

TO STUDY THE CHEMICAL COMPOSITION AND CLINICAL PROPERTY OF SOME MEDICINAL PLANTS FOUND IN CHHATTISGARH

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ABSTRACT

Chhattisgarh is 26th State of India, richer with forest and tribal community, and also called an herbal state. The tribal Community of Chhattisgarh has very rich knowledge of medicinal plant for their health. Many plants are used by them for various diseases. The aim of the present study is to find out the chemical composition of different types of plants used by the tribals of this area. For this 45 plant used by tribal people as medicine were selected to analyze their chemical composition.

KEYWORDS: Parts of Medicinal plant, Chemical Composition, Disease

Medicinal plants and their utilization is increasing day by day. High demand of medicinal plants, their cultivation, conservation and export are important (Roopshikha Agrawal *et al.* 2014). Medicinal plant naturally synthesizes and accumulate some secondary metabolite like alkaloids, sterols, terpenes, flavonoids, saponins, glycosides, cyanogenics, tannins, resin, lactones, quinines, volatile oil etc. (Mohammed *et al.* 2011) According to the WHO over 80% of the world's population relies on traditional forms of medicine largely plant based to meet primary health care needs. In India the collection and processing of medicinal plants and plant products contributes a major part each year to the national economy, as a source of both full and part time employment (Mohd. Mazid *et al.* 2012). The medicinal plants are extensively utilized throughout the world in two distinct areas of health management; traditional system of medicine and modern system of medicine. The traditional system of medicine mainly functions through two distinct streams (Holley J *et al.* 1998) Local or folk or tribal stream and, (9) Codified and organized Indian system of medicines like Ayurveda Siddha and Unani etc.

India is a rich diversity center of Medicinal and Aromatic plants. Around 45,000 plant species are







early 15000 plants are used for their specific medicinal value. Due to less side effect and rich potential herbal medicines are under highly demand in the world. (D.K Patel, 2012). Ayurveda, the traditional Indian health care system is the oldest system of medicine based on the use of herbal techniques for cure of diseases is originated in India during pre Vedic period. (P. Scartezzini *et al.* 2000). In India, many indigenous plants are used in herbal medicine to cure diseases and heal injuries. Some important chemical substances found in plants are alkaloids, carbon compounds, hydrogen, nitrogen, glycosides, essential oils, fatty oils, resins, mucilage, tannin, gums and others (Pandey *et al.* 1980.)







Chhattisgarh, located in Central India, has been carved out of Madhya Pradesh to become the 26th state of the Indian Union. At 55,674 sq km, which is **41.18 percent** of its geographical area, Chhattisgarh has the third largest area under forest cover after Madhya Pradesh and Arunachal Pradesh. In other words, **12 percent** of India's forests are in Chhattisgarh.

MATERIALS AND METHODS

Table 1: Name and Chemical Contents of Some Important Plant








S.n	Image	Name of Plants	Parts	Chemical Content	Medicinal Uses
1		Common Name- Ginger (Herb) Botanical Name- <i>Zingiber officinale</i> Family - Zingiberaceae	Root	Zingerone, Shogaols And Gingerols, Volatile Oils, Thiamine (B1), Niacin (B3), Pantothenic Acid (B5), Vitamin B6, Folate (B9), Vitamin C	Sickness, Nausea , Loss Of Appetite, Chills, Cold, Flu, Poor Circulation, Menstrual Cramps, Dyspepsia, Indigestion And Gastrointestinal Problems .
2		Common name- Garlic (Herb) Botanical name- <i>Allium sativum</i> Family- Amaryllidaceae	Bulb	Carbohydrates, Reducing Sugars, Lipids, Flavonoids, Ketones, Alkaloids, Steroids And Triterpenes.	Reducing Inflammation, Reducing High Blood Pressure, High Cholesterol, Boosting Immune Function, Toxic to at least 14 Kinds of Cancer Cells
3		Common Name- Amla (Tree) Botanical name- <i>Emblica officinalis</i> Family- Euphorbiaceae	Fruit	Vitamin-C, Mineral, Amino acid, alkaloids, glycosides resins, sterols, starch, tannins, phenolics.	Vitamin - C, Cough , Diabetes, Cold, Laxativ, Hyper Acidity, Skin Diseases, To Improve Immunity.
4		Common Name- Ashok (Tree) Botanical name - <i>Saraca asoca</i> family - Fabaceae	Bark Flower	<i>Phytosterol, Carbohydrate</i> <i>Flavanoid, Phenolic compound and Tannin, Glycosides.</i>	Menstrual Pain, Uterine Disorder, Deiabetes.
5		Common Nams- Aswagandha (Herb) Botanical name- <i>Withania Somnifera</i> Family- Solanaceae	Root, Leafs	Phenolic compounds, Flavonoids, Carbohydrate, Tannin, Terpenoid.	Restorative Tonic, Stress, Nerves Disorder ,Diabetes, Protect From Stomach And Intestinal Ulcer.
6		Common Name- Bale, golden apple, wood apple, (Tree) Botanical name- <i>Aegle marmelos</i> Family- Rutaceae	Fruit, Bark	Alkaloids, Coumarins , Polysaccharides, seed oil, Tannin, Carotenoids.	Diarrhoea, Dysentery, Constipation, Gastro intestinal diseases, piles, jaundice, vomiting, obesity, pediatric disorders, gynecological disorders, urinary complaints and as a rejuvenative.








7		Common Name- Tulsi(perennial) Botanical name- <i>Ocimum Sanctum</i> Family- Lamiaceae	Leaf, Seed	Seeds contain an oil composed of fatty acids like ursolic acid, campesterol, cholesterol, stigmasterol, methyl esters. leaves contain a bright yellow volatile oil.	Headache ,Cough, Cold, Bronchitis, Strong Anti-Oxidant and Anti-Carcinogenic, To Help Stop The Progression of Breast Cancer And Oral Cancer (Caused Due To Chewing Tobacco).
8		Common Name- Neem(Tree) Botanical name- <i>Azadirachta indica</i> Family- Meliaceae	Leaf, Bark, Flower, Fruit, Gum, Seed, Oil.	Alkaloids,Carbohydrats, Reducing Sugars, Tannins, Terpenoid.	Leaf is used to cure Intestinal worm , eye problem, skin ulcer. Bark is used to cure Alternative fever. Gum to cure Wounds ,skin disease, ulcer.Oil-leprosy and intestinal worm.
9		Common Name- Peppermint (Herb) Botanical name- <i>Mentha piperita</i> Family- Lamiaceae	Leaf ,oil	Alkaloids,Saponins, Flavonoids,Carbohydrates , Fixed Oil and Fats, Tannins and Phenolic Compounds, Protein and Amino Acid.	Folk medicine and Aromatherapy. common cold, cough, Inflammation of the mouth and throat, sinus infections, and respiratory infections.
10		Common Name- Aloe Vera (Herb) Botanical name- <i>Aloe Vera.</i> Family- Aloaceae	Leaf, flower	VitaminB1.B2.B3.B12,C, Mineral, Trace Elements- Calcium,Chlorine,Copper, Zink, Magnesium, Tannin.	Acid present inside Aloe Vera is used as an effective pain killer.Used as antiseptic.prevents from growth of acnes .Used for treatment of dandruff, falling hair,
11		Common Name- Dalchini (Perenial Shrub) Botanical name- <i>Cinnamomum Zeylanicum</i> Family- Lauraceae	Bark ,Oil	Vitamin C ,Niacin, Thiamin, Acid-Ascorbic Acid,Palmitic Acid, Boron,Calcium, Carbohydrate,Protein,Steroid,Alkaloid,Saponin,Star ch,	Bronchitis, Asthma, Cardiac Disorder, Fever.
12		Common Name- Sada Bahar (Herb) Botanical name- <i>Catharanthus roseus</i> Family- Apocynaceae	Whole Plant	Alkaloids,Carbohydrate,P henol,Tannin,Flavonoid,P rotein,Saponins,Glycoside s,Steroids	Leaves and stems are a source of alkaloids that have anti tumor and anti cancer properties. It relieves muscle pain and depression ,controls nosebleeds, bleeding gums, mouth ulcers and sore throats, leukemia.

13		Common Name- Sarpa Gandha (Herb) Botanical name- <i>Rauwolfia serpentina</i> Family- Apocynaceae	Root, leaf	Alkaloids, Phenols,Tannin, Flavonoid.	Hypertension, Used as Antidote specially for Snake Bite.
14		Common Name- Brahmi (Herb) Botanical name- <i>Bacopa monnieri</i> Family- Plantaginaceae	Whole Plant	Tannins, Saponin, Phytosterol, Terpenoids, Steroids, Phytosterol, Glycosides, Flavonoid.	For The Treatment of Epilepsy, Insomnia, Asthma and Rheumatism.
15		Common Name- Bhumi Amla (Herb) Botanical name- <i>Phyllanthus amarus</i> Family- Euphorbiaceae	Whole Plant	Alkaloids Saponins Glycosides,Tannins, Steroids, Flavonoids And Carbohydrates, Mineral Elements	Anaemia, jaundice, Dropsy.
16		Common Name- Chiraita (Herb) Botanical name <i>Swertia Chiraita</i> Family- Gentianaceae	Whole Plant	Alkaloids and flavonoid, swerchirin , xanthones, glycosides.	Skin Disease, Burning, Fever.
17		Common Name- Gudmar / Madhunasini (Climber) Botanical name- <i>Gymnema Sylvestre</i> Family- Asclepiadaceae	Leaves	Triterpene Saponin, Gymnemic Acids, Alkaloids, Flavones, Anthraquinones, Hentriacontane, Pentatriacontane, α And β -Chlorophylls, Phytin, Resins, D-Quercitol, Tartaric Acid.	Diabetes, hydrocil, Asthama.
18		Common Name- Guluchi / gelay, amrita (Climber) Botanical name- <i>Tinospora Cordifolia</i> Family- Menispermaceae	Stem	Polyphenols, and Polysaccharides,Alkaloid, charbohydrate,glycoside, saponin,Resin,phenol,Tan nin, Flavanoids.	Diabetes, Fever, Piles, Jaundice.

19		Common Name- Guggul (Tree) Botanical name- <i>Commiphora</i> <i>Wightii</i> Family- Bursaceae	Gum , rasine	Gum contains minerals, resin, volatile oils, sterols, ferulates, flavones, sterones.	Arthritis, paralysis, laxative cancer, obesity, anaemia,
20		Common Name- kalihari / flame lily, climbing lily, creeping lily, glory lily Botanical name- <i>Gloriosa superba</i> Family- Colchicaceae	Seed, Tuber, Leaf, Rhizo-me.	Rhizomes& Seeds Contain Colchicine, Isoperlolyrine And Related Tropolane Alkaloids. Air Dried Rhizomes Contain B- Sitosterol And Its Glucoside, 2-Hydroxy 6- Methoxy Benzoic Acid	Skin Disease, Labour pain, General debility.gout, infertility, snakebite, ulcers, arthritis, cholera, kidney problems, typhus,itching, leprosy,bruises, sprains, hemorrhoids, cancer, impotence, nocturnal emission,
21		Common Name- Long peeper / Pippali (Climber) Botanical name- <i>Peeper longum</i> Family- Piperaceae	Fruit, Root, oil	alkaloids piperine, piperlongumine, piperlonguminine and also methyl-3, 4,5 -trimehoxycinnamate.	Appetizer, enlarged spleen , Bronchities, Cold, antidote. headache, toothache, vitamin B1 deficiency (beriberi), coma, epilepsy, fever, stroke.
22		Common Name- Kalmegh/ Bhui neem (H) Botanical name- <i>Andrographis</i> <i>paniculata</i> Family- Acanthaceae	Whole Plant	Phenol,Flavonoids,Saponi n,Alkaloids,Glycosides, Tannins	Fever, weekness, release of gas.
23		Common Name- Makoi ,akamachi (Herb) Botanical name- <i>Solanum nigrum</i> Family- Solanaceae	whole plant	Polyphenols, Alkaloid, Steroid Alkaloid, Steroidal Saponins And Glycoprotein,	Dropsy,dysentery, stomach complaints and fever , asthma, antitumorigenic, antioxidant,anti- inflammatory.
24		Common Name- Bhringaraj. (Herb) Botanical name- <i>Eclipta alba</i> Family- Asteraceae	Seed/ whole plant	Alkaloid, Flavonoids, Glycosides, Polyacetylenes, Triterpenoids. Leaves Contain Stigmaterol, A- Terthienylmethanol, Wedelolactone, Demethylwedelolactone	Hair Care , Anti- Inflammatory, Digestive, Hairtonic. Anticancer, Antileprotic, Analgesic, Antioxidant, Antimyotoxic, Antihemorrhagic.

25		Common Name- Pashan Bhedi / Patharchur(Herb) Botanical name- <i>Coleus barbatus</i> Family- Lamiaceae	Root, leaves	alkaloids,saponins, tannins,flavonoids, terpenoids, coumarins, quinines, cardiacglycosides, Xanthoproteins.	Kidny stone, Leaves are used for intestinal disorders, hypertension, glaucoma, asthma, congestive heart failures, weight management and certain types of cancers.
26		Common Name- Santal Wood (Tree) Botanical name- <i>Santalum album</i> Family- Santalaceae	wood , oil	Oil Constitutes Of A-and B Santalols, Flavonoids Present In Leaves ,	Skin disorder, Burning, sensation, Jaundice, Cough.
27		Common Name- Satavari (Climber) Botanical name- <i>Asparagus racemosus</i> Family- Liliaceae	Tuber, root	Alkaloids, Essential Oils, Asparagine, Arginine, Tyrosine, Flavonoids (Kaempferol, Quercetin, and Rutin), Resin, and Tannin.	Enhance lactation, general weekness, fatigue, cough.
28		Common Name- Henna/Mehdi(Shru b) Botanical name- <i>Lawsonia inermis</i> Family- Lythraceae	Leaf, Flower, Seed	Alkaloids,Phenols, Tannins And Flavonoids, Quinines.	Burning, Steam, Anti Inflammatory anticancer, antiviral, wound healing, properties,
29		Common Name- Senna (Shrub) Botanical name- <i>Cassia augustifolia</i> Family- Fabaceae	Dry Tubers	Flavonoid,Resin,Tannin, Malic Acid,Tartaric Acid. Anthraquinone glycosides,	Constipation, irritable bowel syndrome (IBS), malaria, skin diseases, jaundice and anemia.
30		Common Name- Vai Vidanga (Climber) Botanical name- <i>Embelia Ribes</i> Family- Myrsinaceae	Root, Fruit, Leaves	Alkaloids, Vasicine(27)	Skin disease, Snake Bite, indigestion, constipation, paralysis, wound infection.
31		Common Name- chitrak (Herb) Botanical name- <i>Plumbago Zeylanica</i> Family- Plumbaginaceae	Root, bark	naphthaquinones ,Alkaloids, Glycosides, Steroids, Triterpenoids, Tannins, Phenolic Compounds, Flavanoids, Saponins, Coumarins.	Appetiser, Antibacterial, Aticacer.

32		Common Name- Rakta Chitrak (Herb) Botanical name- <i>Plumbago Indica</i> Family- Plumbaginaceae	Root, bark	Reducing Sugars, Alkaloids, Steroids, Flavonoids And Gums ,terpenoids, tannin.	Skin diseases, infections,Intestinal worms viz. Leprosy, scabies,ringworm, Hookworm, dermatitis, acne, sores and ulcers.
33		Common Name- Kantakari (Herb) Botanical name- <i>Solanum</i> <i>Xanthocarpum</i> Family:- Solanaceae	Whole Plant, Fruit, Seed	Alkaloid,Sterols,Saponins , Flavonoid,Carbohydrate, Fatty Acid,Amino Acid.	Diuretic, Antiinflammatory, Appetiser, Stomachic,sore throat,cough, arthritis.
34		Common Name- Kurari (Shrub) Botanical name- <i>Holarrhena</i> <i>antidysenterica</i> Family- Apocynaceae	Bark, seed	Alkaloids, Tannins, Terpenes, Flavonoids, Sterols.	Scabies, Antipyretic, Amoibic dysentery.
35		Common Name- Kiwanch or Konch Botanical name- <i>Mucuna pruriens</i> Family- Fabaceae	Root, Seed, Leaf	Alkaloids, saponins, and sterols, protein, carbohydrates, lipids, fiber, and minerals.	Nervous Disorder, Constipation, fevers ,Dropsy.
36		Common Name- Mandookaparni (Herb) Botanical name- <i>Centella asiatica</i> Family- Apiaceae	Whole plant	Alkaloids, Glycosides, Steroids, Flavonoids, Tannins and Reducing Sugars.	Antiinflammatory, Jundice, Diuretic, Diarrhoea,Used for the treatment of mental illness,insomnia,apilepsy.
37		Common Name- Khus/khus, Benachar (Shrub) Botanical name- <i>Vetiveria</i> <i>Zizanioides</i> Family- Poaceae	Root	Flavonoids, Alkaloids, Terpenoids, Saponins, Tannins And Phenols	Hyperdisia, Burning, ulcer, Skin disease , Vomiting. Anemeia, relieving stress, anxiety, nervous tension and insomnia.
38		Common Names- Nageswar / Nag Champa (Tree) Botanical name- <i>Mesua Ferrea</i> Family- Guttiferae	Bark, Leaf, Flower	Oil Contain-Oleic Acid, Linoleic Acid, Stearic Acid And Palmitic Acid,Seeds Contained Lipid,Moisture.	Asthma, Skin, Burning, Vomiting, Dysentery, Piles.

39		Common Name- Vasa, Arusha (Shrub) Botanical name- <i>Adhatoda vesica</i> Family- <i>Acanthaceae</i>	Whole Plant	alkaloids, tannins, saponins, phenolics and flavonoids.	Asthma, Bronchitis and other chronic coughs., fever.
40		Common Name- Sweet Flag (Herb) Botanical name- <i>Acorus calamus</i> Family : Acoraceae	Rhizome, leaves, stems, and roots	glycosides, flavonoids, saponins, tannins, polyphenolic compounds, mucilage, volatile oil and bitter principle.	Sedative, Analgesic, Tpilepsy, Hypertensive, Antimicrobial and Insecticidal activities, gastrointestinal (GI) problems
41		Common Name- sarsaparilla (Shrub) Botanical name- <i>Hemidesmus indicus</i> Family- Apocynaceae	Root/ Leaf	Alkaloids, glycosides, Carbohydrates, steroids, polyphenol, saponins and Terpenoids.	Blood Diseases, Diarrhea, Skin diseases, Respiratory Diseases, Fever, Bronchitis, Eye Diseases, Burning Sensation, Rheumatism
42		Common Name- Gokhur (Herb) Botanical name- <i>Tribulus terrestris</i> Family : Zygophyllaceae	Whole Plant	Alkaloid, steroidal saponins, (dioscin, diosgenin, protodioscin), Phytosterols (β sterol)	Sweet cooling, Aphrodisiac, appetizer, Digestive, protection from cardiovascular disease, reduce blood pressure, cholesterol.
43		Common Name- Bahada (Tree) Botanical name- <i>Terminalia bellerica</i> Family: <i>Combretaceae</i>	Seed, Bark, fruit	Phenolics compound, Alkaloids, Flavonoids, Tannins. Phenols, Amines Carboxylic acid.	Cough, Insomnia, Dropsy, Vomiting, Ulcer, Control High Cholesterol, Digestive Disorders,
44		Common Name- Harida (Tree) Botanical name- <i>Terminalia chebula</i> Family : Combretaceae	Fruit Seed, bark	Glycosides including the triterpenes arjunglucoside I, arjungenin, chebulosides, Bark-coumarin conjugated with gallic acids called chebulin.	Wound ulcer, Leprosy, Inflammation, Cough .
45		Common Name- Kochila, nux vomica, poison nut, Botanical name- <i>Strychnos nuxvomica</i> Family: <i>Loganiaceae</i>	Seed	Alkaloids, Triterpenes, Oils, Fats, Phenol, Tannins And Flavonoids.	Nervous Paralysis, Healing wound & for control diabetes.

There were more than 1000 plant used as the medicine ,but for the recent study we had selected only 45 plant for study .data were collected from survey of different tribal area of Chhattisgarh. On the basis of survey 45 species were identified & listed which was showed different habitat (Tree/Shrub/Herb). Data contained specimen, local name, botanical name, chemical composition and uses.

RESULTS AND DISCUSSION

On the Basis of Present study 45 species of Medicinal Plant have been identified & listed according to their chemical nature and medicinal uses. The plants are arranged by their Botanical name ,family, chemical constituent and uses in Table 1.This study is helpful to understand the medicinal plant and their uses to cure various disease .Medicinal plant is used directly by people not only in India but also in world even actually many modern medicine is also produced indirectly by medicinal plant. We have to develop knowledge & uses of medicinal plant which is cheap, readily available and with no side effect.

CONCLUSION

Chhattisgarh is Herbal State. Despite urbanization Medicinal Plant still plays an important role in local population. Utility of medicinal plant by people is continuously increasing. Considering previous & current studies it is concluded that medicinal plant helps us to cure various diseases and it is urgent need to promote cultivation & uses of this plants for future.

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