Substitute for "Tambhakhu leaf"; in ratio 3:2:1 of paste of roots, black pepper, and cumin seed known to cure piles.
43	<i>Pedaliium murex</i> L.	Leaf and Fruit	Bada Ghokhru	Fodder; little aphrodisiac. Known to regulate blood sugar.
44	<i>Prosopis juliflora</i> (Sw.)DC	Twig, Fruit	Vilayti kikar	Used as firewood; fruits are edible both for cattle and human.
45	<i>Ricinus communis</i> L.	Leaves, Fruit	Aarand, Castor	Leaf poultice used to cure wound and dermal infection; castor oil having laxative properties.
46	<i>Rumex dentatus</i> L.	Whole plant	Jungli Palak	Fodder; aqueous extraction of leaf good remedy for mouth ulcer, wound as well as insect-bite. Pulverized root relieves constipation. Seeds taken after delivery for fast recovery.
47	<i>Salvadora oleoides</i> Decne.	Fruit, Leaf	Dungar / Pilu/ jaal	Fodder for camel; being rich in minerals and water fruits are edible. A good afforestation agent in desert.
48	<i>Senna occidentalis</i> (L.) Link.	Leaves	Kasondi	Remedy for dermal and pulmonary infections.
49	<i>Solanum americanum</i> Mill.	Leaves, Fruit	Mako	Leaves are Remedy for joint pain if applied in paste form. Fruit helps to maintain joint health.
50	<i>Solanum virginianum</i> L.	Fruit, Leaves	Jharjhalai, Kantili	Brunt fruit fumes taken to relieve toothache. Leaf poultice applied on wound and achenes.
51	<i>Tephrosia purpurea</i> (L.) Pers.	Whole plant	Sarpankha	Flowers used as appetite-booster; remedy for pulmonary infection.
52	<i>Tinospora sinensis</i> (Lour.) Merr.	Stem	Giloy	Immunity-booster; tender stem have anti-pyretic properties. Leaf juice used in treatment of dengue.
53	<i>Tribulus terrestris</i> L.	Flower, fruit and leaf	Chhota Ghokhru	Flowers and fruits having aphrodisiac value; fodder. Diuretic and known to regulate blood pressure.
54	<i>Withania somnifera</i> (L.) Dunal	Fruit, Leaves	Asvgandha	Aphrodisiac; neuron-booster. Remedy for joint pain and rheumatism.
55	<i>Xanthium strumarium</i> L.	Seed, Fruit	Bharoot	Seeds are taken to cure ulcer. Fruits used as renal cleanser as have diuretic properties.
56	<i>Ziziphus jujuba</i> Lam.	Fruit and leaf	Ber	Fruits are rich in many valuable minerals and Vitamins so edible; leaf good forage for cattle chiefly goat.



**Fig 2:** Proportion of plant parts used Ethnobotanically

The Pie diagram clearly revealed the fact that leaf is the plant part which is chiefly utilized traditionally and

ethnomeditionally for various purposes followed by fruit, whole plant, root, stem, flower, seed, bark and gum/latex.

**Table3:** Family wise representation of Number of genera and number of species

	Family	Number of genera	Number of Species
1	Fabaceae	08	10
2	Solanaceae	04	05
3	Euphorbiaceae	04	04
4	Asteraceae	04	04
5	Amaranthaceae	03	03
6	Moraceae	02	03
7	Menispermaceae	02	02
8	Cucurbitaceae	02	02
9	Chenopodiaceae	01	02
10	Malvaceae	01	01
11	Rutaceae	01	01
12	Primulaceae	01	01
13	Papaveraceae	01	01
14	Asparagaceae	01	01
15	Meliaceae	01	01
16	Acanthaceae	01	01
17	Nyctiginaceae	01	01
18	Asclepiadaceae	01	01
19	Canabinaceae	01	01
20	Cappararidaceae	01	01
21	Commelinaceae	01	01
22	Pontederiaceae	01	01
23	Moraceae	01	01
24	Verbenaceae	01	01
25	Lythraceae	01	01
26	Pedaliaceae	01	01
27	Polygonaceae	01	01
28	Salvadoraceae	01	01
29	Zygophyllaceae	01	01
30	Rhamnaceae	01	01

The data divulged in given document reveals the fact that family Fabaceae (commonly known as Leguminosae)

topped the rank with 08 genera comprising 10 species, there after Solanaceae being tetra generic having 05 species;

Asteraceae and Euphorbiaceae tetra generic with 04 species; Amaranthaceae and Moraceae expressed by three genera including three species and two genera, three species sequentially followed by Cucurbitaceae, Menispermaceae

with two genera two species; Chenopodiaceae monogeneric with 02 species. Remaining are monogeneric and monospecific (Table III).

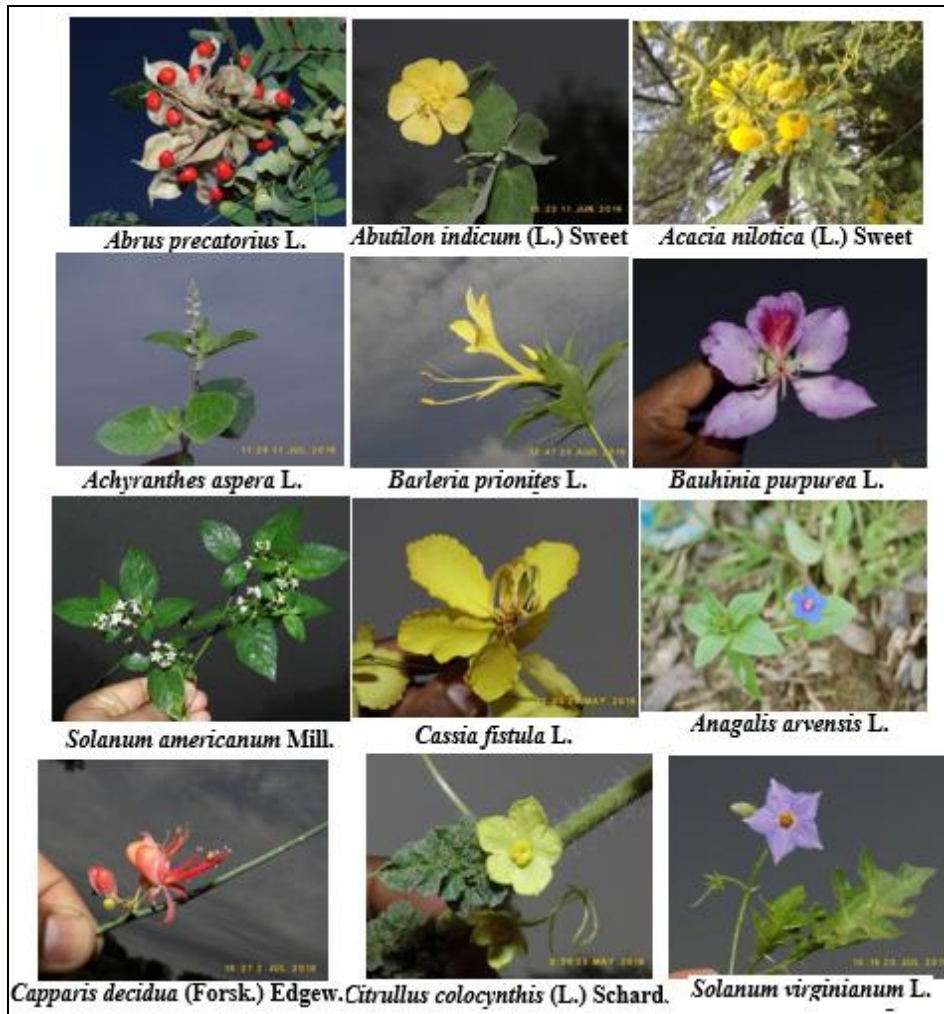


Fig 3: Photographs of some documented plants

### Conclusion

On the basis of above presented data and observation one may easily conclude that the Block Narnaul, district Mahendergarh (Haryana) have significant floristic diversity and good understanding of ethnobotanical aspects of local flora. Still their routine life has influence of local vegetation and their traditional uses. The people used to experience their traditional knowledge at least once before going to doctors. But unfortunately due to unawareness and lack of proper documentation this priceless legacy is shrinking day by day. Therefore, it necessitate to explore more and more local flora for the purpose and to spread awareness among locals for this priceless wealth.

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