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A Study on Medicinal Plants of Talwara Block, District Hoshiarpur, Punjab, India

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ABSTRACT

The present research work was carried out in Talwara Block, District Hoshiarpur, Punjab, India to identify and to understand the uses of medicinal plants for the treatment of various ailments. The study was undertaken with the help of questionnaire and discussion method. About 100 medicinal plant species belonging to 52 families were documented. Out of 100 medicinal plants, 40 species were herbs, 13 species were shrubs, 40 species were trees, 5 species were climbers and 2 species were grasses. Leaves were the most useful part as compared to other plant parts for the treatment of various ailments. Different parts of plants such as roots, bark, leaves, seeds, flowers etc. were used in various forms like paste, decoction, powder, oil etc. to treat various ailments. 15 key informants were selected to collect the information. During research, it has been observed that the villagers were chiefly dependent on the plants as they were familiar with their use for different ailments.

Introduction

Throughout the ages, humans have relied on nature for their basic needs for production of food, shelter, clothing, transportation, fertilizer, flavours and fragrances and medicines. Plants have played a great role in the growth and development of human race. First and the most important necessity for human life is the oxygen which is provided by the plants. Medicinal plants encompass a vast array of botanical species, including herbs, trees, shrubs, and even certain fungi. Each plant contains specific bioactive compounds that contribute to its medicinal properties. These compounds may include alkaloids, flavonoids, terpenoids, and phenolic compounds, among others. The use of medicinal plants can be traced back to the earliest human societies, where plants were essential for survival. Medicinal plants have profound cultural significance, serving as symbols of healing, spirituality, and connection to nature in many societies. Using medicinal plants preserves cultural traditions and knowledge passed down through generations, enriching cultural heritage and identity. In India, it was Jain (1986) from NBRI, Lucknow, affectionately known as Father of Indian ethnobotany who made pioneering investigations. Schultes (1962) interpreted ethnobotany as usually the study of relationships which exist between people of a primitive society and their plant environment. Many of today's pharmaceutical drugs have their origins in medicinal plants. Some studies suggested that the medicinal plants are a potential source for the development of new herbal drugs (Kumar, 2016). Recently, WHO estimated that 80% of people worldwide rely on herbal medicines for some aspect of their primary health care needs. According to WHO, around 21,000 plants species have the potential for being used as medicinal plants. Treatment with medicinal plants is considered very safe as there is no or minimal side effects. Medicinal plants or the drugs obtained from plants are in wide use around the world. Singh *et.al*. (2018) reported that the 151 medicinal herbs of Punjab, India belonging to different families have been used in curing different serious health troubles. Now a days plant plays a significant role in the various industries such as many pharmaceutical companies which utilizes medicinal plants as sources of active ingredients for developing drugs and medications. The nutraceutical industry incorporates medicinal plants into products like dietary supplements, functional foods, and herbal teas to promote health and well-being. Plants like turmeric, ginger, and garlic are popular choices for their therapeutic properties. Medicinal plants are commonly used in cosmetics and personal care products due to their skincare benefits. A review on use of medicinal plants in traditional health care practices in Talwandi Sabo, Bathinda District, Punjab, India was given by Kaur *et.al*. (2020). Analysis of data revealed the use of 88 medicinal plant species belonging to 77 genera and 42 families for the treatment of about 60 ailments. The highest number of plants was used for gastrointestinal problems, skin problems followed by respiratory diseases, skeletomuscular diseases and dental problems. Sidhu *et.al*. (2011) reported that people were mostly using the wild plant species for making traditional medicines in Hoshiarpur district of Punjab and leaves were the most useful part as compared to other plant parts. Sidhu, *et.al*. (2012) in Jalandhar district of Punjab, India to document traditional medicinal plant species utilized for the treatment of various human as well as animal ailments. It has been observed that people of the area were using 119 plant species comprising 109 genera and 57 families. Ethnomedicinal Studies in Amritsar district of Punjab, India was conducted by Singh (2018) reported that the overall public of in and around domain of Amritsar district of Punjab

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have been using different herbs for accommodating reason since time immemorial. Villagers essentially depend upon the herbs for all ailments. So, the present study was carried out to document the traditional medicinal plant knowledge from the area under investigation.

Materials and Methods

Study Area:

Talwara is a beautiful city, just 58 Kilometres from Hoshiarpur district in the Indian state of Punjab. It is near to the border of the state of Himachal Pradesh. It is a town located at the fringes of Shivalik range of mountains. Talwara is located at 31.95°N and 75.87°E. It has an average elevation of 326 metres. This place is known for proximity to Pong Dam. It is situated on the banks of Pong Left Main Canal. Locally, known as Shah Neher. Hoshiarpur district is one of the oldest districts of Punjab, is located in the North-east part of the Punjab state and shares common boundaries with Gurdaspur district in the north-west, Jalandhar district and Kapurthala district in south-west, Kangra district and Una district of Himachal Pradesh in the north-east. Hoshiarpur district comprises 4 sub-divisions, 10 community development blocks, 9 urban local bodies and 1417 villages. The district has an area of 3365 km^2. The **map** of the study area is given below.

Field Survey

During the field survey the data was collected along various lines in different manners by enquiry, observation, interview and discussion. A camera was carried during survey and the most common and ethnobotanically important plants were photographed. During the present study 15 key informants (**Table-1**) were selected. The informants were selected from nearby villages of the study area. Some informants were also selected based on their knowledge, interest and cooperation in the proposed research work. Semi structured interviews were conducted with informants at various places like at their homes and during walk with them. Questionnaire was used for reporting information about the plants such as local name, part used and remedies which are used in the treatment of diseases.

Collection of Material

The plants were collected in flowering seasons, if flowers and fruits were not present, the leafy material was collected. And at the time of plant collection necessary data was also recorded such as date, time, locality, latitude, longitude, elevation, landmark information etc. The plants specimens were collected, dried, preserved and mounted on herbarium sheets. And labels containing all information about plants and name of the collector were attached along with the mounted plant specimens on the herbarium sheets. In this way the plants were preserved.

Results and Discussion

During the course of present research work a total of 100 species of medicinal plants were reported. These species belong to 92 genera and 52 different families and maximum members were belonging to fabaceae and asteraceae families as shown in **Fig.2**. The collected medicinal plant species were of varied habits and habitats. Out of 100 medicinal plants species, 40 species were herbs, 13 species were shrubs, 40 species were trees, 5 species were climbers and 2 species were grasses as shown in **Fig.3**. Each plant or its individual parts have their own significance in traditional remedies. Out of 100 medicinal plant species, there were 55 species in which the entire plant is used as medicines for the treatment of various ailments as shown in **Fig.4**. Leaves were the most useful part as compared to other plant parts for the treatment of various ailments.The results were presented in the tabular form (**Table-2**). The plants were also arranged in alphabetical order and the botanical name of plant species are given with their local name, family name and habit and the plant part used as medicine.

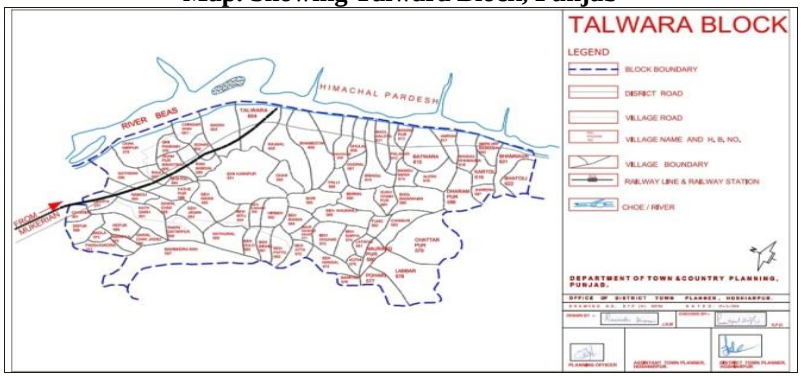
Threats and Conservation

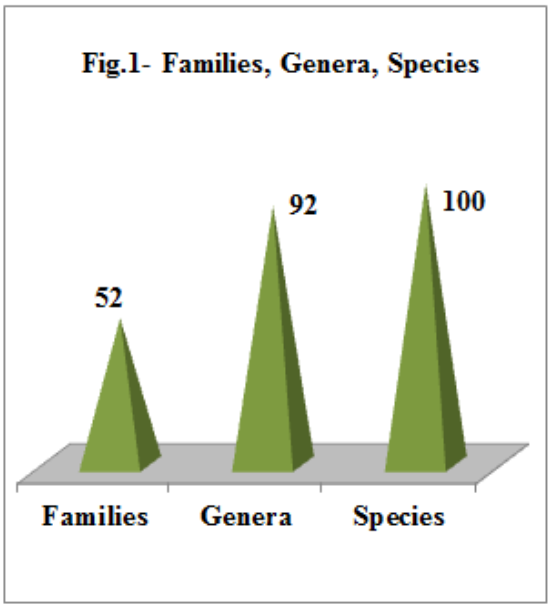
During the investigation it has been observed that the plant diversity of Talwara is now decreasing to a great extent. Many factors are affecting the flora of the study area like habitat destruction, over-exploitation, urbanization, human interference/activities, improper collection, grazing and deforestation and other biotic factors. So, for the conservation of medicinal plants herbal gardens should be developed in Talwara region. The government of Punjab should encourage the villagers for cultivation of medicinal plants in their localities. Botanical gardens, arboreta, and seed banks should be developed to cultivate and maintain living collections of medicinal plants. Promote cultivation programs to grow medicinal plants in controlled environments, reducing pressure on wild populations. This can involve community gardens, agroforestry initiatives, and supporting local farmers.

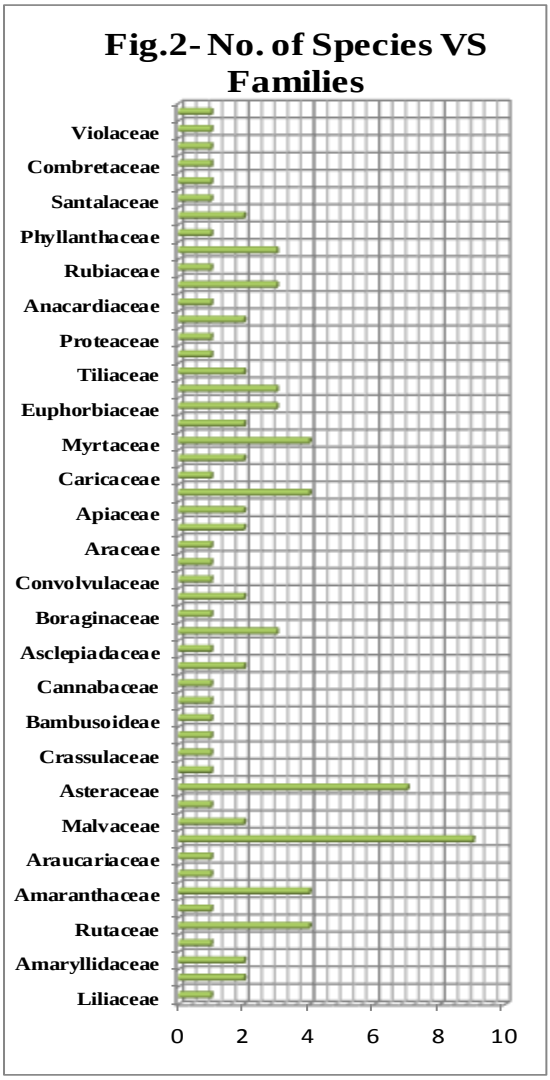
Conclusion

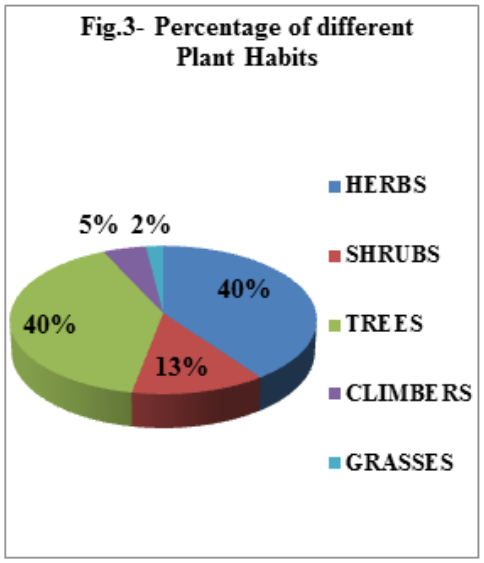
The present investigation proved that the practice of traditional plant medicines is still alive in the area under investigation. The medicinal plants are playing very important role for people of this area. Almost all plants have some medicinal use. The medicine men, elder men and women of the study area have enormous knowledge about the treatment and remedies to cure various ailments with the help of medicinal plants. Due to medicinal and other important uses these plants are exploited in alarming rates and the plant diversity is getting decrease day by day. That is why these plants need to conserve by in-situ and ex-situ conservation methods for the sustainable development.

Map. Showing Talwara Block, Punjab









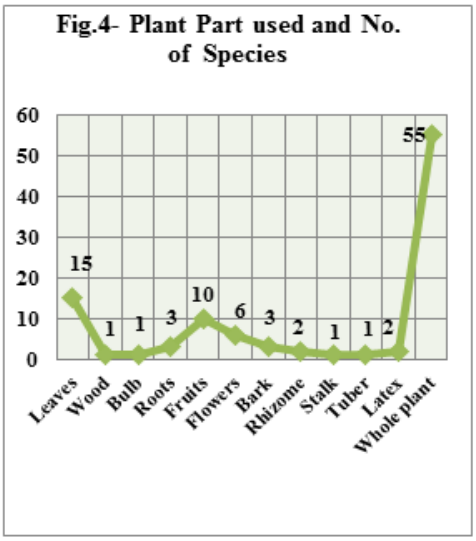


Table-1 Names of Informants with their age, sex and occupation

Sr.No.	Name	Age	Sex	Occupation
1	Ajay Thakur	50	Male	Contractor
2	Surinder Kumar	62	Male	Farmer
3	Sanyogita	75	Female	Knowledgeable
4	Yogesh Kumar	45	Male	Army retired
5	Sonia Rani	45	Female	Knowledgeable
6	Bimla Devi	80	Female	Knowledgeable
7	Kiran Jyoti	42	Female	Knowledgeable
8	Vikas Thakur	30	Male	In HPSEBL
9	Sunil Kumar	50	Male	Farmer
10	Sakshi Thakur	30	Female	Knowledgeable
11	Savita	60	Female	Knowledgeable
12	Neelam	58	Female	Knowledgeable
13	Ravinder Singh	60	Male	Farmer
14	HarvinderKumar	59	Male	Farmer
15	Prem Kumar	55	Male	AyurvedicDoctor

Table-2 List of Medicinal Plants with their local name, Family, Habit and Part used:

Sr. No.	Botanical Name	Local Name	Family	Habit	Part Used
1.	*Aloe barbadensis*	Ghee Kunvar	Liliaceae	Herb	Leaves
2.	*Azadirachta indica*	Neem	Meliaceae	Tree	Leaves
3.	*Allium sativum*	Lahasun	Amaryllidaceae	Herb	Bulb
4.	*Asparagus racemosus*	Shatavari	Asparagaceae	Climber	Roots
5.	*Acacia catechu*	Khair	Mimosaceae	Tree	Bark
6.	*Aegle marmelos*	Bael	Rutaceae	Tree	Fruits, Leaves
7.	*Allium cepa*	Piyaz	Amaryllidaceae	Herb	Bulb, Leaves
8.	*Annona squamosa*	Sitaphal	Annonaceae	Tree	Fruits, Leaves
9.	*Achyranthes aspera*	Puthkanda	Amaranthaceae	Herb	Whole plant
10.	*Argemone mexicana*	Satyanashi	Papaveraceae	Herb	Seeds, Leaves
11.	*Araucaria heterophylla*	Starpine	Araucariaceae	Tree	Bark
12.	*Acacia nilotica*	Kikar	Fabaceae	Tree	Bark
13.	*Abelmoschus esculentus*	Bhindi	Malvaceae	Herb	Pods
14.	*Adhatoda vasica*	Basuti	Acanthaceae	Shrub	Whole plant
15.	*Amaranthus viridis*	Chulai	Amaranthaceae	Herb	Leaves, Stem
16.	*Ageratum conyzoids*	Visadodi	Asteraceae	Herb	Leaves
17.	*Albizia lebbeck*	Shirish	Fabaceae	Tree	Bark, Leaves
18.	*Bauhinia variegata*	Kachnar	Fabaceae	Tree	Whole plant
19.	*Butea monosperma*	Plash	Fabaceae	Tree	Flowers, Bark
20.	*Bombax ceiba*	Simul	Bombacaceae	Tree	Bark, Leaves
21.	*Bryophyllum pinnatum*	Patharchatta	Crassulaceae	Herb	Leaves
22.	*Brassica campestris*	Sarson	Brassicaceae	Herb	Seeds, Leaves
23.	*Bellis perennis*	Daisy	Asteraceae	Herb	Flower, Leaves
24.	*Bambusa vulgaris*	Baans	Bambusoideae	Grass	Leaves, Shoots
25.	*Bougainvillea spectabilis*	Booganvel	Nyctaginaceae	Shrub	Flower, Leaves
26.	*Cannabis sativa*	Bhang	Cannabaceae	Herb	Leaves, Buds
27.	*Catharanthus roseus*	Sadabahar	Apocynaceae	Herb	Flower, Leaves
28.	*Calotropis gigantea*	Akk	Asclepiadaceae	Shrub	Whole plant
29.	*Citrus limon*	Nimbu	Rutaceae	Tree	Fruits
30.	*Cymbopogon citratus*	Lemon grass	Poaceae	Herb	Leaves
31.	*Chenopodium album*	Bathu	Amaranthaceae	Herb	Leaves, Stem
32.	*Cordia myxa*	Lasoora	Boraginaceae	Tree	Fruits
33.	*Curcuma longa*	Haldi	Zingiberaceae	Herb	Rhizome
34.	*Cuscuta reflexa*	Amarbel	Convolvulaceae	Climber	Whole plant
35.	*Colocasia esculenta*	Arbi	Araceae	Herb	Corms, Leaves
36.	*Chlorophytum comosum*	Spider plant	Asparagaceae	Herb	Leaves
37.	*Coriandrum sativum*	Dhaniya	Apiaceae	Herb	Leaves, Seeds
38.	*Cynodon dactylon*	Doob	Poaceae	Herb	Leaves, Stem
39.	*Citrus reticulata*	Santra	Rutaceae	Tree	Fruits
40.	*Capsicum annum*	Mirch	Solanaceae	Herb	Fruits
41.	*Calendula officinalis*	Genda	Asteraceae	Herb	Flower
42.	*Carica papaya*	Papita	Caricaceae	Tree	Fruits
43.	*Cucumis sativus*	Khira	Cucurbitaceae	Climber	Fruits
44.	*Callistemon viminalis*	Bottle brush	Myrtaceae	Tree	Leaves, Flower
45.	*Cassia fistula*	Ambaltas	Fabaceae	Tree	Whole plant
46.	*Dodonaea viscosa*	Mehnded	Sapindaceae	Shrub	Leaves, Stem
47.	*Dalbergia sissoo*	Tahli	Fabaceae	Tree	Leaves, Bark
48.	*Eucalyptus tereticornis*	Safeda	Myrtaceae	Tree	Leaves
49.	*Euphorbia hirta*	Dudhi	Euphorbiaceae	Herb	Whole plant
50.	*Euphorbia royleana*	Thor	Euphorbiaceae	Herb	Latex
51.	*Euphorbia milii*	Tajgi	Euphorbiaceae	Shrub	Latex
52.	*Foeniculum vulgare*	Saunf	Apiaceae	Herb	Seeds, Leaves
53.	*Ficus religiosa*	Peepal	Moraceae	Tree	Leaves, Bark
54.	*Ficus benghalensis*	Bohar	Moraceae	Tree	Leaves, Bark
55.	*Grewia tiliifolia*	Dhaman	Tiliaceae	Tree	Leaves, Roots
56.	*Grewia optiva*	Beul	Tiliaceae	Tree	Whole plant
57.	*Geranium lucidum*	Cranesbill	Geraniaceae	Herb	Leaves
58	*Grevillea robusta*	Silver Oak	Proteaceae	Tree	Bark, Leaves
59.	*Hibiscus rosa - sinensis*	China rose	Malvaceae	Shrub	Flowers
60.	*Helianthus annuus*	Surajmukhi	Asteraceae	Herb	Flower, Seeds
61.	*Lantana camara*	Ghaneri	Verbenaceae	Shrub	Leaves, Stem
62.	*Litchi chinensis*	Litchi	Sapindaceae	Tree	Fruits, Seeds
63.	*Murraya koenigii*	Kadi patta	Rutaceae	Tree	Leaves
64.	*Melia azedarach*	Dhrek	Meliaceae	Tree	Bark, Leaves
65.	*Mangifera indica*	Amb	Anacardiaceae	Tree	Fruit, Leaves

66.	*Momordica charantia*	Karela	Cucurbitaceae	Climber	Fruit, Seeds
67.	*Mentha spicata*	Pudina	Lamiaceae	Herb	Leaves
68.	*Mitragyna parvifolia*	Kaim	Rubiaceae	Tree	Whole plant
69.	*Morus nigra*	Shahtoot	Moraceae	Tree	Fruits
70.	*Ocimum sanctum*	Tulsi	Lamiaceae	Shrub	Leaves
71.	*Parthenium hysterophorus*	CongressGrass	Asteraceae	Herb	Leaves
72.	*Psidium guajava*	Amrood	Myrtaceae	Tree	Fruits, Leaves
73.	*Pyrus communis*	Nashpati	Rosaceae	Tree	Fruits, Leaves
74.	*Phyllanthus emblica*	Amla	Phyllanthaceae	Tree	Fruits
75.	*Prunus persica*	Aadu	Rosaceae	Tree	Whole plant
76.	*Perilla frutescens*	Bhanjeera	Lamiaceae	Herb	Leaves, Seeds
77.	*Populus deltoides*	Poplar	Salicaceae	Tree	Bark, Leaves
78.	*Rauwolfia serpentina*	Sarpagandha	Apocynaceae	Shrub	Roots
79.	*Rosa indica*	Gulab	Rosaceae	Shrub	Flowers
80.	*Stevia rebaudiana*	Stevia	Asteraceae	Herb	Leaves
81.	*Syzygium cumini*	Jamun	Myrtaceae	Tree	Fruits, Seeds
82.	*Saraca asoca*	Ashok Tree	Fabaceae	Tree	Bark
83.	*Santalum album*	Chandan	Santalaceae	Tree	Wood
84.	*Saccharum officinarum*	Ganna	Poaceae	Grass	Stalks
85.	*Solanum tuberosum*	Aalu	Solanaceae	Herb	Tubers
86.	*Solanum lycopersicum*	Tamatar	Solanaceae	Herb	Fruits
87.	*Spinacia oleracea*	Paalak	Amaranthaceae	Herb	Leaves
88.	*Salix alba*	Willow	Salicaceae	Tree	Bark
89.	*Tinospora cordifolia*	Giloy	Menispermaceae	Climber	Whole plant
90.	*Trigonella foenum -graecum*	Methi	Fabaceae	Herb	Leaves, Seeds
91.	*Terminalia chebula*	Harad	Combretaceae	Tree	Fruits
92.	*Tradescantia pallida*	Purple queen	Commenlinaceae	Herb	Leaves
93.	*Thuja orientalis*	Morpankhi	Cupressaceae	Shrub	Leaves, Stem
94.	*Trifolium repens*	Tinpati	Fabaceae	Herb	Flower, Leaves
95.	*Tagetes erecta*	Genda	Asteraceae	Herb	Flowers
96.	*Vitex negundo*	Banaa	Verbenaceae	Shrub	Whole plant
97.	*Viola odorata*	Banafsha	Violaceae	Herb	Flowers
98.	*Withania somnifera*	Ashwagandha	Solanaceae	Shrub	Roots
99.	*Ziziphus mauritiana*	Ber	Rhamnaceae	Tree	Fruits, Leaves
100.	*Zingiber officinale*	Adrak	Zingiberaceae	Herb	Rhizome

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Aloe barbadensis *Achyranthes aspera* *Argemone mexicana*



Araucaria heterophylla *Abelmoschus esculentus* *Adhatoda vasica*

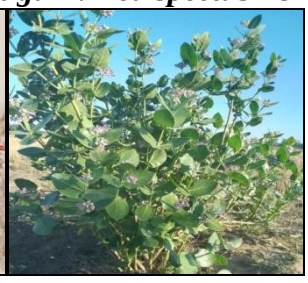


Amaranthus viridis *Ageratum conyzoids* *Bryophyllum pinnatum*



Brassica campestris *Bellis perennis* *Bougainvillea spectabilis*





Cannabis sativa *Catharanthus roseus* *Calotropis gigantea*



Cymbopogon citrates *Chenopodium album* *Curcuma longa*



Chlorophytum comosum *Coriandrum sativum* *Capsicum annuum*



Calendula officinalis *Cucumis sativus* *Callistemon viminalis*



Dodonaea viscosa *Foeniculum vulgare* *Ficus religiosa*



Ficus benghalensis *Geranium lucidum* *Hibiscus rosa – sinensis*



Helianthus annuus *Lantana camara* *Murraya koenigii*



Melia azedarach *Momordica charantia* *Mentha spicata*



Ocimum sanctum *Parthenium hysterophorus* *Rauwolfia serpentina*



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