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RESEARCH ARTICLE

# Ethnobotanical Survey of Medicinal Plants of Ramgarh Forest

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## ABSTRACT

For thousands of years, healthful plants have vied a vital role throughout the globe in treating and preventing a spread of diseases. Social group folks in Ramgarh forest still rely upon healthful plants and most of them have knowledge of these plants that are used for aid remedies, to treat cough, cold, fever, headache, toxic bites and a few straightforward ailments. The current study was initiated with the aim to spot ancient healers which are active seasoning medication among the social groups in Ramgarh forest, Jhargram District, India and quantitatively documents their autochthonal information on the use of healthful plants significantly commonest ethnomedicinal plants. Field study was distributed over an amount of four months in Ramgarh forest. The ethnomedicinal data was collected through interviews among the native folks. The collected knowledge were analyzed through use worth (UV), informant agreement issue (Fic), fidelity level (FL) and relative importance (RI). A complete of sixty three species of plants distributed happiness to fifty two families were known as unremarkably used ethnomedicinal plants by the social group folks in Ramgarh forest. These disorders were classified into eighteen ailment classes supported the body systems treated. Leaves were the foremost parts used plant elements and most of the medicines were ready within the variety of paste and administered orally. Fic values of the current study indicated that there was a high agreement within the use of plants within the treatment of symptom and polygenic disease among the users.

## KEYWORDS

Data Analysis, Folk Medicine, Ramgarh Tribal, Ramgarh Forest, Jhargram District

## INTRODUCTION

According to the World Health Organization (WHO) regarding 65–80% of the world's population in developing countries depends basically on plants for his or her primary health care owing to impoverishment and lack of access to fashionable medicine.

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In recent years, use of ethnobotanical data in medicative plant analysis has gained goodly attention in segments of the scientific community. Interest in medicative plants has been fuelled by the rising prices of medication prescribed (drugs/pharmaceuticals) within the maintenance of private health and well-being and also the bio prospecting of recent plant derived drugs.

Traditionally all medicative preparations were derived from plants, whether or not within the straight-forward sort of plant components or within a lot of complicated sort of crude extracts, mixtures, etc.

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Primary advantages of victimisation plant derived medicines are that they are comparatively safer than artificial alternatives, providing profound therapeutic benefits and cheaper treatment. Regarding two hundred years ago an accumulation was dominated by flavoring medicines and nearly twenty fifth of the medications prescribed worldwide were return from plants. Of the 252 medication thought about as basic and essential are solely of plant origin and a big variety are artificial medication obtained from natural precursors. Throughout the previous few decades there has been associate degree increasing interest within the study of medicative plants and their ancient use in several components of Asian nation. Within the recent years variety of reports on the utilization of plants in ancient healing by either social group individuals or autochthonic communities of Asian nation is increasing. A few reports on ethnomedicinal uses of plants within the forests of Ramgarh and its connected areas were on the market and every one of these studies were conducted qualitatively with a lacuna in knowledge analysis.

The present study was initiated with associate degree aim to spot knowledgeable resource persons among the Ramgarh tribals in Jhargram district in West Bengal and quantitatively analyze their autochthonic ethnomedicinal data through numerous ethnobotanical tools on the employment of unremarkably used medicative plant[1-2].

### About The Place

Ramgarh is a village of Binpur-1 Block in Jhargram District of west Bengal state, India. It is located 53 KM towards north from Midnapore, 18 KM from Binpur and 157 KM from state capital Kolkata.

## METHOD

### Study Area and People

Ramgarh forest occupy Jhargram districts of West Bengal. The area is 43 hectares and lays 22.72871N latitude and 87.08628E line of longitude (Fig1).

The study was conducted in 5 villages of Ramgarh forest that were settled by tribal every consisting of 5–56 families disbursed within the deep forest areas. The autochthonic individuals of the study space are Santali, the oldest cluster of the branch of group in West Bengal. They live preponderantly in and round the forest.

The Santals are a part of the Austro-Asiatic family, distantly associated with Vietnamese and Khmer. The early Australoids are often known with some facial characteristics like low forehead, thick lips, wide jaw and wavy hair. Historians believe that they were the ancestors of the social group community residing within the Jap a part of Bharat (excluding hill portions). The Santal language, Santali, belongs to the Munda-Mon-Khmer (or Mundari) branch of the Austro-Asiatic language family. There are dialectical variations in Santali. The most dialectical distinction is between Northern Santali, which is spoken by the good majority of Santals, and Southern Santali. The latter is spoken within the southern a part of province and in Orissa, whereas Northern Santali is spoken in most of province and in West Bengal[3-4].

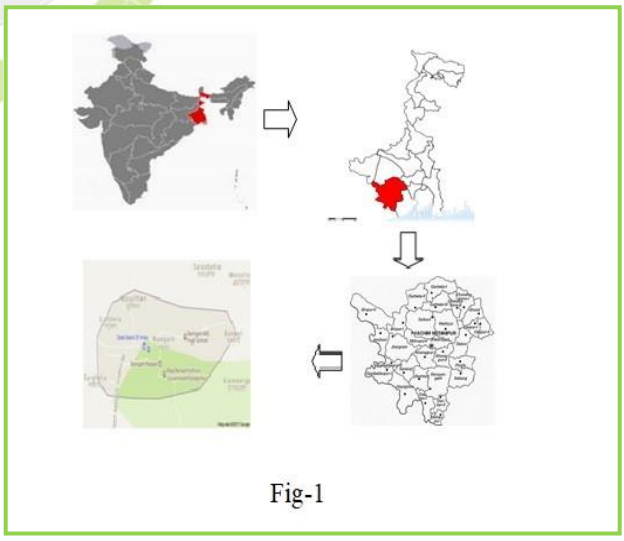
Fig-1

Figure 1: Geographical Map of Ramgarh Forest

### Religions:

One of the foremost studied social group religions in Asian nation, the Santhal faith (Sari dharam) worships Marang

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buru (God), or Bonga(God) , because the Supreme god, the load of belief, however, falls on a court of spirits (Bonga), placated with prayers and offerings so as to keep at bay evil influences. These spirits operate at the village, household, ancestor, and sub-clan level, at the side of evil spirits that cause unwellness and may inhabit village boundaries, mountains, water, tigers, and also the forest. A characteristic feature of the Santhal village could be a sacred grove (known because the Jaher or "Santhal Sthal") on the sting of the settlement wherever several spirits live and wherever a series of annual festivals happen[5].

**Data Collection**

The study space was investigated to urge information from social group practitioners and additionally to cross check the data provided by the opposite social group practitioners throughout the sooner visits. Throughout every field survey a minimum of ten days were spent with the native individuals in their social group hamlets. So as to document the employment of healthful plants, field surveys were administrated from August 2017 to Nov 2017 in Ramgarh forest. A total of twelve resource persons or informants or ancient healers were known to urge the ethnomedicinal information through direct interviews/oral conversations. They need sound data on healthful plants found in their encompassing areas and that they apply drugs among their families and neighbors. A field datasheet has been ready to record the plant details with ethno medicinal information gathered from the normal healers. Information on native name of lant, plant structure used for hardening, technique of preparation, the other plants/agents used as ingredients, modes of administration and were recorded for every collected ethnomedicinal plant[6-8].

**Ailment Categories**

Based on the information obtained from the traditional healers in the study area, all the reported ailments were categorized into 18 categories viz. gastro-intestinal ailments (GIA), dermatological infections/diseases (DID), respiratory systems diseases (RSD), genito-urinary ailments (GUA), fever (Fvr), skeleto-muscular system disorders (SMSD), poisonous bites (PB), circulatory system/ cardiovascular diseases (CSCD), endocrinal disorders (ED), skeletal Problem (SKL), dental care (DC), hair care (HC), ear, nose, throat problems (ENT), cooling agents (CA), anti diabetics (ABT), pain killer (PK), sexually transmitted diseases (STDs) and general health (GH). Several diseases were placed in one ailment category based on the body systems treated.

**Data analysis**

**Informant Consensus Factor (Fic)[9-10]**

The informant consensus factor (Fic) was used to see if there was agreement in the use of plants in the ailment categories between the plant users in the study area. The Fic was calculated using the following formula (Heinrich et al., 1998):

$$Fic = \frac{\text{Nur} \,.\, \text{Nt}}{\text{Nur} \,.1}$$

Where Nur refers to the number of use-reports for a particular ailment category and Nt refers to the number of taxa used for a particular ailment category by all informants. The product of this factor ranges from 0 to 1. A high value (close to 1.0) indicates that relatively few taxa are used by a large proportion of the informants. A low value indicates that the informants disagree on the taxa to be used in the treatment within a category of illness.

**Use value (UV)[11]**

The relative importance of each plant species known locally to be used as herbal remedy is reported as use value (UV) and it was calculated using the following formula (Phillips et al., 1994):

$$UV = \frac{\sum U}{n}$$

Where UV is the use value of a species, U is the number of use reports cited by each informant for a given plant species and n is the total

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number of informants interviewed for a given plant. The UV is helpful in determining the plants with the highest use (most frequently indicated) in the treatment of an ailment. UVs are high when there are many use-reports for a plant and low when there are few reports related to its use.

**Fidelity level (FL)[12]**

To determine the most frequently used plant species for treating a particular ailment category by the informants of the study area, we have calculated the fidelity level (FL). The FL was calculated using the following formula (Friedmen et al., 1986):

$$FL(\%) = \frac{\mathrm{Np}}{\mathrm{N}} \times 100$$

Where Np is the number of use-reports cited for a given species for a particular ailment category and N is the total number of use reports cited for any given species. Generally, high FLs are obtained for plants for which almost all use-reports refer to the same way of using it, whereas low FLs are obtained for plants that are used for many different purposes (Srithi et al., 2009).

**Relative importance (RI)[13]**

We have calculated the relative importance (RI) of each medicinal plant based on the normalized number of pharmacological properties (PH) attributed to it and the normalized number of body systems (BS) it treated. Data on medicinal uses were organized according to the PH attributed to each taxon (e.g. analgesic, antiinflammatory etc.) and to the specific body systems treated (e.g. skin diseases, fever, asthma etc.). The RI was calculated using the following formula (Bennett and Prance, 2000):

$$RI = \frac{\mathrm{RelPH} + \mathrm{Rel\,BS}}{2} \times 100$$

Where RI is the relative importance, PH is the number of reported pharmacological properties for the given plant, RelPH is the relative number of pharmacological properties (PH of a given plant/maximum PH of all reported species), BS is the number of body systems treated and Rel BS is the relative number of body systems treated (BS of a given plant/ maximum BS of all reported species).

**Preparation of Buffer: 0.01N Potassium dihydrogen ortho phosphate (pH 4.8)**

Accurately weighed 1.36gm of Potassium dihyrogen ortho phosphate in a 1000ml of Volumetric flask add about 900ml of milli-Q water added and degas to sonicate and finally make up the volume with water the pH was adjusted to 4.8 with Orthophosphoric acid.

## RESULTS AND DISCUSSION

**Documentation of Indigenous Ethno Medicinal Knowledge**

The present study unconcealed the employment of ninety species of plants distributed in eighty three genera happiness to fifty two families that were normally utilized by most of the TRIBALS for the treatment of sixty five kinds of ailments. The outstanding family was family Leguminosae with 9 species, followed by asteroid dicot family and spurge family with six and 4 species severally. For every reportable species we tend to provide the biology name of the plant, family, voucher specimen variety, local name, life form, use value, parts used, ailments treated, methodology of preparation, mode of administration and relative importance (Table 1).

**Life form and parts used**

Herbs were the primary source of medicine (41%) followed by trees (57%), shrubs (27%), Herbs (11%) and climbers (5%) (Fig. 2). The frequent use of herbs among the indigenous communities is a result of wealth of herbaceous plants in their environs.

Among the various plant components used, the leaves (28%) were most often used for the preparation of drugs aloneor mixed with different plant components. It had been followed by fruit (10%), whole plant (7%), and flower (13%), stem (4%), seed (7%), latex (7%), root (10%), and young twig (4% each) (Fig. 3).

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Table 1: List of commonly used medicinal plants by tribals in Ramgarh Forest, India

| **Botanical name** | **Family** | **Local name** | **Life form** | **Use value** | **Parts used** | **Ailment category: no. of use-reports (ailments treated)** | **Preparation** | **Application** | **RI** |
|---|---|---|---|---|---|---|---|---|---|
| Shorea robusta | Dipterocarpaceae | Sal | Tree | 0.63 | Root | GIA: 3 (carminative)<br>DID: 2 (skin disorders) | Juice | Oral | 27.5 |
| Mahua longifolia | Sapotaceae | Mol / Mohua | Tree | 0.5 | Leaf | DID: 4 (skin disorders) | Pest | Topical | 40.0 |
| Bambusoideae | Grasses | Bans | Tree | 0.75 | Leaf | GH: 2 ( antioxidant )<br>GUA: 4 (menstrual irregularities) | Juice | Oral | 30.0 |
| Acacia auriculiformis | Legumes | Akashmoni | Tree | 0.5 | Leaf | GH: 2 (contains tannin)<br>SMSD: 2 (analgesic) | Decoction | Oral | 25.0 |
| Eucalyptus globulus | Myrtaceae | Eucalyptus | Tree | 0.38 | Leaf | GH:3 (analgesic) | Steam,<br>Decoction | Oral | 35.0 |
| Vachellia nilotica | Legumes | Babla | Tree | 0.75 | Leaf | DC: 6 (Teeth cleaning) | Pest | Tooth powder | 32.5 |
| Ziziphus mauritiana | Rhamnaceae | Kul | Tree | 0.88 | Fruit,<br>Leaf | CSCD: 3<br>GH: 2 (pain relieving)<br>CA: 2 (COOLING AGENT) | Pest | Oral,<br>Topical | 57.5 |
| Ficus racemosa | Moraceae | Dumur | Tree | 0.5 | Bark | PB: 4 (mosquito bites) | Pest | Topical | 40.0 |
| Bombax ceiba | Bombacaceae | Shimul | Tree | 0.88 | Root | STIs: 5 (White discharge) | Decoction | Oral | 35.0 |


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| | | | | | | GUA: 2 (diuretic) | | | |
| Phoenix dactylifera | Palm trees | Khejur | Tree | 0.25 | Root | GH: 2 (Anti-oxidant activity) | Juice | Oral | 25.0 |
| Borassus flabellifer | Palm trees | Tal | Tree | 0.88 | Root | STIs: 3 (Gonorrhea) | Juice | Oral | 67.5 |
| Neolamarckia cadamba | Rubiaceae | Kadam | Tree | 0.5 | Leaf | GH:4 (localized pain) | Paste | Topical | 27.5 |
| Holarrhena floribunda | Apocynaceae | Kurchi | Tree | 0.88 | Bark | GIA: 5 (Diarrhea)<br>GH: 2 (Malaria) | Paste | Oral | 67.5 |
| Cleome gynandra | Capparaceae | velai | Shrub | 0.75 | Seed | PK: 6 (Pain Killer) | Powder | Oral | 37.5 |
| Tephrosia purpurea | Legumes | Jhangli nil | Shrub | 0.75 | Bark | GH: 3 (Anthelmintic, alexiteric)<br>DID: 3 (Leprosy) | Juice | Oral | 25.0 |
| Diospyros melanoxylon | Ebenaceae | kendu | Tree | 0.88 | Leaf, Bark | GH: 2 (antimicrobial properties)<br>DIT: 5 (antihyperglycemic) | Decoction, Juice | Oral | 47.5 |
| Terminalia bellirica | Combretaceae | Bahara | Tree | 1.75 | Flower, Seed | GIA: 5 ( purgation)<br>GH: 4 (various infections)<br>HC: 5 (hair growth) | Pest, Powder | Oral, Topical | 35.5 |
| Cissus quadrangularis | Vitaceae | HardJod | Shrub | 0.75 | Stem | SKL; 6 (broken bones and injured ligaments and tendons) | Pest | Topical | 40.0 |
| Mimosa pudica | Legumes | Lojjaboti | Shrub | 0.75 | Young | PK : 3 (Anti Venom) | Decoction | Oral | 35.0 |

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| | | | | | Twig | GIA: 3 (Pudica For Piles, Ulcers) | | | |
| Cassia fistula | Legumes | Sondal | Tree | 1.0 | Latex, Flower | GH: 4 ( Tumor) GIA: 4 (Purgative) | Pest, Raw | Topical, Oral | 22.5 |
| Nyctanthes arbor-tristis | Oleaceae | Shiuli | Tree | 0.75 | Leaf | Fvr: 6 (Fever) | Juice | Oral | 67.5 |
| Solanum surattense | Solanaceae | Kontikari | Shrub | 0.5 | Young twig | RSD: 4 (bronchitis, cough) | Raw | Oral | 32.5 |
| Cactaceae | Cactaceae | Fonimonsa | Shrub | 0.63 | Whole plant | GH: 5 (construction materials) | Decoction | Oral | 55.0 |
| Euphobia neriifolia Linn | Euphorbiaceae | Monsa | Shrub | 0.38 | Whole plant | CA: 3 (pain and inflammation) | Pest | Topical | 60.0 |
| Enhydra fluctuans | Asteraceae | Hincha | Herb | 0.88 | Leaf | DID: 7 (Skin disease) | Juice | Oral | 22.5 |
| Ficus benghalensis | Moraceae | Bot | Tree | 0.75 | Root | PK: 6 (wound and swelling for quick relief) | Pest | Topical | 37.5 |
| Vitex negundo | Lamiaceae | Beguna/ Nisinda | Shrub | 0.5 | Latex | RSD: 4 (Cough) | Raw | Oral | 67.5 |
| Ipomoea carnea | Convolvulaceae | Kolmi | Herb | 0.63 | Whole plant | GIA: 3 (slightly purgative) DID: 2 (Skin problem) | Raw | Oral | 15.0 |
| Leucas aspera | Lamiaceae | Verenda/ Sombura | Shrub | 0.63 | Seed | GH: 5 (antioxidant, antimicrobial, antinociceptive and cytotoxic activities) | Powder | Oral | 32.5 |
| Albizia Lebbeck | Legumes | Shirish | Tree | 0.88 | Flower | STIs: 7 (infection in | Juice | Oral | 32.5 |


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| | | | | | | vagin) | | | |
| Annona squamosa | Annonaceae | Ata | Tree | 0.63 | Seed | CSCD: 5 (High b;ood pressure) | Powder | Oral | 37.5 |
| Dillenia indica | Dilleniaceae | Chalta | Tree | 0.75 | Bark | GIA: 3 ( Laxative)<br>RSD: 3 (used against coughs) | Juice | Oral | 31.5 |
| Spondias pinnata | Anacardiaceae | Amra | Tree | 0.75 | Root | ENT: 6 (against earache) | Pest | Topical | 37.5 |
| Hemidesmus Indicus | Apocynaceae | Anantamul | Climber | 0.88 | Fruit | GIA: 7 (anti-inflammatory) | Pest | Topical | 30.0 |
| Achyranthes aspera | Amaranthaceae | Apang | Shrub | 1.5 | Root | DC: 5 (Dental pain)<br>PB: 3<br>DID: 2 (itching)<br>ENT: 2 (ear disorders) | Pest | Toothpowder, Topical | 20.0 |
| Pterocarpus marsupium Roxb | Fabaceae | Piyasal | Tree | 1.25 | Latex, Young twig | ADBT: 5(Blood Sugar Level)<br>GIA: 5 (Diarrhea) | Juice | Oral | 27.5 |
| Phyllanthus emblica | Phyllanthaceae | Amloki | Tree | 1.38 | Fruit | GH: 6(strong antioxidant)<br>GIA: 5 (anti-inflammatory, antiulcer, hepatoprotective) | Raw | Oral | 55.0 |
| Terminalia chebula | Combretaceae | Horitoki | Tree | 0.88 | Fruit, Stem | GH: 3 (Tweet)<br>CSCD: 4(stopping the bleeding) | Raw, Decoction | Oral | 42.5 |

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| Aegle marmelos | Rutaceae | Bel | Tree | 1.25 | Fruit, Root | GIA: 3(Constipation) GH: 3(tuberculosis) GUA: 4 (urinary diseases) | Raw, Juice | Oral | 42.5 |
| Ichnocarpus frutescens R.Br | Apocynaceae | Shyamlota | Climber | 1.38 | Flower | RSD: 4(asthma) FEV: 3 GIA: 4 (cholera) | Decoction | Oral | 32.5 |
| Limmonia accidissima L | Rutaceae | Koitbel | Tree | 1.25 | Fruit | GIA: 3(belly pain in children) DC: 3( Bleeding in gum) CSCD: 4( purifies blood) | Raw | Oral | 22.5 |
| Anogeissus latifolia | Combretaceae | Dha | Tree | 0.88 | Seed, Leaf | GH: 4(wounds and localized swelling) GIA: 3(diarrhea, bleeding piles) | Powder, Juice | Oral | 47.5 |
| Aristolochia indica L. | Aristolochiaceae | Ishwarmul | Shrub | 1.13 | Stem, Fruit | GH: 5(stimulant and tonic) PB: 4(Snake bites) | Juice, Powder | Oral | 35.0 |
| Kalancoe pinnata | Crassulaceae | Amarshankar Patharkuchi | Shrub | 0.88 | Leaf, Stem | PK: 4 PB: 3 (insect bites) | Pest | Topical | 17.5 |
| Hygrophila auriculata (Schum.) Heyne | Acanthaceae | Kulekhara | Herb | 1.38 | Whole plant | CSCD: 6 (tonic) GUA: 2 (urinary calculi) | Decoction | Oral | 32.5 |


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| | | | | | | RSD: 3 (anuria and | | | |
| Strychnos nux-vomica L | Loganiaceae | Kuchila | Tree | 0.63 | Fruit | GIA: 5 (Stimulent) | Juice | Oral | 32.5 |
| Terminalia arjuna | Combretaceae | Arjun | Tree | 1.23 | Root, Bark | GUA: 6 ( cleanse urinary infections like UTI) GH: 3 (balancing effect on the kapha and pitta doshas) | Juice | Oral | 57.5 |
| Cascabela thevetia | Apocynaceae | Kolke | Tree | 0.63 | Flower | CSCD: 5 (rise in the cardiac output) | Decoction | Oral | 32.5 |
| Gmelina arborea | Verbenaceae | Gamar | Tree | 0.5 | Leaf | CSCD: 4 (bleeding disorders and to improve blood production) | juice | Oral | 42.5 |
| Eichhornia crassipes | Pontederiaceae | Kochuripana | Herb | 0.75 | Flower | DID: 6 (medicating the skin) | Pest | | 22.5 |
| Dalbergia sissoo | Legumes | Sishu | Tree | 0.5 | Bark | STIs: 4 (Sexual impotency in men | Juice | Oral | 40.0 |
| Lagerstroemia speciosa | Lythraceae | Jarul | Tree | 0.75 | Leaf; Flower | GIA: 4 (purgative) ADBT: 2 (diabetes) | Jiuce, Powder | Oral | 45.5 |
| Clerodendrum infortunatum | Lamiaceae | Ghetu | Shrub | 0.63 | Flower, Leaf | RSD: 3(asthma, cough) DID: 2 (Skin disease) | Decoction, Paste | Oral, Topical | 17.0 |
| Croton bonplandianus | Euphorbiaceae | Bontulshi | Shrub | 0.75 | Leaf | DID : 6 (skin diseases) | Paste | Topical | 55.0 |
| Withania somnifera | Nightshade | Aswagandha | Shrub | 0.88 | Leaf, | GH: 5 ( Piles) CA: 2 (burns and | Juice, | Oral, | 35.0 |

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| | | | | | Flower | wounds) | Powder | Topical | |
| Abroma augusta (L)Lt | Sterculiaceae | Ulotkombal | Shrub | 0.88 | Seed | ED: 7 (hormones level and regulates menstruation) | Juice | Oral | 15.0 |
| Uraria crinita | Fabaceae | Shankarjota | Shrub | 0.75 | Bark | HC: 6 (to rid the hair) | Paste | Topical | 47.5 |
| Tridax procumbens | Daisy | Bishallakarani | Herb | 0.88 | Leaf | PK: 7 (Open woonds) | Pest | Topical | 47.5 |
| Schleichera oleosa | Sapindaceae | Kusum | Tree | 1.0 | Leaf, Bark | DID: 4 (Skin disease) GH: 4 (Malaria) | Pest, Decoction | Topical, Oral | 65.0 |
| Combretum indicum | Combretaceae | Madhabilota | Climber | 1.23 | Leaf, Whole Plant | DID: 5 ( Skin Problem) RSD: 4 ( Asthma) | Pest, decoction | Topical, Oral | 47.5 |
| Datura stramonium | Nightshade | Dhutra | Shrub | 0.63 | Bark | HC: 5 (hair fall) | Paste | Topical | 25.0 |
| Paederia foetida Linn. | Rubiaceae | Gandal | Herb | 1.0 | Leaf, Latex | GIA: 5 (DIARRHEA) PK: 3 (Pain killer) | Decoction | Oral | 45.0 |
| Mimusops elengi Linn. | Sapotaceae | Bokul | Tree | 0.63 | Fruit | GH: 5 (headache and sinusitis.) | Raw | Oral | 17.5 |


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Many autochthonal communities elsewhere conjointly used principally leaves for the preparation of seasoning medicines. The explanation why leaves were used principally is that they're collected terribly simply than underground components, flowers and fruits etc. and in scientific purpose of read leaves are active in chemical action and production of metabolites.

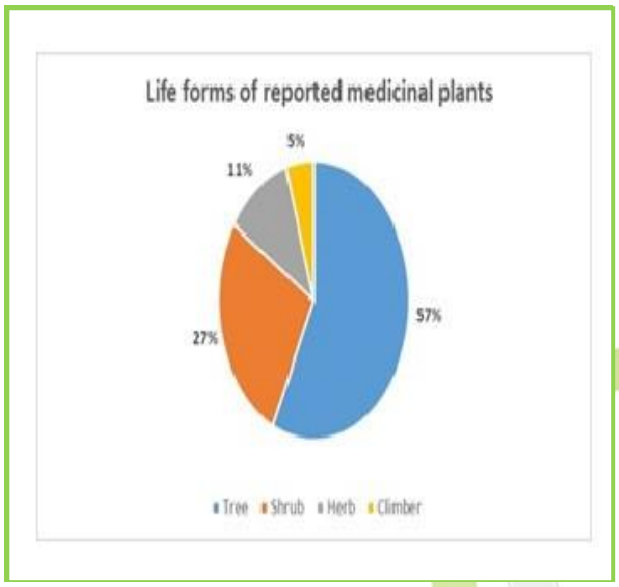


Figure 2: Reported Medicinal Plants

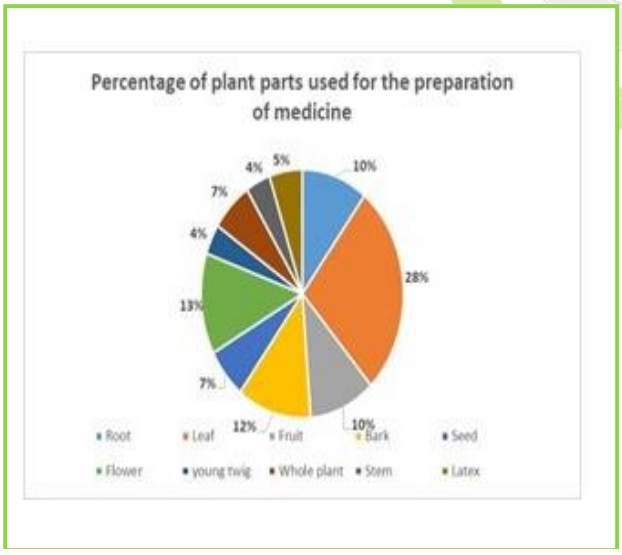


Figure 3: Percentage of plant parts used for the preparation of medicine

**Method of Preparation and Mode of Administration of Plants**

The preparation and utilization of plant elements were classified into 5 classes (Fig. 4). Of these, most typically used methodology of preparation was paste (30%) followed by powder (11%), juice (28%), raw (12%, taken as raw and natural object ready as pickles and boiling (19%). Preparation of paste for the treatment of ailments may be a common apply among alternative social group communities in India and other elements of the globe. The paste was ready by grinding the contemporary or dried plant elements with oil or water. The powder was ready by the grinding of shade dried plant elements. The boiling was obtained by boiling the plant elements in water till the amount of the water reduced to minimum or needed amount. The inhalation was done by the burning of plant elements and inhaled the smoke through nose or mouth.

Internal uses (67%) were predominating over external or topical uses (30%) and Tooth powder uses (3%). For topical use, the foremost necessary ways used were direct application of paste or medicated oil (with oil) and principally addressed diseases like skin disorders, wounds, heel cracks, poison bites, rheumatism, body pain and headache. Most of the medicines got orally that is in agreement with another studies conducted elsewhere. (Fig. 5)

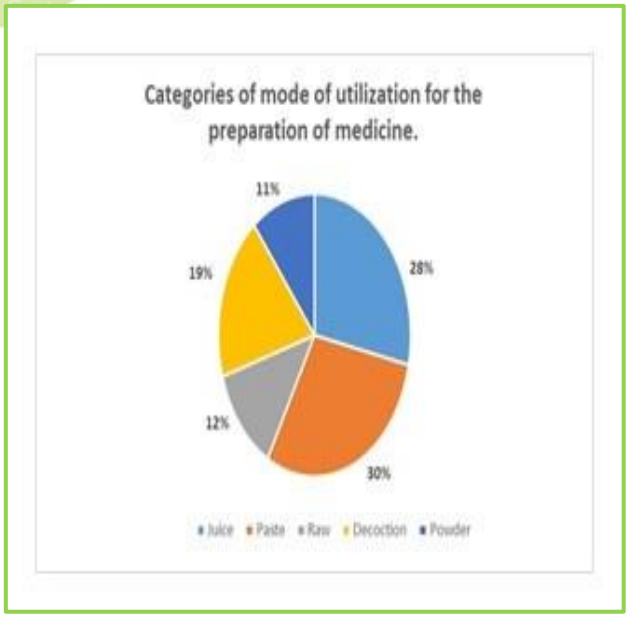


Figure 4: Categories of Mode of Utilization for the Preparation of Medicine

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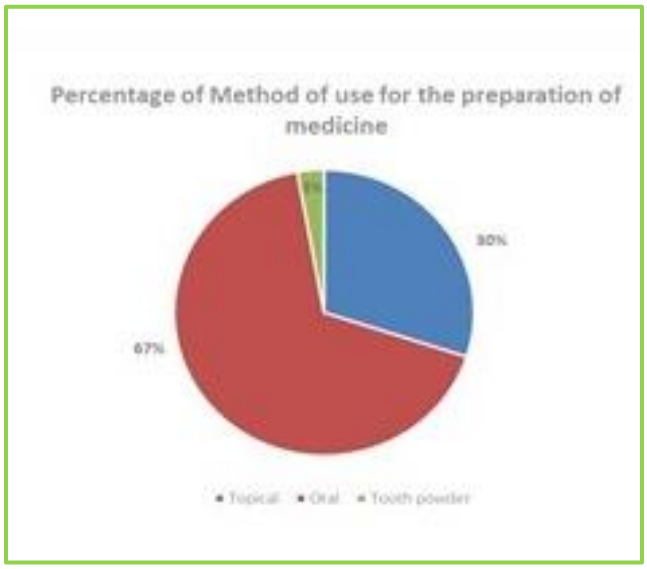


Figure 5: Percentage of Method of Use for the Preparation of Medicine

**Plant Use Values**

The most commonly used species was *Terminalia bellirica*, with 14 use-reports by 8 informants, giving the highest use value of 1.75 is attributed to its use in the treatment of various diseases and it is well recognized by all the informants.

The plant with very low use value was *Phoenix dactylifera* which is reported by only 2 informants with a UV of 0.25, but the informant is regularly using this plant having Anti-oxidant activity. Similar to our study, tender leaves of the plant is used to cure irregular menstruation and sterility in women by the Indian. While tribal people in Cuba (Cano and Volpato, 2004) and Ghana (Asase et al., 2010) were using the plant for the treatment of malaria and liver pain respectively. In general, scarce availability of the plants in the study area leads them to low UV as in the case of Ramgarh Forest.

**Informant Consensus Factor**

Generally Fic of native data for sickness treatment trusted the supply of the plant species within the study space (Rajakumar and Shivanna, 2009). So as to use the informant agreement issue (Fic), we tend to classify the sicknesses into broad sickness classes. The Fic values in our study are ranged from 0.73 to 1.00.

The employment classes with quite forty use-reports were dermatologic infections/diseases (43 use-reports, eleven species), gastro-intestinal diseases (67 use-reports, fourteen species) and skeleto-muscular system disorders (2 use-reports, one species) (Fig. 6). In the gift study, Skeleto muscular disorder had the best Fic of 1.00 and it is in agreement with the previous studies among the neighboring autochthonic communities in province, India. The least agreement between the informants was ascertained within the skeleto-muscular system disorders with a Fic of 1.00 followed by toxic bites with a Fic of 0.80, genito-urinary ailments 0.67 and ear, nose, throat issues with a Fic of 0.86 (Table 2).Our findings showed that these classes had high range of use-reports among the tribals of Ramgarh Forest with moderate Fic value.

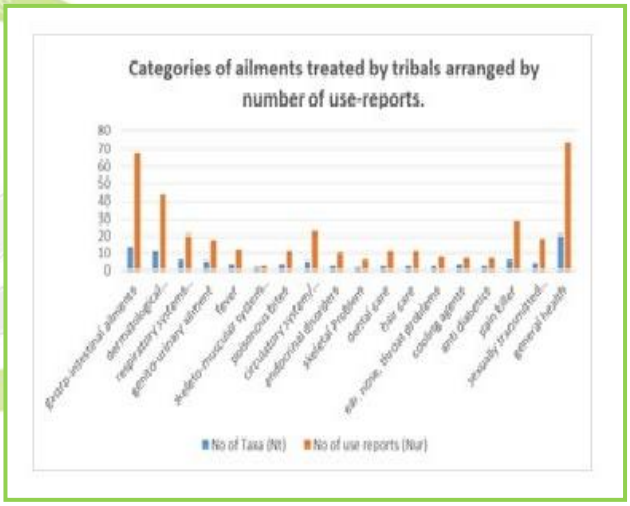


Figure 6: Categories of ailments treated by tribals arranged by number of use-reports

Table 2: Informant consensus factor for commonly used medicinal plants

| Ailment category | Number of taxa (Nt) | Number of use-reports (Nur) | Informant consensus factor (Fic) |
|---|---|---|---|
| Gastro-intestinal ailments | 14 | 67 | **0.80** |
| Dermatological infections/ | 11 | 43 | **0.76** |

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| | | | |
|---|---|---|---|
| diseases | | | |
| Respiratory systems diseases | 6 | 21 | **0.75** |
| Genito-urinary ailment | 5 | 18 | **0.76** |
| Fever | 3 | 12 | **0.82** |
| Skeleto-muscular system disorders | 1 | 2 | **1.0** |
| Poisonous bites | 3 | 11 | **0.80** |
| Circulatory system/ cardiovascular diseases | 5 | 23 | **0.82** |
| Endocrinal disorders | 2 | 10 | **0.89** |
| Skeletal Problem | 1 | 6 | **1.00** |
| Dental care | 2 | 11 | **0.90** |
| Hair care | 2 | 11 | **0.90** |
| Ear, nose, throat problems | 2 | 8 | **0.86** |
| Cooling agents | 3 | 7 | **0.67** |
| Anti-diabetics | 2 | 7 | **0.83** |
| Pain killer | 6 | 29 | **0.82** |
| Sexually transmitted diseases | 4 | 19 | **0.83** |
| General health | 21 | 74 | **0.73** |
| TOTAL | 93 | 379 | |

## CONCLUSION

The present study unconcealed that ancient medicines were still in common use by the social group communities and correct information of the plants and their medicative properties were controlled by solely the tribal people.

Thence necessity for elaborated investigation of ethnobotanical information control by every soc ial group community is needed before such valuable information vanishes. Thus, our work would be helpful in preventing the loss of ethnomedicinal traditions of Ramgarh social group communities. The plants with highest use values within the study could indicate the doable prevalence of valuable phytochemical compounds and it needs a quest for potential new medication to treat numerous ailments. The efficaciousness and safety of all the reportable ethnomedicinal plants has to be evaluated for phytochemical and medicine studies particularly the plants with high informant accord issue, use value, and relative importance oughttorun priority to hold out bioassay and toxicity studies.

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