

**STUDY OF VEGETATION IN PT. RAVISHANKAR SHUKLA
UNIVERSITY CAMPUS, RAIPUR CHHATTISGARH WITH SPECIAL
REFERENCE TO STATISTICS DEPARTMENT**

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ABSTRACT

Plants used for treatment of various diseases are of significant value throughout the world. Among the plant diversity some of them have great potential to treat many diseases which are referred as medicinal plants. The main aim of the present study is to focus on the diversity of plants for further utility and conservation. Current research is a useful account on medicinal plant in statistics department Pt. Ravishankar Shukla University, campus Raipur (Chhattisgarh). A survey on plant diversity was made during 01 June 2013 to 16 June 2013. After field survey, observed medicinal plants were listed: by botanical name, family, habit, uses and propagation with the help of available literature. Total of 56 medicinal plants species belonging to 26 families were recorded, which indicate the heterogenous floristic composition in the University campus. Maximum species diversity was recorded under the family Fabaceae. Over the recorded medicinal plants 78% plants were propagated by their seeds. Herbaceous medicinal plants showed their maximum presence in the study area.

Keywords: Diversity, Medicinal Plants, Heterogenous Floristic Composition.

India is one of the 12 “mega-diverse” countries in the world; it has a forest area of 23.81% of the country’s geographical area. In India, the life and economy of the tribal people are intimately connected with the forest (Banik 2012). Raipur is capital of Chhattisgarh state where Pt. Ravishankar Shukla University is present in western part of the city with the area of about 207 hectares. Climate of the area is tropical, wet and dry type. Medicinal plants are remarkable diverse group of plants and major components for rural peoples as traditional medicine. Man has been utilizing plants as medicinal purpose since long ago. Significant importance towards health, economic value, sustainable utility, their conservation, floral assessment and documentation is essential. India is a rich diversity center of medicinal and aromatic plants. Around 45000 plant species nearly 15000 plants are used for their specific medicinal value. Due to less side effect and rich potential, therefore herbal medicines are under highly demand in the world. Tribal peoples near of forest area majorly use the medicinal plants for various diseases. India is now in the position to export herbal medicines. Distribution pattern of medicinal plants are different depending on their

genetic make up, related environment (Soil, Temperature, water etc) and geographical situation.

Seasonal variation of plant composition and their biomass was studied by Singh (1967) and forest vegetation study carried out by Singh and Singh (1987) in Himalaya. Tewari (1982) studied vegetation of Nainital University campus. Highly demand rate of medicinal plants their cultivation, conservation and export are important segment towards medicinal plants fields. Plants are used as medicine by tribal and rural people since past. Around 80% population over the world use medicinal plants to cure different health related problems. (Kamboj, 2000). Gradual disappearances of the plants are due to many developmental process as well as environmental impacts. Diversity of the species is the most striking feature of life, which plays role in complexity and intactness of natural ecosystems (Mohammad *et al.* 2000). Biodiversity is represented by whole remarkable group of the species. For sustain utilization and conservation of medicinal plants, the documentation is needful aspect. Synthetic drugs leading increase diseases and disorders day by day.

India is one of the mega biodiversity centers over the 12 center in the world, including

47,000 plant species. Herbaceous medicinal plants showed their maximum presence in the study area. Medicinal plants utility trends have been increased due to their much efficacy, safe mode for utilization and less side effects. Various parts of the medicinal plants are used for different purpose are also a source of economic growth to local peoples (Samant *et al.* 1997). The present research is carried out in Pt. Ravishankar Shukla University Campus, Raipur (Chhattisgarh) to explore the diversity of medicinal plants. Some ethnobotanical studies were made by Ayyanar and Ignacimuthu (2005) and Balakrishnan *et al.* (2009). This paper is an attempt to documented the distribution of medicinal plants in statistics department Pt. Ravishankar Shukla University, campus Raipur (C.G.).

MATERIALS AND METHODS

The field study was carried out during 01-06-2013 to 16-06-2013 in the Pt. Ravishankar Shukla University campus, Raipur (C.G.). Methodology covers two types of survey as follows:

1. Field survey- study area, vegetational survey
2. Literature collection

Study Area

The main aim of the survey was to collect information about the wild and medicinal plant species which are used by local people and also the species are identified and documented by collecting samples of plant species. Survey were made for collection of plants their identification, followed by Botanical name, Family, Habitat, Uses and Propagation. The campus was visited for the collection of medicinal plants, their digital photographs were also taken. The identification was also done based on literature study (Hooker,1875).

Vegetational Survey

The plants are arranged in following pattern with their Botanical name, Family, Habit, Part used, Uses and Propagation (table-1). So many medicinal plants are commonly cultivated in the country.

Table 1: Survey of vegetation in statistics department Pt. Ravishankar Shukla University campus, Raipur (C. G.)

	BOTANICAL NAME	FAMILY	HABIT	PART USED	USE	PROPAGATION
	<i>Acacia nilotica L.</i>	Fabaceae	Herb	Seed	Swelling, Purgative, Permanent birth control, Analgesic, Anthelmintic, Leucoderma	Seed
	<i>Acorus calamus</i>	Araceae	Herb	Rhizome	Wormicides, Gastric, Urinary problem, Respiratory disorder, Fever, Boil.	Rhizome
	<i>Adhatoda vasica</i>	Acanthaceae	Shrub	Leaf	Eye disease, Bleeding, Diarrhoea	Stem cutting
	<i>Aegaratum conizoidis</i>	Asteraceae	Herb	Leaf	Treatment of cut and sores, Piles, Wound healing.	Seed
	<i>Aegle marmelos (L.)</i>	Myrtaceae/rutaceae	Tree	Stem, Leaf, Bark, Fruit, Flower,	Stomach tonic, Piles, Cardiotonic, Antii inflammatory, Jaundice, Urinary trouble.	Seed
	<i>Aloe barbadensis Mill.</i>	Liliaceae	Herb	Leaf	Stomach tonic, Inflammation, Burn, Purgative	Bud
	<i>Andrographis peniculata</i>	Acanthaceae	Herb	Seed	Diabetes, Jaundice, Fever, Digestion, Blood	Seed

					purification	
	<i>Annona squamosa</i>	Annonaceae	Tree	Fruits,seed Root, leaves	Constipation, Vomiting, Cough, Purgative, Leaves used to kill lice	Seed
	<i>Asparagus racemosu</i>	Liliaceae	Herb	Root	Weakness, Lactation in women, Diuretic, Tonic, Alterative,Antidiarrhoea.	Seed/ Tuber
	<i>Azadirachta indica</i>	Meliaceae	Tree	Whole plant	Skin diseases, Toothache, Antidote, Fever, Wound, Ulcer, Fever, Worms, Cough.	Seed
	<i>Baccopa monerri Linn</i>	Scrophulariac eae	Herb	Leaf	Nerve tonic, Bronchitis, Diuretic, Antidotes, Asthma	Stem cutting
	<i>Barleria prionitis Linn</i>	Acanthaceae	Herb	Leaf	Glandular swelling, Toothache, Cough, Asthma	Seeds
	<i>Basella alba Linn</i>	Chinopodiace ae	Herb	Leaf/Seed	Leaf,Seed,Insecticidal, Antiasthematic, Antitumour, kidney stone	Seed
	<i>Bauhinia variegata</i>	Fabaceae	Tree	Leaf/Seed	Diarrhoea, Skin diseases, Diabetes	Seed
	<i>Calotropis procera)</i>	Asclepiadacea e	Shrub	Leaf/Root	Ringworm, Emetic, Laxative, Joint	Seed
	<i>Canna indica Linn</i>	Zinzibaraceae	Herb	Whole plant	Diarrhoea, Diuretic, Stimulant, Ringworm	Rhizome
	<i>Capsicum annum Lin</i>	Solanaceae	Herb	Fruit	Fruit Vitamin A and C, Carminative, Stimulator	Seed
	<i>Carica papaya Linn</i>	Caricaceae	Shrub	Fruit	Fruit Burning pain, Ring worm, Wounds, Tumor & Digestion	Seed
	<i>Cassia fistula Linn</i>	Fabaceae	Tree	Seed/Bark	Antiviral, Tonic, Ringworm	Seed
	<i>Cassia tora Linn</i>	Fabaceae	Herb	Leaf/Seed	Cough, respiratory disease	Seed
	<i>Catharanthus roseus</i>	Apocynaceae	Herb	Leaf	Antidiabetic,Hypotensive . Anticancerous ,	Seed
	<i>Centella asiatica (L.)</i>	Apiaceae	Herb	Whole plant	Digestive, Laxative, Antipyretic, Leprosy, Amoebiasis, Wound healer, Alterative.	Stem cutting
	<i>Coleus forskohlii (Willd.) Briq.</i>	Lamiaceae	Herb	Leaf	Blood pressure, Asthma, Eye, Heart disease, Stomachach Hypertension	Seed
	<i>Cynodon dactylon Linn</i>	Cyperaceae	Herb	Leaf	Vomitting, Bleeding, Diuretic, diarrhea, Ophthalmia	Seed
	<i>Cyperus rotundus Linn.</i>	Cyperaceae	Herb	Root	Diarrhoea, Urinary problem, Stomachic, Diuretic	Rhizome
	<i>Dalbergia sissoo Rox</i>	Fabaceae	Tree	Leaf/Stem	Skin disease, Gonorrhoea, Dysentry, Itching,	Seed
	<i>Datura innoxia Mill.</i>	Solanaceae	Herb	Leaf/Herb		

<i>Datura stramonium</i> Linn.	Solanaceae	Herb	Seed/Stem	Arthritis, Fever, Ulcer, Skin diseases, Cough, Asthma	Seed
<i>Eclipta alba</i> Linn	Asteraceae	Herb	Leaf	Asthma, Hair shampoo, Hair tonic, Anthelmintic	Seed
<i>Emblica officinalis</i> Gaertn.	Euphorbiaceae	Tree	Fruit	Laxative, Diuretic, Carminative, Digestive, Stomachic, Jaundice	Seed
<i>Eugenia jambolina</i> Lam.	Myrtaceae	Tree	Leaf/ Fruit/ Bark	Antidibatic, Digestive, Diarrhoea, Asthama, Ringworm, Blood purifier, Anthelminitic,	Seed
<i>Euphorbia hirta</i> Linn	Euphorbiaceae	Herb	Leaf/ Root	Antiasthematic, Cough, Dysentery	Seed
<i>Ficus bengalensis</i> Linn)	Moraceae	Tree	Milky Latex	Asthma, Diabetes, for Pain	Seed
<i>Ficus religiosa</i> Linn	Moraceae	Tree	Milky Latex	Diarrhoea, Piles, Eye trouble, Mouth ulcer	Seed
<i>Hibiscus rosa</i> (sinensis)	Malvaceae	Shrub	Leaf/Flower	Alopecia, Burn	Stem cutting
<i>Jatropha curcus</i> Linn(ratanjot)	Euphorbiaceae	Shrub	Leaf/seed	Piles, Wound healing, Burn, Leucoderma.	Seed
<i>Lawsonia inermis</i> Linn	Lythraceae	Shrub	Root/Leaves /Flower	Skin diseases, Hair Tonic, Burning.	Seed
<i>Leucas aspera</i> Wild	Lamiaceae	Herb	Leaf	Insecticides, Worms, Antiseptic, Carminative	Seed
<i>Mangifera indica</i> Linn.	Anacardiaceae	Tree	Leaf/Flower/ Fruit/Bark	Burn, Antibacterial, Bronchitis, Cough, Ulcer, Skin disease	Seed
<i>Mimosa pudica</i>	Fabaceae	Herb	Whole plant	Allergy, Asthma, Ulcer, Bleeding	Seed
<i>Nerium indicum</i> F. Le	Apocynaceae	Herb	Leaf	Anthelmintic, Swelling, Skin diseases, Ulcer, Overdose is toxic	Seed/Stem cutting
<i>Ocimum sanctum</i> Linn.	Lamiaceae	Herb	Leaf/ Flower	Cold, Cough, Bronchitis, Skin disease, Ring-Seedworm, Burn, Insecticidal property	Seed
<i>Phyllanthus niruri</i> Linn	Euphorbiaceae	Herb	Whole plant	Liver disorder, Diabetes, Skin disease, Urinary problem	Seed
<i>Psidium guava</i>	Myrtaceae	Tree	Leaf/Fruit /Bark	Diarrhea,Ulsar, Vomitting, Digestion,	Seed
<i>Punica granatum</i> Linn	Punicaceae	Tree	Whole plant	Diarrhoea Laxative, Ulsar, Vomitting, Digestion	Seed
<i>Quisqualis indica</i> Linn.	Combrataceae	Climber	Leaf/Root /Bark	Stomachic, Anaemia, Urinary problem. Piles,	Stem cutting
<i>Rosa indica</i> Linn.	Rosaceae	Herb	Leaf/Flower	Laxative, Urinary problem, Carminative	Stem cutting
<i>Roulfia serpentina</i> Benth.exKurz	Apocynaceae	Herb	Root	Blood pressure, Malaria, Ulcer, Snake bite, Fever.	Seed
<i>Sida acuta</i>	Malvaceae	Herb	Leaf/Root	Body Swelling, Burn, Urinary disorder,	Seed
<i>Sida cardifolia</i>	Malvaceae	Herb	Leaf/Root	Ophthalmia, Diarrhoea, Leucorrhoea	Seed
<i>Solanum</i>	Solanaceae	Herb	Whole plant	Anti-inflammatory,	Seed

<i>xanthocarpum</i>				Stomachic, Diuretic, Asthma, Muscle pain, Antibacterial property	
<i>Tagetes erecta</i> <i>Linn.</i>	Asteraceae	Herb	Leaf/Root	Insecticidal prosperity, Muscular pain, Boil, Stomachic, Scorpion bite, Bleeding control, Wound treatment	Seed
<i>Tephrosia purpuria</i> <i>(L.)</i>	Fabaceae	Herb	Whole plant	Diarrhoea, Asthma, Ulcer, Laxative, Blood, Urinary problem, Stimulant, Intestinal	Seed
<i>Tridax procumbans</i> <i>Linn.</i>	Asteraceae	Herb	Leaf	Blood clotting, Wound treatment	Seed
<i>Zizyphus zuzuba</i>	Rutaceae	Shrub	Leaf, Fruit	Diarrhoea, Cough, Bleeding, Digestive	Seed

RESULTS

On the basis of field survey of medicinal plants, it is resulted that 55 species under 26 families

showed their presence in the campus which were collected, identified and listed as shown in Table-2.

Table -2: Family wise description of medicinal plant

Sr.No	FAMILY	TOTAL PLANT SPECIES	HERB	SHRUB	TREE	CLIMBERS
•	Acanthaceae	3	2	1	-	-
•	Asteraceae	4	4	-	-	-
•	Asclepiadaceae	1	-	1	-	-
•	Apocynaceae	3	3	-	-	-
•	Apiaceae	1	1	-	-	-
•	Annonaceae	1	-	-	1	-
•	Araceae	1	1	-	-	-
•	Caricaceae	1	-	1	-	-
•	Cyperaceae	2	2	-	-	-
•	Combrataceae	1	-	-	-	1
•	Chinopodiaceae	1	1	-	-	-
•	Euphorbiaceae	5	2	1	1	-
•	Fabaceae	7	4	-	3	-
•	Lamiaceae	3	3	-	-	-
•	Liliaceae	2	2	-	-	-
•	Lytheraceae	2	-	2	-	-
•	Malvaceae	3	2	1	-	-
•	Meliaceae	1	-	-	1	-
•	Myrtaceae	3	-	-	3	-
•	Punicaceae	1	-	-	1	-
•	Rosaceae	1	1	-	-	-
•	Rhmnaceae	1	-	1	-	-
•	Sapotaceae	1	-	-	1	-
•	Scorophulariaceae	1	1	-	-	-
•	Solanaceae	4	4	-	-	-
•	Zingiberaceae	1	1	-	-	-

DISCUSSION

The data shows that maximum medicinal plant species are family Fabaceae similar result have also reported by Tirkey (2006). Out of the 55 medicinal plant species documented in which 34 are herb, 9 are shrub, 11 are tree and only one climber. Similarly Ayyanar and Ignacimuthu (2005) also reported medicinal importance of plants in Tamilnadu. These plant species have Antibacterial, Insecticidal, Antiseptic, Analgesic properties and they are useful in treatment of various skin diseases, allergic reactions and diarrhea treatment. Similarly Thakur *et al* (1989), Jain, *et al* (2006), Kala (2009) have also reported antihelmintic, anticancerous, antitumour, antirheumatic, antiasthmatic and anti diarrhoeal activities of various plants .

CONCLUSION

In order to document the utility of various plant species and their medicinal uses of Statistics department of Pt. R.S.U. campus was done and obtained data was tabulated which shows that more than 50 plant species of different medicinal importance are present in the study area.

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