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RESEARCH ARTICLE

**ETHNOBOTANICAL SURVEY OF BALRAMPUR DISTRICT WITH SPECIAL
REFERENCE TO PLANTS USED BY KORAKU TRIBES**

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ABSTRACT

An Ethnobotanical survey was conducted in 5 villages of the Balrampur district of Chhattisgarh, India, during the year 2014. Along with field study, personal interview was held with 15 people in each village 10 men and 5 women. Plant specimens were collected thrice namely monsoon, winter and summer. Following taxonomic procedure the specimens were duly pressed processed. Among the specimens collected 50 plant species belonging to 37 families were much used by Korakutribe for various ailments. The method of drug preparation, drug administration were also recorded during the survey and interview. The results of the study revealed that Korakutribes have rich knowledge of medicinal plants and continue the use of plants for various ailments.

INTRODUCTION

Traditional medicine still remains the main resource for majority (80%) of people in developing countries for treating health problems, particularly because medicinal plants are accessible and cost affordable (Nyamanga *et al.*, 2008; Motlhanka *et al.*, 2006). Ethnobotany is essentially concerned with gathering information on plants and their use (Rao *et al.*, 1997). Ethnomedicinal survey is one of the reliable sources to natural and synthetic drug discovery (Fabricant, and Farnsworth, 2001). The present study forms the first of its kind with reference to Koraku Tribe of Balrampur district after Ambikapur (Surguja) division. (Swati Shrivastava *et al.*, 2013; AmiaEkka *et al.*, 2013) have also done similar studies. The knowledge on medicinal plant usage is very often passed on from one generation to the next only verbally (Nadembega *et al.*, 2011) and most of this knowledge remains undocumented (Sofowora 1993; Asase *et al.*, 2010). Moreover due to deforestation, environmental degradation, migrations of traditional medicinal healers to other occupations cause rapid erosion of this rich knowledge. Over the past decade, there has been a resurgence of interest in the investigation of natural materials as a source of potential drug substance. Therefore, with a deep concern and reverence for the vast plant diversity

that our country enjoys, and with sense of realization about the invaluable therapeutic properties of this phytodiversity, the current survey has been undertaken (ThamacinArulappan and John Britto, 2014). This work concentrates on traditional knowledge of medicinal plants along with their therapeutic uses by KorakuTribals of Balrampur district.

Study Area

Balrampur district which was earlier a part of Ambikapur (Surguja) division, came into existence in 1st January 2012. It has Latitude of 23060'67"N and Longitude of 83062'03"E, and has a total area of 3806.08Sq.Kms (Approx.) with 6 Block divisions, comprising of 645 villages of which 642 are much populated. According to census 2001 total population of the district was 5, 98,855 of which Male 2, 94,488 and Female 3, 04,367 and Sex Ratio 1000: 970. Density of the population is 157 per Sq. Km. Average Literacy rate 54.24%, Male Literacy rate 67.27% and Female Literacy rate 51.79% (2001 census). The climate of Balrampur is of extreme nature. It is very hot in the summer and biting cold in the winter.

MATERIALS AND METHODS

Survey: It is a prerequisite to have a standard methodology to study and collect the ethnomedicinal data from the informants (Jain and Rao, 1976).

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A standard questionnaire (Form 1) was used to obtain information on medicinal plants with their local names, parts used, mode of preparation and mode of administration. Since these Korakutribals are illiterate, a structural questionnaire approach was not possible to get the relevant data, hence an informal conversation was adopted. All the informants were selected based on their knowledge of medicinal plants and practices of herbal medicine either for self-medication or for treating others.

A total number of 75 informants were interviewed comprising of 55 men and 20 women. The field survey was conducted in five villages namely Kosompara, Bansipara, Belpara, Lalmati and Turrapara of Balrampur District for 60 days. From tribal, herbal practitioners and farmers. Most of the herbs were collected directly from the forest, agricultural fields, foothills, upper hills and river belts. Sufficient care was taken not to destroy the habitats of these medicinal plants. Documentations of the medicinal plants were carefully recorded along with photographs of such plants. Direct plant observations were done with the help of local healers. Information on medicinal plants, local names, plant parts used and mode of administration for curing diseases were also recorded.

Views of the People

The information collected during the field survey is based on the first-hand information given by the local inhabitants on

medicinal plants; their utilization and mode of administration of medicinal plant species for specific diseases. The information about the ethno medicinal plants and their local names, parts of plant used for preparation of drug and administration have been accurately documented. The information gathered from them was again cross checked with the other residents of same community.

Categorization of Medicinal Plants

Ethno botanical plants which are cultivated, as well as grown in the wild were classified into different types of habits and forms such as trees, herbs, shrubs, climbers and creeper.

Identification of Medicinal Plants

The medicinal plant species mentioned by the informants were taxonomically identified in The Rapinat Herbarium & Centre for Molecular Systematics, St. Joseph's College (Autonomous) Tiruchirappalli under the guidance of Dr. S. John Britto.

Form 1: Traditional Ethnomedicine Survey project, Rapinat Herbarium & Centre for Molecular Systematics, St. Joseph's College (Autonomous) Tiruchirappalli, India (Thamacin Arulappan and S. John Britto, 2014).

(One form should be completed for each plant)

1. Name: -----
 2. Sex: -----
 3. Age: -----
 4. Address: -----
 5. Occupation: -----
 6. Date: -----
 7. Collection No. : -----
 8. Taxon: -----
 9. Vernacular Name: -----
 10. Botanical Name: -----
 11. Family: -----
 12. Locality (Specific): -----
 13. Habit: Tree ----- Herb ----- Shrub ----- Climber -----
 14. Height: ----- Diameter: -----
 15. Bark Characteristics: -----
 16. Smell: -----
 17. Latex: Present: ----- Absent: ----- Colour: -----
 18. Tree parts used in medicine: Root: --- Stem: --- Flower: --- Fruit: --- Seed: -----
 19. How a plant is used: Fresh: ----- Dried: ----- Boiled: -----
 20. Other plant or tree ingredient added to it -----
 21. Method (s) of preparation for use: powdered: ----- Extracted with cold water: ----- With hot water: ---Boiled: ---
 22. Mode of administration: -----
 23. Dosage: -----
 24. Source of collection of species: ----- Any other comment: -----

Table 1. Parts used

| S.No. | Parts used | Species |
|-------|----------------|---------|
| 1 | Leaves | 27 |
| 2 | Seeds | 8 |
| 3 | Roots | 10 |
| 4 | Rhizome | 3 |
| 5 | Fruits | 4 |
| 6 | Flowers | 2 |
| 7 | Inflorescences | 1 |
| 8 | Tubers | 2 |
| 9 | Shoot | 1 |
| 10 | Bark | 13 |
| 11 | Stem | 3 |
| 12 | Pods | 3 |
| 13 | Whole plant | 2 |

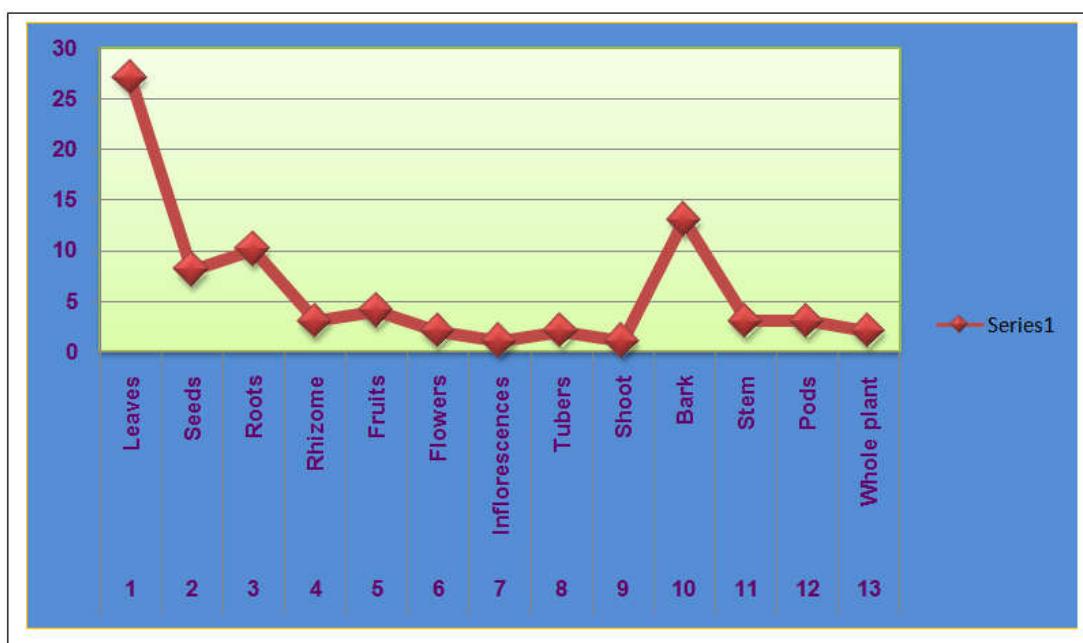
**Chart 1. The maximum parts used**

Table 2. Ethnomedicinal plant of the Study area

| S.No. | Voucher No. | Botanical Name | Family | Local Name/ Hindi | Parts used | Mode of Preparation | Mode of administration | Disease |
|-------|-------------|---|---------------|----------------------|------------------------|--|---|--|
| 1. | RHT 65619 | Helleniaspeciosa (J.Koenig) S.R.Dutta | Costaceae | Keiokand | rhizomes | Paste of rhizome prepared by rubbing with rose water | Applied externally | Swellings and Inflammation. |
| 2. | RHT 65620 | Holarrenapubescens Wall. ex G.Don | Apocynaceae | Korya | Bark | 2g of powder of the bark or 5gml of juice of the bark, with equal volume of ginger juice | Orally taken twice daily | Diarrhoea and Dysentery |
| 3. | RHT 65621 | SidaacutaBurm.f. | Malvaceae | Bariyari | Root,Leaves | Juice of the leaf | Directly applied over a wound | Wounds and cuts |
| 4. | RHT 65623 | Achyranthusaspera L.; | Amaranthaceae | Chirchita | Leaves | Leaf paste | Applying externally | Wasp,Bees and insect bite. |
| 5. | RHT 65624 | Nyctanthesarbor-tristis Linn. | Nyctanthaceae | Murjhatri | Leaves | Leaf 10-20ml juice. | Orally | Fever, Rheumatism |
| 6. | RHT 65625 | Helicteresisora L. | Sterculiaceae | Aitta | Pods, bark and Leaf | Fruit bark 3-6g powder, 50-100ml decoction. | Orally | cough and asthma |
| 7. | RHT 65626 | CelastruspaniculatusWilld. | Celastraceae | Kujur | Seed oil | Seed oil mixed with egg yellow part. | Taken orally | Boils and itching. |
| 8. | RHT 65627 | Madhuca longifolia var. latifolia (Roxb.) A.Chev. | Sapotaceae | Mhahuwa | Bark | Green bark ground with a small quantity of papaversomniferum | Applied over the body followed by bath after sometime | Itches and scabies. |
| 9. | RHT 65630 | Syzygiumcumini (L.) Skeels | Myrtaceae | Jamun | Fruit, bark,seed, leaf | 2g of powder of the seed taken in water | Orally taken morning and evening. | Diabetes and frequent Urination. |
| 10. | RHT 65631 | Terminaliachebula Retz. | Combretaceae | Hadra | Bark, fruit | Powder of the fruit pulp mixed with tooth powder and used to clean tooth. | External | Pain in the Gums, Swellings and haemorrhage. |
| 11. | RHT 65633 | Bauhinia vahlii Wight & Arn. | Fabaceae | Mahalan | Pods | Decoction of seven pods | Taken orally for 2 days. | Dysentery |
| 12. | RHT 65634 | Asparagus racemosusWilld. | Asparagaceae | Satawar | Root | 15ml of juice of fresh rootstock, mixed with milk | Taken twice a day orally | Galactagog intestinal, disinfectant use |
| 13. | RHT 65635 | Mimosa pudica Linn | Mimosaceae | Lajwanti | Leaf, Root | Paste of the leaf | Used as poultice. | Hydrocele, Rheumatic and Glandular Swelling. |
| 14. | RHT 65636 | Elephantopusscaberr L. | Asteraceae | Mayurjhota | root leaves | Decoction of <i>E. scaber</i> root. | Taken orally. | Cough, tonic |
| 15. | RHT 65637 | CurculigoorchoidesGaertn. | Hypoxidaceae | Dindakhajur | rhizome | Rhizome is cleaned by removing the rind and central vascular strand, dried and powdered. | 5g of this powder is taken orally twice daily | Hip pain,piles, scabies,wounds and skin eruptions. |
| 16. | RHT 65639 | Cassia fistula Linn. | Fabaceae | Bandarlatti | Flowers and pods | Pulp of the pod, ground with water and boiled. | Applied poultice,externally. | Swelling arthritisJoint pain. |
| 17. | RHT 65640 | Anogeissuslatifolia (Roxb. ex DC.) Wall. ex Bedd. | Combretaceae | Dhaora | leaves, bark | Made a paste with water | Taken orally | Diarrhoea, Dysentery, |
| 18. | RHT 65642 | Adina cordifolia (Roxb.) Benth. & Hook.f. ex B.D.Jacks. | Rubiaceae | Karam | Stem,Bark. | Decoction of stem bark | Taken orally. | Rheumatism |
| 19. | RHT 65643 | Schleicheraoleosa (Lour.) Oken | Sapindaceae | Kusum | Bark,Seed oil | Seed crushed, oil extracted | Externally applied. | Rheumatism,Skin eruptions, |
| 20. | RHT 65644 | Phyllanthusemblica L. | Euphorbiaceae | Awla | Fruit,seed,leaf | Oil is obtained from the seed. | Applied externally | Skin infection. |
| 21. | RHT 65645 | Bambusabambos (L.) Voss | Poaceae | Bas | Leaves, shoot | Raw,boiled and cooked Bambusa bamboos shoot extracts | Taken externally. | Thyroid problems. |
| 22. | RHT 65646 | Aeglemarmelos (L.) Correa. | Rutaceae | Bael | Leaf | Leaf paste | 20g of paste taken orally | Excessive menstrual flow. |
| 23. | RHT 65647 | FlemingiacapparBenth | Fabaceae | Chotagulfulli | Root | Stem boiled in water. | Taken orally | Cold and cough. |
| 24. | RHT 65649 | PterocarpusmarsupiumRoxb. | Fabaceae | Bija | Bark,leaf | Leaves are grounded and baked. | Applied externally. | Boils,wounds and skin disease. |
| 25. | RHT 65652 | Buchananiacochinchinensis (Lour.) Almeida | Anacardiaceae | Char | Stem,bark,Root | Decoction | Taken orally. | Diarrhoea. |
| 26. | RHT 65653 | Pongamiapinnata (L.)Pierre | Fabaceae | Karanj | Leaf, Seed | Powder of the seed-coat removed seed in a dose of about 500mg, mixed in honey. | Taken orally morning and evening. | Whooping Cough and Bronchitis. |

Continue.....

| | | | | | | | | |
|-----|-----------|---------------------------------------|------------------|--------------|---------------------|---|---|---|
| 27. | RHT 65654 | Cassia tora L. | Fabaceae | Chakora | Leaf, seed | 50g of the leaf boiled in 1 litre of water reduced to 125ml and filtered. | 10-15ml taken orally in the morning and evening. | Fever in children during teething period and smooth bowel movement. |
| 28. | RHT 65655 | Momordicacharantia L. | Cucurbitaceae | Karela | Seed, fruit,leaf | Preparation of 100 ml juice of leaf. | Taken orally once a week. | Blood sugar and also antitoxic. |
| 29. | RHT 65656 | Euphorbia hirta L. | Euphorbiaceae | Dudhiaghaz | leaf | Leaf of this plant and of solanumtrilobatum. | Orally taken together. | Nutrient |
| 30. | RHT 65657 | Cynodondactylon(L.) Pers. | Poaceae | Dub ghas | Whole plant | 30g of the grass without nodes plus 30g of leaf of Punicagranatum,boiled in 500ml water and reduced to 125ml. | Taken orally in a dose of 50ml once in two hours. | Bleeding in ear,nose and rectum. |
| 31. | RHT 65658 | Ageratum conyzoides L. | Asteraceae | Basawnaghaz | Leaf | An aqueous extract of leaves. | Taken orally. | Anti-inflammatory,antibacterial, antifungal |
| 32. | RHT 65660 | Dioscoreabulbifera L. | Dioscoreaceae | Gitti Kanda | Tuber, leaf | Roasted tuber powder | Taken orally | Bronchitis |
| 33. | RHT 65662 | Amorphophalluskiusianus (Makino) | Araceae | Jangliaol | Tuber | | Applied externally. | Skin disease. |
| 34. | RHT 65670 | Smilax ovalifolia Roxb. ex D.Don | Smilacaceae | Ranpawan | Root, stem | Tooth brush | Used as tooth brush. | Toothache. |
| 35. | RHT 65671 | Hemidesmusindicus (L.)R.Br. | Apocynaceae | DudhiaLarang | Roots | 5g of fresh root,grounded, mixed well with 200ml of milk. | Taken orally | Piles,urinary irritation,improve flow of urine and dry cough. |
| 36. | RHT 65672 | Bombaxceiba L. | Malvaceae | Semal | Roots | Tonic | Taken orally | Debility. |
| 37. | RHT 65674 | Dendrophthoe falcata (Linn.f.) Etting | Loranthaceae | AmrudKa | leaf | Leaf paste | Applied externally. | Rheumatism. |
| 38. | RHT 65675 | Antidesmaacidum Retz. | Phyllanthaceae | Derango | Leaf | 10g of leaf ground into paste and filtered. | Juice taken orally. | Diarrria |
| 39. | RHT 65677 | Acoruscalamus L. | Acoraceae | Ghodbach | Rhizome | 250mg of charred <i>A.calamus</i> rhizome powder mixed with a little honey. | Taken orally. | Cholic and gas trouble and increase appetite. |
| 40. | RHT 65678 | Catharanthusroseus (L.) G. Don | Apocynaceae | Sadabaharlal | Leaf | 20g of leaf made paste with 100ml of water and filtered. | Taken orally | Diarrhea |
| 41. | RHT 65682 | Sesamumindicum L. | Pedaliaceae | Til | Leaf | Leaf paste | Used as poultice. | Boils. |
| 42. | RHT 65683 | Limnophilaconferta | Scrophulariaceae | Muchari sag | Leaf | Tender leaf boiled. | Taken orally. | Dysenteries. |
| 43. | RHT 65684 | Azardirchataindica A.Juss. | Meliaceae | Neem | Leaf, bark | Tender leaf is mixed with an equal quantity of stem of Glycyrrhizaglabra, made into a paste in water, rolled into pills of the size of pea, dried in shade. | One or two pills taken orally three times a day. | Chicken pox and viral disease. |
| 44. | RHT 65685 | Alstoniascholaris (L.) R. Br. | Apocynaceae | Chatiyani | bark | Decoction of bark. | Taken orally. | abdominal pains and fevers |
| 45. | RHT 65687 | Cissusquadrangula Linn. | Vitaceae | Harjod | Stem | Edible paste of the stem. | Taken orally along with food. | Indigestion and stimulate appetite. |
| 46. | RHT 65688 | Calotropisprocera (Ait.)R.Br. | Apocynaceae | Akwan | Root, leafbark,seed | powdered root bark | Taken orally. | Diarrhoea |
| 47. | RHT 65690 | Cuscutareflexa Roxb. | Convolvulaceae | Banda | Seed, whole plant. | Plant paste | Applied externally. | Eczema. |
| 48. | RHT 65691 | Vitexnegundo Linn. | Lamiaceae | Sindhwar | Seed, leaf, flower | Decoction of 50-100ml. | Taken orally. | Improve eyesight |
| 49. | RHT 65692 | Heteropogoncontortus | Poaceae | Choratghas | Inflorescence | Decoction of inflorescence. | Taken orally. | Asthma. |
| 50. | RHT 65694 | Justiciaadhatoda L. | Acanthaceae | Adhusa | Leaf | leaf decoction | Take the leaf decoction orally with jaggery | Malaria. |

RESULTS AND DISCUSSION

The present study has revealed that the local inhabitants of Balrampur district were generally using about 50 species of 37 families. They are in the following families: Apocynaceae (3), Euphorbiaceae (3), and Fabaceae (3), Poaceae (3), Combretaceae (2), Caesalpiniaceae (2), Asteraceae (2), Araceae (2), and Asclepiadaceae (2). A plant each was recorded from the other families (Table 2).

Conclusion

Balrampur district of Chhattisgarh, India is well known for the occurrence of diverse medicinal plants. This investigation is an attempt to record medicinal properties of the plants by the author with the help of traditional healers and vyadiyas, the traditional healers who possess maximum knowledge on medicinal plants. There are a good number of herbal practitioners in this district who practice herbal medicine and are willing to share their rich knowledge of herbal medicine with the research scholars for the benefit of the good health of the society.

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