# Ethno Botanical Study of Medicinal Plants of Fingeshwar area of Gariyaband District, Chhattisgarh, India using Data Visualization

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***Abstract*— Medicinal Plants have been used by tribals and local people for cure of various diseases due to their rich capacity to treat specific disorders. They are remarkable diverse group of plants and usually used as traditional medicine by rural and tribal people. Man has been utilizing plants as medicinal purpose since long ago. Because of significant importance and for commercial value the sustainable utility and there conservation is necessary.**

**During the present investigation Fingeshwar area of Gariyaband district in Chhattisgarh was selected for medicinal studies of herbal plants. This area is also marked for rich biodiversity. For the above process 40 tribals were selected and through random interview data were collected. Medicinal plants their local name, botanical name, family name, plant parts which has the medicinal properties and its crude preparation method for using certain health disorders were recorded in their local language. Gariyaband tribals had a great similarity regarding the use of plants as a source of medicines for life style diseases like diabetes, arthritis, hypertension, respiratory problem, digestive problem, CNS disorder, skin diseases etc.**

**17 cultivated medicinal plant species were collected from Fingeshwar areas of Gariyaband district and are used by local peoples of village in their day to day life to cure various ailments have been documented along with their uses. A total of 17 plant species belonging to 17 genera and 14 families were reported for different therapeutic uses. The plants are used for medicine is enumerated alphabetically and the local name, family names, plant part used and curing diseases has documented for Gariyaband district. Fabaceae was the dominant family and Leaves were reported to be the most frequently use part of plants for the treatment of various diseases followed by other plant parts namely stem, root, seed, bark, fruit and flowers.**

***Index Terms:* medicinal plants, health disorders, local tribals, Gariyaband district, Fingeshwar area , data visualization.**

## INTRODUCTION

Ethno-botany accounts for the study of relationship between people and plants for their use as medicines, food, shelter, clothing, fuel, fodder and other household purposes (Balick, 1996). Schultes (1962) defined ethnobotany as "the study of the relationship which exists between people of primitive societies and their plant environment".

The traditional uses of some medicinal plants are handed over from generation to generation. Medicinal plants are remarkable diverse group of plants and usually used as traditional medicine by rural and tribal people. Man has been utilizing plants as medicinal purpose since long ago. Because of significant importance and for commercial value the sustainable utility and there conservation is necessary.

Medicinal Plants have been used by tribals and local people for cure of various diseases. As most of the diseases of modern society are life style disease and the use of herbal medicines can overcome such problems (Kumar 2000). Medicinal plants have huge significance in providing health care to about 80% of the population in India. Primarily the plants are the key part of folk medicines. Gradually the folk medicines led to the increase of traditional system of medicine like Ayurveda in India.

Chhattisgarh state is rich in the natural resources of herb and medicinal plants, which traditionally being used to treat various diseases. Hence it is essential to conserve, protect and document the important plant species. During the present investigation Fingeshwar

area of Gariyaband district in Chhattisgarh was selected for medicinal studies of herbal plants.

## MATERIALS AND METHOD

The plants were collected from Fingeshwar areas of Gariyaband district of Chhattisgarh. Geographically Gariyaband located at 20.2571° N, Latitude and 82.3018° E longitude. It is situated in the south eastern part of the Chhattisgarh. The detailed information pertaining their botanical names, local names, family name, and plant parts which has medicinal properties. All information regarding the uses of plants for treating various ailments and diseases was collected by directly interviewing elderly learned and experienced person of rural people of the villages. Several visits also have done with these resource persons who helped us to identify the plants with their local/tribal names and their medicinal uses. All plants and their uses were confirmed through many resource people as far as possible in other localities of the state. During the investigation the all information about plant parts used and mode of administration, etc were recorded. The identification of plants was also done using the references of Flora of British India by Hooker (1875) and Herbaceous flora of Dehradun by C.R. Babu (1977).

## RESULT AND DISCUSSION

17 cultivated medicinal plant species were collected from Fingeshwar areas of Gariyaband district and are used by local peoples of village in their day to day life to cure various ailments have been documented along with their uses, mentioned in for going table.1 A total of 17 plant species belonging to 17 genera and 14 families were reported for different therapeutic uses. The plants are used for medicine is enumerated alphabetically and the local name, family names, plant part used and curing diseases has documented for Gariyaband district as follows:

Table No.-1: List of Ethno medicinal plant species used in the treatment of various ailments in Fingeshwar area of Gariyaband district.

| SN | Botanical Name | Common Name | Family | Plant Parts Used | Disease cured |
|---|---|---|---|---|---|
| 1 | *Acacia nilotica* | Babul | Fabaceae | Leaves, stem, bark | Stomach problems, liver tonic, hair fall, fever, gonorrhoea, diarrhoea, diabetes, eye-watering, dysentery, excessive bleeding, blood clotting and leucorrhoea. |
| 2 | *Amorphophallus paeoniifolius* | Jimikand | Araceae | Corm | Rheumatism Piles, dysentery, haemorrhoids, Alzheimer's, skin disease, asthma, cough, skin disease, constipation, inflammation, arthritis, heart disease, liver disease |
| 3 | *Artabotrys hexapetalus* | Hari champa | Annonaceae | Fruit, bark | Fever, diarrhoea, dysentery, sprain, inflammation, gout, leprosy, skin disease, wounds, tumours, cough, asthma, bronchitis, constipation |
| 4 | *Asparagus racemosus* | Satavari | Asparagaceae | Root, stem, leaves | Gastric ulcers and indigestion, reproductive problem, cough, diarrhoea, diuretic. |
| 5 | *Butea monosperma* | Palash | Fabaceae | Seed, flower, root, fruits | Dysentery, diarrhoea, skin ulcers, cataract, relieves boils, pimples, skin ulcers, swelling and bleeding piles |
| 6 | *Carissa caranda* | Karonda | Apocynaceae | Fruit leaves, root | Fevers, earache and syphilitic pain, diabetic ulcer, urine disorder, skin disease, anaemia, stomach pain, wound |
| 7 | *Cassia tora* | Charota | Caesalpiniaceae | Leaves seeds, stem | Leprosy, ringworm, flatulence, colic, dyspepsia, constipation, cough, bronchitis, cardiac disorders. Snake bite, Allergy, Joint Problem |
| 8 | *Delonix regia* | Gulmohar | Fabaceae | Flower | Diabetes, pyrexia, diarrhoea, bacterial infection, diabetes, hepatic disease, arthritis, hemiplegic condition, constipation. |
| 9 | *Ipomoea batatas* | Shakarkand | Convolvulaceae | Root, leaves | Cancer, atherosclerosis, asthma, constipation, fever, dyslexia, diarrhoea, diabetes, toothache, melanoma, wound, nausea. |
| 10 | *Lawsonia* | Heena | Lythraceae | Seed, leaves | Wound, burn, eczema, bacterial infections, |

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|---|---|---|---|---|---|
| | *inermis* | | | | jaundice, dandruff, enlarged spleen, stomach ulcer. |
| 11 | *Lantana camara* | Lantana | Verbenaceae | Leaves | Cancer, skin itches, leprosy, rabies, chicken pox, measles, asthma and ulcers. |
| 12 | *Madhuca longifolia* | Mahua | Sapotaceae | Seeds, flowers, fruit, leaves | Acute and chronic tonsillitis, pharyngitis, bronchitis, rheumatism, gout, heart disease, eye disease. |
| 13 | *Mimosa pudica* | Chuimui | Fabaceae | Leaves, stem, root | Urinogenital disorders, piles, dysentery, sinus, and also applied on wounds. |
| 14 | *Phyllanthus emblica* | Amla | Phyllanthaceae | Whole plant | Diabetes, respiratory disorder, diarrhoea, heart diseases, and dental disease, haemorrhage, leucorrhoea. |
| 15 | *Shorea robusta* | Sal | Dipterocarpaceae | Leaves, Seed, bark, fruit | Excessive salivation, epilepsy, and chlorosis, ulcers, leprosy, cough, earache, headache, diarrhoea, dysentery, vaginal discharge. |
| 16 | *Solanum virginianum* | Bhaskatiya | Solanaceae | Root, fruit | Cough asthma and chest pain, whitlow (finger abscess), miscarriage, piles, urine infection, digestive problem, ear problem. |
| 17 | *Tinospora cordifolia* | Giloy | Menispermaceae | Whole plant | Heart disease, Infertility, Liver disease, urinary tract infections |

Fabaceae was the dominant family with 4 species followed by phyllanthaceae, caesalpiniaceae, menispermaceae, annonaceae, araceae, apocynaceae, verbenaceae, lythraceae, asparagaceae, dipterocarpaceae, convolvulaceae, solanaceae and sapotaceae. Leaves were reported to be the most frequently use part of plants for the treatment of various diseases followed by other plant parts namely stem, root, seed, bark, fruit and flowers.

Although a review of literature reveals that considerable research work has been done on ethno-medicinal plants in India (Alagesaboopathi, 2013; Murthy 2012; Kumar et al., 2010; Samar et al., 2012; Jain and Vairale 2007; Jain et al., 2006; Mishra, 2011; Shukla et.al., 2010), many significant information and native knowledge base have already been lost as information hold with older generation could not be transmitted to younger generations and remains unrecorded and still there are some core areas which need to be surveyed intensively like Gariyaband district for probing new traditional medicines.

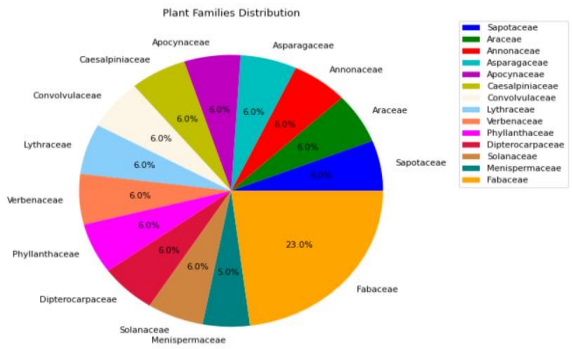



Fig:1- Pie Diagram Showing Distribution of Plant Families

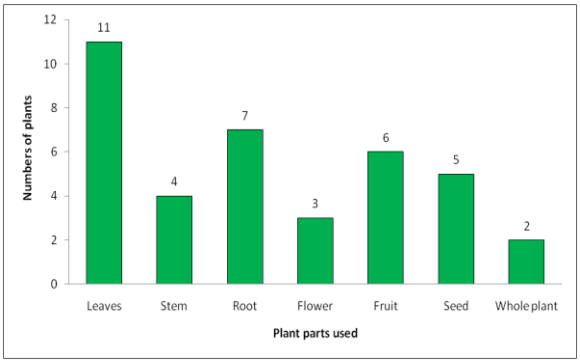
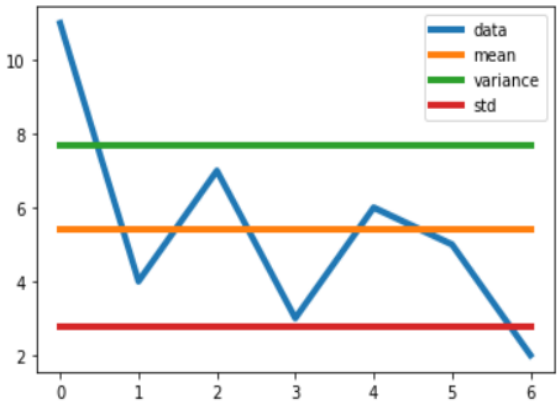



Fig:2- Distribution of Plant Parts Are Used

Mean: 5.428571428571429
Variance: 7.673469387755101
Standard Deviation: 2.7701027756664733




Graph:1-Graph plotted between Mean, Variance and Standard Deviation


Figures of Ethno medicinal plant species used in the treatment of different diseases in Gariyaband district:

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REFERENCES

[1] Alagesaboopathi, C. (2013). Ethnomedicinal plants used for the treatment of snake bites by Malayalitribals and rural people in salem districts, Tamilnadu, India. Int. J. Biosci., 3(2): 42 53.

[2] Babu, C.R. (1977). Herbaceous Flora of Dehradoon, Publication and Information Directorate, CSIR Hillside road, New Delhi.

[3] Balick, M.J. (1996). Transforming ethnobotany for the new millennium. Ann. Mo Bot Gard, 83: 58 66.

[4] Hooker, J.D. (1875). Flora of British India, London and Becelers: William clowers and sons Ltd.

[5] Jain, A.K., Vairale, M.G. (2007). Some threatened angiospermic taxa of Chambal Eco-region. Phytotaxonomy, 07: 107 110.

[6] Jain, J.B., Kumane, S.C., Bhattacharya, S. (2006). Medicinal flora of Madhya Pradesh and Chattisgarh A review. Indian J. Trad. Knowl., 5(2): 237 242.

[7] Kumar, V., Sachan, P., Nigam, G., Singh, P.K. (2010). Some ethno-medicinal plant of Chitrakoot district (U.P.). Biozone Int. J. Life Sci., 2(1 2): 270 283.

[8] Mishra M. (2011). Wild harvesting and management of some medicinal plants in the natural forest of central India, Ind. Jour. of fund and Appl. Life Science 1(2), pp. 90-97.

[9] Murthy, E.N. (2012). Ethno medicinal plants used by Gonds of Adilabad district, Andhra Pradesh, India. Int. J. Pharm. Life Sci., 3(10): 2034 2043.

[10] Schultes, R.E. (1962). The role of ethanobotanist in search for new medicinal plants.Lloydia 25 (4): 257-266.

[11] Shukla, A.N.,Shrivastava,S. Rawat, A.K.S.(2010). An ethnobotanical survey of medicinal plants of Rewa district, Madhya

Pradesh, Indian Journal of Traditional Knowledge.Vol.9 (1):Jan., pp.191-202.

Biography

Dr. Prerna soni is an Assistant Professor in Department of Biotechnology at Seth Phoolchand Agrawal Smriti Post-graduate College, Nawapara-Rajim, Raipur, Chhattisgarh, India. She have 17 years teaching experience including other academic institution such as Govt. Science College and Vipra College of Bilaspur, Chhattisgarh, India. She received her Ph.D. (Life Science) from Guru Ghasidas Central University, Bilaspur, Chhattisgarh, India in 2013. She received her M. Phil. (Biotechnology) from Vinayka Mission University Tamilnadu, India. She has published three chapters in the studies on medicinal plants. She has published 14 research articles in leading journals. She holds two awards such as "Kaumi Ekta Award" and "Shikshak Ratna Samta" Award. She is the member of the Board of the Studies and Indian Botanical Society Association. She has presented 21 research papers in different national and international conferences and seminars, She has also organized one national conference in area of impact of emerging science and technology in society. Her research interests include plant tissue culture, secondary metabolites, antimicrobial activity of medicinal plants, immunological techniques and instrumentation.

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