

## Medicinal Plants of Rourkela Forest Division, Odisha, India

### ABSTRACT

130 ethnomedicinal plants used by the tribals of Rourkela Forest Division, Odisha, India is presented along with their traditional therapeutic uses. Some photographs are provided for the identification of enumerated ethnomedicinal plants for academic and conservation purposes.

**Keywords:** Sundargarh, Traditional therapeutic practices, conservation works

### INTRODUCTION

Medicinal plants have been a cornerstone of traditional medicine for centuries, providing life-saving treatments and alleviating suffering for millions worldwide. These plants possess unique bioactive compounds that combat diseases, reduce symptoms, and promote overall well-being. From ancient civilizations to modern medicine, medicinal plants have played a vital role in shaping human health. Medicinal plants contribute significantly to modern pharmaceuticals, with approximately 50% of all drugs derived from plant-based compounds (Das et al., 2022). Iconic examples include aspirin, quinine, and vincristine. These plants have revolutionized treatments for pain management, malaria, cancer, and other life-threatening conditions (Eyal, 2018). Beyond pharmaceutical applications, medicinal plants offer accessible and affordable healthcare solutions, particularly in rural and underserved communities. Traditional herbal remedies provide relief for common ailments, reducing reliance on synthetic medications. Moreover, medicinal plants empower local communities to manage their health, fostering self-sufficiency and cultural preservation (Misra et al., 2012; Kumar et al., 2021). Medicinal plants also hold immense potential for addressing emerging global health challenges. Research into plant-based antimicrobials and antivirals offers promising solutions to combat antibiotic resistance and infectious diseases. Furthermore, plant-derived compounds exhibit anti-inflammatory, antioxidant, and anticancer properties, positioning medicinal plants as critical components in the fight against chronic diseases (Joshi et al., 2024). Conservation and sustainable utilization of medicinal plants are crucial to ensure their continued availability. Habitat destruction, over-harvesting, and climate change threaten many medicinal plant species.

Observed threats in Odisha state are followings:

**Comment [H1]:** The abstract should briefly state the introduction of the study followed by the purpose and method of the research before the results of the finding

**Comment [H2]:** The duration of the study should be stated (e.g. month and year).

**Comment [H3]:** Are not is.

1. Habitat destruction and fragmentation due to deforestation, urbanization, infrastructure development and encroachment.
2. Over-exploitation and unsustainable harvesting practices.
3. Climate change, altering plant distribution and abundance.
4. Over-grazing and browsing by livestock.
5. Invasive species affecting medicinal plant populations.
6. Over-exploitation of high-demand species like Sarpagandha, Lodha, Palua etc.
7. Pests and diseases affecting medicinal plant populations.
8. Lack of market regulation and standardization.
9. Limited awareness and education on sustainable harvesting practices.
10. Inadequate conservation and protection policies.
11. Lack of proper management practices.

Efforts to protect and cultivate these plants, while supporting local communities and traditional knowledge, will safeguard humanity's access to these invaluable natural resources. For conservation of medicinal plants and their traditional knowledge, documentation is an important step (Dimri et al., 2024). Therefore, keeping this in view, an attempt has been made to document the medicinal plants of Rourkela Forest Division (RFD), Odisha through field survey and interaction with local communities. The presented data will be useful to conserve the medicinal resources of the RFD.

#### METHODOLOGY

**Study area:** Rourkela Forest Division is one of the three forest divisions in Sundargarh District. Other divisions are the Sundargarh Forest Division and the Bonai Forest Division. Rourkela Forest Division is bounded by longitudes 84° 04' E to 85° 04' E and latitudes 21° 03' N to 22° 08' N. The division has Reserved Forests, Proposed Reserved Forests, Demarcated Protected Forests, Village Forests, Protected Forests, and DLC Forests. The total forest area was computed to be 1100.43 sq. km, which is about 36.73% of the geographical area of the division. It is also known as the "Steel City of Odisha," and it is situated in the northern district of Sundargarh, Odisha, India. The area is rich with forests and tribal communities with abundant traditional knowledge (Sethi et al., 2023; Pradhan et al., 2024; Sethi et al., 2024; Kumar, 2024).

**Comment [H4]:** Geographical location of the study areas should be included.



**Plate 1:** Field exploration and collection of ethnobotanical uses of available medicinal plants in Rourkela Forest Division, Odisha

**Collection of ethnobotanical information:** An extensive field survey was carried out during 2023-2024 for the collection of ethnobotanical data using standard methods (Kumar et al., 2012; Kumar and Jena, 2017; Kumar et al., 2017; Kumar et al., 2021). Field survey was done in different Ranges of Rourkela Forest Division, Odisha, India. Photographs are taken by the authors and presented in this communication. The medicinal uses of enumerated plants were gathered through interaction with local communities (Plate 1).

## Results

Field survey and interactions with local communities of Rourkela Forest Division, Odisha, India revealed that about 130 plants are used frequently to treat many health problems belonging to 114 genera and 56 families. Details are presented here along with botanical name, family, local name, parts used and uses.

**1. Botanical Name:** *Abrus precatorius* L.

**Family:** Fabaceae

**Local Name:** Kaincha

**Parts Used:** Seed

**Use:** The seed paste is applied externally to cure rheumatoid arthritis.

**2. Botanical Name:** *Acalypha indica* L.

**Family:** Euphorbiaceae

**Local Name:** Indramarisa

**Parts Used:** Leaf

**Use:** Tender leaves are collected and consumed as a leafy vegetable to treat eye problems.

**3. Botanical Name:** *Acmella paniculata* (Wall. Ex DC.) R.K. Jansen

**Family:** Asteraceae

**Local Name:** Akarkara

**Parts Used:** Flower

**Use:** Crushed flower is applied externally to get relief from toothache.

**4. Botanical Name:** *Aegle marmelos* (L.) Correa

**Family:** Rutaceae

**Local Name:** Bela

**Parts Used:** Leaf

**Use:** Leaf juice is taken in an empty stomach in the morning to cure malaria.

**5.Botanical Name:** *Aerva lanata* (L.) Juss. Ex Schult

**Family:** Amaranthaceae

**Local Name:** Paunsia

**Parts Used:** Whole plant

**Use:** Whole plant juice is used in the treatment of cough, asthma and headache.

**6.Botanical Name:** *Aganosma dichotomum* K. Schum.

**Family:** Apocynaceae

**Local Name:** Bana Malati

**Parts Used:** Root

**Use:** Root decoction is taken twice a day to cure fever.

**7.Botanical Name:** *Ageratum conyzoides* L.

**Family:** Asteraceae

**Local Name:** Pokasungha

**Parts Used:** Flower

**Use:** Flower juice is used externally against scabies.

**8.Botanical Name:** *Alangium salviifolium* (L.f.) Wangerin

**Family:** Cornaceae

**Local Name:** Ankula

**Parts Used:** Bark

**Use:** Root bark is used externally against insect bite.

**9.Botanical Name:** *Albizia lebbek* (L.) Benth

**Family:** Fabaceae

**Local Name:** Nidrabati

**Parts Used:** Seed

**Use:** Seed paste is applied externally to reduce piles problems.

**10.Botanical Name:** *Alstonia scholaris* (L) R.Br.

**Family:** Apocynaceae

**Local Name:** Chhatian

**Parts Used:** Bark

**Use:** Bark infusion of this plant is used to reduce blood glucose level.

**11.Botanical Name:** *Alternanthera sessilis* (L.) DC.

**Family:** Amaranthaceae

**Local Name:** Madaranga

**Parts Used:** Leaf

**Use:** Leaf paste is applied externally in the treatment of cuts and wounds.

**12.Botanical Name:** *Amorphophallus paeoniifolius* (Dennst.) Nicolson

**Family:** Araceae

**Local Name:** Olua

**Parts Used:** Stem

**Use:** Stem sap is fermented and taken as a treatment for diarrhoea and dysentery.

**13.Botanical Name:** *Andrographis paniculata* (Burm.f.) Wall. ex Nees.

**Family:** Acanthaceae

**Local Name:** Bhui Nimba

**Parts Used:** Whole plant

**Use:** Whole plant paste with turmeric is used in skin infections.

**14.Botanical Name:** *Artocarpus heterophyllus* Lam.

**Family:** Moraceae

**Local Name:** Panasa

**Parts Used:** Root

**Use:** Root decoction is given to treat asthma and other respiratory problems.

**15.Botanical Name:** *Asparagus racemosus* Willd.

**Family:** Asparagaceae

**Local Name:** Satavari

**Parts Used:** Tuber

**Use:** The tuber is applied externally to reduce the pain during migraine.

**16.Botanical Name:** *Bacopa monnieri* (L.) Wettst.

**Family:** Plantaginaceae

**Local Name:** Brahmi

**Parts Used:** Whole plant

**Use:** The whole plant juice is useful in the treatment of brain problems.

**17.Botanical Name:** *Bauhinia variegata* L.

**Family:** Fabaceae

**Local Name:** Kanchana

**Parts Used:** Bark

**Use:** The bark decoction is used to control diarrhoea and dysentery.

**18.Botanical Name:** *Begonia picta* Sm.

**Family:** Begoniaceae

**Local Name:** Mamuli Saga

**Parts Used:** Leaf

**Use:** Leaves are used as a leafy vegetable to boost immunity.

**19.Botanical Name:** *Bidens pilosa* L.

**Family:** Asteraceae

**Local Name:** Bisalyakarani

**Parts Used:** Whole plant

**Use:** The whole plant powder is mixed with Karanja oil and applied externally to cure fungal infections.

**20.Botanical Name:** *Boerhavia diffusa* L.

**Family:** Nyctaginaceae

**Local Name:** Punarnava

**Parts Used:** Leaf

**Use:** The leaf juice is administrated orally as a blood purifier and to get relief from muscular pain.

**21.Botanical Name:** *Bombax ceiba* L.

**Family:** Malvaceae

**Local Name:** Simili

**Parts Used:** Seed

**Use:** Seeds and root paste is applied externally to cure various skin diseases.



**Plate 2:** Some common medicinal plants of Rourkela Forest Division, Odisha, India; a) *Buchanania lanzan*, b) *Calotropis gigantea*, c) *Heliotropium indicum*, d) *Dentella repens*, e) *Celastrus paniculatus*, f) *Cyanotis axillaris*, g) *Drosera burmannii*, h) *Cryptolepis buchananii*

**22.Botanical Name:** *Borassus flabellifer* L.

**Family:** Arecaceae

**Local Name:** Tala

**Parts Used:** Root

**Use:** Root decoction is used in the treatment of diarrhoea, dysentery and other stomach related problems.

**23.Botanical Name:** *Buchanania lanzan* Spreng. (Plate 2a)

**Family:** Anacardiaceae

**Local Name:** Chara

**Parts Used:** Fruits

**Use:** Fruits are edible and used to treat cough and asthma.

**24.Botanical Name:** *Butea monosperma* (Lam.) Kuntze

**Family:** Fabaceae

**Local Name:** Palash

**Parts Used:** Root

**Use:** Decoction of root is used in treating night blindness.

**25.Botanical Name:** *Butomopsis latifolia* (D. Don) Kunth

**Family:** Alismataceae

**Local Name:** Pani Saga

**Parts Used:** Leaf

**Use:** Decoction of leaves is taken in the morning to treat throat-ache.

**26.Botanical Name:** *Caesalpinia pulcherrima* (L.) Sw.

**Family:** Fabaceae

**Local Name:** Puraiphula

**Parts Used:** Flower

**Use:** The infusion is used in urine infections.

**27.Botanical Name:** *Cajanus scarabaeoides* (L.) Thouars

**Family:** Fabaceae

**Local Name:** Bana Kolatha

**Parts Used:** Seeds

**Use:** The seeds are consumed as pulses against kidney problems.

**28.Botanical Name:** *Calotropis gigantea* (L.) W.T. Aiton (Plate 2b)

**Family:** Apocynaceae

**Local Name:** Arakha

**Parts Used:** Latex

**Use:** Latex of this plant is used in fungal infections.

**29.Botanical Name:** *Capparis zeylanica* L.

**Family:** Capparaceae

**Local Name:** Asadhua

**Parts Used:** Root-bark

**Use:** The decoction of root-bark is used for vomiting and for improving the appetite.

**30.Botanical Name:** *Cardiospermum halicacabum* L.

**Family:** Sapindaceae

**Local Name:** Phutphutka

**Parts Used:** Leaf

**Use:** Leaf juice is used to relieve earaches.

**31.Botanical Name:** *Careya arborea* Roxb.

**Family:** Lecythidaceae

**Local Name:** Kumbhi

**Parts Used:** Bark

**Use:** The cold infusion of the bark is given to treat cough and fever.

**32.Botanical Name:** *Cascabela thevetia* (L.) Lippold

**Family:** Apocynaceae

**Local Name:** Kaniyari

**Parts Used:** Root

**Use:** Root is macerated with coconut oil and applied externally to cure infections of ringworm.

**33.Botanical Name:** *Casearia graveolens* Dalzell.

**Family:** Salicaceae

**Local Name:** Giridi

**Parts Used:** Root

**Uses:** The root paste is used to cure piles.

**34.Botanical Name:** *Cassia fistula* L.

**Family:** Fabaceae

**Local Name:** Sunari

**Parts Used:** Seed

**Use:** Seed paste is used to treat various skin diseases.

**35.Botanical Name:** *Cassytha filiformis* L.

**Family:** Lauraceae

**Local Name:** Nirmuli

**Parts Used:** Stem

**Use:** The stem paste is used to kill hair lice.

**36.Botanical Name:** *Catharanthus roseus* (L.) G. Don

**Family:** Apocynaceae

**Local Name:** Sadabihari

**Parts Used:** Whole plant

**Use:** The whole plant decoction is used in the treatment of diabetes.

**37.Botanical Name:** *Ceiba pentandra* (L.) Gaertn.

**Family:** Malvaceae

**Local Name:** Dhalasimili

**Parts Used:** Flower

**Use:** Flower juice is used in the treatment of dysentery.

**38.Botanical Name:** *Celastrus paniculatus* Willd. (Plate 2e)

**Family:** Celastraceae

**Local Name:** Kujuri

**Parts Used:** Seed

**Use:** The seed oil is used as a brain tonic for improving memory.

**39.Botanical Name:** *Centella asiatica* (L.) Urb.

**Family:** Apiaceae

**Local Name:** Thalkudi

**Parts Used:** Whole plant

**Use:** Whole plant juice is used in treating diabetes.

**40.Botanical Name:** *Ceratopteris thalictroides* (L.) Brongn.

**Family:** Pteridaceae

**Local Name:** Pani Saga

**Parts Used:** Leaf

**Use:** Fresh leaves juice is used to stop bleeding immediately.

**41.Botanical Name:** *Chromolaena odorata* (L.) R.M. King & H. Rob.

**Family:** Asteraceae

**Local Name:** Bambenati

**Parts Used:** Flower

**Use:** The flower juice is used externally against scabies.

**42.Botanical Name:** *Chrysopogon aciculatus* (Retz.) Trin.

**Family:** Poaceae

**Local Name:** Guguchia

**Parts Used:** Root

**Use:** Root infusion is useful in the treatment of constipation.

**43.Botanical Name:** *Cissampelos pareira* L.

**Family:** Menispermaceae

**Local Name:** Mussakani

**Parts Used:** Rhizome

**Use:** The decoction is used to treat cough and cold.

**44.Botanical Name:** *Cissus quadrangularis* L.

**Family:** Vitaceae

**Local Name:** Hadajoda

**Parts Used:** Stem

**Use:** The stem juice is given to treat menstrual disorders.

**45.Botanical Name:** *Cleistanthus collinus* (Roxb.) Benth. Ex Hook.f.

**Family:** Phyllanthaceae

**Local Name:** Karada

**Parts Used:** Leaf

**Use:** The decoction of crushed leaves is used to treat leprosy.

**46.Botanical Name:** *Clematis roylei* Rehder.

**Family:** Ranunculaceae

**Local Name:** Ganamari

**Parts Used:** Leaf

**Use:** Leaf paste is applied externally to cure various skin diseases.

**47.Botanical Name:** *Clerodendrum infortunatum* L.

**Family:** Lamiaceae

**Local Name:** Kumuti

**Parts Used:** Root

**Use:** Root juice is used against tapeworm infection.

**48.Botanical Name:** *Clitoria ternatea* L.

**Family:** Fabaceae

**Local Name:** Aparajita

**Parts Used:** Flower

**Use:** The flowers are useful to treat eye problems.

**49.Botanical Name:** *Cocculus hirsutus* (L.) W.Theo.

**Family:** Menispermaceae

**Local Name:** Dahadahia

**Parts Used:** Leaf

**Use:** An infusion of the leaves is used to treat stomachache.

**50.Botanical Name:** *Coix lacryma-jobi* L.

**Family:** Poaceae

**Local Name:** Guruguda

**Parts Used:** Stem

**Use:** The stem juice is squeezed into the eyes to relieve irritation due to injury.

**51.Botanical Name:** *Colocasia esculenta* (L.) Schott.

**Family:** Araceae

**Local Name:** Saru

**Parts Used:** Rhizome

**Use:** The rhizome is cooked without spices and consumed to treat constipation.

**52.Botanical Name:** *Commelina benghalensis* L.

**Family:** Commelinaceae

**Local Name:** Kanasiri

**Parts Used:** Leaf

**Use:** The infusion of leaves is used in lowering high blood pressure.

**53.Botanical Name:** *Couroupita guianensis* Aubl.

**Family:** Lecythidaceae

**Local Name:** Naga Champa

**Parts Used:** Bark

**Use:** The bark decoction is used to treat hypertension.

**54.Botanical Name:** *Crateva religiosa* Ainslie.

**Family:** Capparaceae

**Local Name:** Baruna

**Parts Used:** Root bark

**Use:** The infusion of root bark is administered for gastric trouble.

**55.Botanical Name:** *Croton bonplandianus* Baill.

**Family:** Euphorbiaceae

**Local Name:** Bana Tulasi

**Parts Used:** Leaf

**Use:** Leaf paste is used externally to treat cuts and wounds.

**56.Botanical Name:** *Croton roxburghii* Wall.

**Family:** Euphorbiaceae

**Local Name:** Maha Sindhu

**Parts Used:** Leaf

**Use:** Leaf paste is used to treat skin infections.

**57.Botanical Name:** *Cryptolepis buchananii* R.Br. ex Roem. &Schult. (Plate 2h)

**Family:** Apocynaceae

**Local Name:** Dudhi Nai

**Parts Used:** Leaf, Stem and Root

**Use:** The paste of leaves, stem and root paste is applied externally to treat bone fracture.

**58.Botanical Name:** *Cucumis melo* L.

**Family:** Cucurbitaceae

**Local Name:** Bing Dimbu

**Parts Used:** Fruit

**Use:** Fruit juice is used to treat stomach disorders.

**59.Botanical Name:** *Curcuma Caesia* Roxb.

**Family:** Zingiberaceae

**Local Name:** Kala Haldi

**Parts Used:** Root

**Use:** Root paste is used externally in joint pain.

**60.Botanical Name:** *Curcuma longa* L.

**Family:** Zingiberaceae

**Local Name:** Bana Haldi

**Parts Used:** Rhizome

**Use:** The rhizome powder is taken to treat stomach problems.

**61.Botanical Name:** *Cyanotis axillaris* (L.) D. Don ex Sweet (Plate 2f)

**Family:** Commelinaceae

**Local Name:** Kana

**Parts Used:** Root

**Use:** The root juice is used to kill stomach worms.

**62.Botanical Name:** *Cyanotis tuberosa* (Roxb.) Schult. & Schult.f.

**Family:** Commelinaceae

**Local Name:** Bada Kana

**Parts Used:** Tuber

**Use:** Decoction of the tuber is used in lowering blood sugar level.

**63.Botanical Name:** *Cymbopogon citratus* (DC.) Stapf

**Family:** Poaceae

**Local Name:** Dhanwantari

**Parts Used:** Leaf

**Use:** Leaf decoction is used to treat headaches.

**64.Botanical Name:** *Dalbergia lanceolaria* L.f.

**Family:** Fabaceae

**Local Name:** Bali Sisso

**Parts Used:** Bark

**Use:** The bark infusion is useful to treat diarrhoea.

**65.Botanical Name:** *Dalbergia sissoo* Roxb. ex DC.

**Family:** Fabaceae

**Local Name:** Sissoo

**Parts Used:** Seed

**Use:** The seed oil is used to treat burning and scabies.

**66.Botanical Name:** *Datura stramonium* L.

**Family:** Solanaceae

**Local Name:** Dudura

**Parts Used:** Leaf

**Use:** The leaf paste is externally applied for skin diseases.

**67.Botanical Name:** *Delonix regia* (Bojer ex Hook.) Raf.

**Family:** Fabaceae

**Local Name:** Krushnachuda

**Parts Used:** Leaf

**Use:** Crushed leaves are useful in treating insect bites.

**68.Botanical Name:** *Dendrobium herbaceum* Lindl.

**Family:** Orchidaceae

**Local Name:** Rasna

**Parts Used:** Whole plant

**Use:** Whole plant paste is used in the treatment for fracture and dislocated bone.

**69.Botanical Name:** *Dendrophthoe falcata* (L.f.) Ettingsh.

**Family:** Loranthaceae

**Local Name:** Malang

**Parts Used:** Stem

**Use:** The stem juice is used to reduce stomach problems.

**70.Botanical Name:** *Dentella repens* (L.) J.R. Forst. & G. Forst. (Plate 2d)

**Family:** Rubiaceae

**Local Name:** Dudhia

**Parts Used:** Leaf

**Use:** Leaf paste is used to treat eczema.

**71.Botanical Name:** *Desmodium laxiflorum* DC.

**Family:** Fabaceae

**Local Name:** Dongarmuli

**Parts Used:** Root

**Use:** Root decoction is useful in the treatment of smallpox.

**72.Botanical Name:** *Digera muricata* (L.) Mart.

**Family:** Amaranthaceae

**Local Name:** Mati Saga

**Parts Used:** Root

**Use:** Root decoction is taken in the morning to cure kidney disorders.

**73.Botanical Name:** *Dillenia pentagyna* Roxb.

**Family:** Dilleniaceae

**Local Name:** Rai

**Parts Used:** Leaf

**Use:** The leaf paste is applied externally to treat fractures.

**74.Botanical Name:** *Dioscorea alata* L.

**Family:** Dioscoreaceae

**Local Name:** Khamba Alu

**Parts Used:** Tuber

**Use:** The juice is taken in the morning to treat gastrointestinal disorders.

**75.Botanical Name:** *Dioscorea bulbifera* L.

**Family:** Dioscoreaceae

**Local Name:** Pita Alu

**Parts Used:** Bulbil

**Use:** The bulbil paste is used in treating piles.

**76.Botanical Name:** *Dioscorea pentaphylla* L.

**Family:** Dioscoreaceae

**Local Name:** Korba Alu

**Parts Used:** Tuber

**Use:** Tubers are consumed as a birth control agent.

**77.Botanical Name:** *Diospyros malabarica* (Desr.) Kostel.

**Family:** Ebenaceae

**Local Name:** Mankada Kendu

**Parts Used:** Bark

**Use:** The bark paste is used externally to treat boils.

**78.Botanical Name:** *Diospyros melanoxylon* Roxb.

**Family:** Ebenaceae

**Local Name:** Kendu

**Parts Used:** Fruit

**Use:** The juice is used to treat stomach problems.

**79.Botanical Name:** *Diospyros montana* Roxb.

**Family:** Ebenaceae

**Local Name:** Halada

**Parts Used:** Fruit

**Use:** The paste is used to treat boils.

**80.Botanical Name:** *Diplocyclos palmatus* (L.) C. Jeffrey

**Family:** Cucurbitaceae

**Local Name:** Sivlingi

**Parts Used:** Whole plant

**Use:** The whole plant paste is used against skin infections.

**81.Botanical Name:** *Drosera burmanni* Vahl. (Plate 2g)

**Family:** Droseraceae

**Local Name:** Pokakhai

**Parts Used:** Whole plant

**Use:** The whole plant decoction is used in treating cough.

**82.Botanical Name:** *Eclipta prostrata* (L.) L.

**Family:** Asteraceae

**Local Name:** Bhringraj

**Parts Used:** Leaf

**Use:** The hair oil is prepared by boiling the fresh leaves with either coconut or sesame oil.

**83.Botanical Name:** *Elephantopus scaber* L.

**Family:** Asteraceae

**Local Name:** Mayurachulia

**Parts Used:** Whole plant

**Use:** The whole plant paste is used to treat fungal skin infections.

**84.Botanical Name:** *Eranthemum pulchellum* Andrews.

**Family:** Acanthaceae

**Local Name:** Khaira

**Parts Used:** Leaf

**Use:** The leaves are macerated with coconut oil and applied to cure cracked feet.

**85.Botanical Name:** *Eryngium foetidum* L.

**Family:** Apiaceae

**Local Name:** Bana Dhania

**Parts Used:** Whole plant

**Use:** The whole plant decoction is used to treat malaria.

**86.Botanical Name:** *Erythrina variegata* L.

**Family:** Fabaceae

**Local Name:** Paladhua

**Parts Used:** Flower

**Use:** The infusion is used to treat earache.

**87.Botanical Name:** *Euphorbia hirta* L.

**Family:** Euphorbiaceae

**Local Name:** Dudhi

**Parts Used:** Whole plant

**Use:** The whole plant paste is used as an antiseptic agent.

**88.Botanical Name:** *Evolvulus alsinoides* (L.) L.

**Family:** Convolvulaceae

**Local Name:** Sankha Puspi

**Parts Used:** Leaf

**Use:** The leaf juice is used to treat dandruff.

**89.Botanical Name:** *Ficus hispida* L.f.

**Family:** Moraceae

**Local Name:** Panidimiri

**Parts Used:** Bark

**Use:** The bark decoction is useful in treating fever.

**90.Botanical Name:** *Ficus racemosa* L.

**Family:** Moraceae

**Local Name:** Dimiri

**Parts Used:** Fruit

**Use:** The fruit is consumed in lowering blood glucose levels.

**91.Botanical Name:** *Ficus semicordata* Miq.

**Family:** Moraceae

**Local Name:** Bhui Dimiri

**Parts Used:** Fruit

**Use:** Ripen fruits are eaten raw to cure diabetes.

**92.Botanical Name:** *Ficus tinctoria* G. Forst.

**Family:** Moraceae

**Local Name:** Kharsara

**Parts Used:** Leaf

**Use:** The juice is used as a dressing for breaking bones.

**93.Botanical Name:** *Flemingia chappar* Buch. -Ham. Ex Benth

**Family:** Fabaceae

**Local Name:** Ranikathi

**Parts Used:** Root

**Use:** The decoction is used in treating epilepsy.

**94.Botanical Name:** *Floscopa scandens* Lour.

**Family:** Commelinaceae

**Local Name:** Pani Kana Saga

**Parts Used:** Leaf

**Use:** The leaves are used as leafy vegetable to cure stomach problems.

**95.Botanical Name:** *Gardenia resinifera* Aiton

**Family:** Rubiaceae

**Local Name:** Gurdu

**Parts Used:** Whole plant

**Use:** The decoction is used in killing worms.

**96.Botanical Name:** *Gardenia latifolia* Korth.

**Family:** Rubiaceae

**Local Name:** Dekamali

**Parts Used:** Whole plant

**Use:** The decoction is used to reduce high blood pressure.

**97.Botanical Name:** *Globba racemosa* Sm.

**Family:** Zingiberaceae

**Local Name:** Gada

**Parts Used:** Whole plant

**Use:** The paste along with water is taken orally to relieve stomach pain.

**98.Botanical Name:** *Gloriosa superba* L.

**Family:** Colchicaceae

**Local Name:** Agnisikha

**Parts Used:** Root

**Use:** The root is mixed with coconut oil and used against skin infections.

**99.Botanical Name:** *Gmelina arborea* Roxb. ex Sm.

**Family:** Lamiaceae

**Local Name:** Gambhari

**Parts Used:** Bark

**Use:** The decoction is used to treat stomach-related problems.

**100.Botanical Name:** *Gnetum edule* (Willd.) Blume

**Family:** Gnetaceae

**Local Name:** Lolari

**Parts Used:** Leaf

**Use:** The paste is used in treating inflammation.

**101.Botanical Name:** *Grangea maderaspatana* (L.) Poir.

**Family:** Asteraceae

**Local Name:** Agnikumari

**Parts Used:** Leaf

**Use:** The leaf juice is used in treating earache.

**102.Botanical Name:** *Grewia hirsuta* Vahl.

**Family:** Tiliaceae

**Local Name:** Kukurbicha

**Parts Used:** Leaf

**Use:** The paste is used in treating fungal infections.

**103.Botanical Name:** *Guilandina bonduc* L.

**Family:** Fabaceae

**Local Name:** Bada Gila

**Parts Used:** Seed

**Use:** The crushed seed juice is used in treating fever.

**104.Botanical Name:** *Haldina cordifolia* (Roxb.) Ridsdale

**Family:** Rubiaceae

**Local Name:** Kuruma

**Parts Used:** Stem bark

**Use:** The paste is used in the treatment of jaundice.

**105.Botanical Name:** *Helicteres isora* L.

**Family:** Malvaceae

**Local Name:** Modimodika

**Parts Used:** Bark

**Use:** Bark paste is used to treat scabies.

**106.Botanical Name:** *Heliotropium indicum* L. (Plate 2c)

**Family:** Boraginaceae

**Local Name:** Hatisundha

**Parts Used:** Whole plant

**Use:** The whole plant paste is used to treat rheumatism.

**107.Botanical Name:** *Hemidesmus indicus* (L.) R. Br.

**Family:** Apocynaceae

**Local Name:** Anantamula

**Parts Used:** Whole plant

**Use:** The paste is applied externally to heal wounds.

**108.Botanical Name:** *Hibiscus sabdariffa* L.

**Family:** Malvaceae

**Local Name:** Kudrum

**Parts Used:** Leaf, Flower

**Use:** The leaves and flowers are used for making a tonic tea for indigestion.

**109.Botanical Name:** *Holostemma ada-kodien* Schult.

**Family:** Apocynaceae

**Local Name:** Arkapuspi

**Parts Used:** Leaf, Root

**Use:** The paste of leaf and root is applied externally to cure swelling and inflammation.

**110.Botanical Name:** *Homalium napaulense* (DC.) Benth.

**Family:** Salicaceae

**Local Name:** Dahanamari

**Parts Used:** Bark

**Use:** The bark juice about of two spoons three times a day is given to cure stomach-related problems.

**111.Botanical Name:** *Hybanthus enneaspermus* (L.) F. Muell.

**Family:** Violaceae

**Local Name:** Madanamastaka

**Parts Used:** Root

**Use:** Infusion of the root is useful in the treatment of urinary infections.

**112.Botanical Name:** *Hydrolea zeylanica* (L.) Vahl.

**Family:** Hydroleaceae

**Local Name:** Kashindri

**Parts Used:** Leaf

**Use:** The leaf decoction is used in lowering blood glucose levels.

**113.Botanical Name:** *Ichnocarpus frutescens* (L.) W.T. Aiton

**Family:** Apocynaceae

**Local Name:** Shyama Lata

**Parts Used:** Root

**Use:** The root infusion is useful in the treatment of fever and malaria.

**114.Botanical Name:** *Impatiens balsamina* L.

**Family:** Balsaminaceae

**Local Name:** Haragaura

**Parts Used:** Flower

**Use:** The flower paste is used in treating burns.

**115.Botanical Name:** *Indigofera cassioides* Rottler ex DC.

**Family:** Fabaceae

**Local Name:** Girli

**Parts Used:** Root

**Use:** The root paste is used in the treatment of chest pain.

**116.Botanical Name:** *Ipomoea aquatica* Forssk.

**Family:** Convolvulaceae

**Local Name:** Kalama Saga

**Parts Used:** Leaf

**Use:** The leaf soup is useful to reduce high blood pressure.

**117.Botanical Name:** *Ipomoea carnea* Jacq.

**Family:** Convolvulaceae

**Local Name:** Amari

**Parts Used:** Latex

**Use:** Latex of this plant is used to treat menstrual problems.

**118. Botanical Name:** *Ipomoea triloba* L.

**Family:** Convolvulaceae

**Local Name:** Laxmana

**Parts Used:** Whole plant

**Use:** The whole plant is used as a poultice in the treatment against headaches.

**119. Botanical Name:** *Ipomoea vitifolia* (Burm.f.) Sweet

**Family:** Convolvulaceae

**Local Name:** Paninai

**Parts Used:** Whole plant

**Use:** The whole plant infusion is used in the treatment of jaundice.

**120. Botanical Name:** *Ixora pavetta* Roxb.

**Family:** Rubiaceae

**Local Name:** Luhajangi

**Parts Used:** Wood

**Use:** The infusion is taken as a treatment for rheumatism.

**121. Botanical Name:** *Ixora undulata* Roxb. ex Sm.

**Family:** Rubiaceae

**Local Name:** Karuna

**Parts Used:** Leaf

**Use:** The infusion is used in the treatment of dysentery.

**122. Botanical Name:** *Jasminum multiflorum* (Burm.f.) Andrews

**Family:** Oleaceae

**Local Name:** Danta Puspa

**Parts Used:** Leaf

**Use:** The leaf paste is used externally to heal wounds.

**123. Botanical Name:** *Jatropha gossypifolia* L.

**Family:** Euphorbiaceae

**Local Name:** Bai Gaba

**Parts Used:** Latex

**Use:** The latex is applied externally to treat cuts and wounds.

**124. Botanical Name:** *Justicia betonica* L.

**Family:** Acanthaceae

**Local Name:** Had-Pat

**Parts Used:** Leaf

**Use:** Leaf juice is used to treat stomach-related problems.

**125. Botanical Name:** *Kalanchoe pinnata* (Lam.) Pers

**Family:** Crassulaceae

**Local Name:** Amarpoi

**Parts Used:** Leaf

**Use:** The juice of crushed leaves is used in the treatment of kidney stones.

**126. Botanical Name:** *Knoxia sumatrensis* (Retz.) DC.

**Family:** Rubiaceae

**Local Name:** Gola

**Parts Used:** Leaf and flower

**Use:** The infusion of leaves and flowers are used in the treatment of asthma.

**127. Botanical name:** *Leea macrophylla* Roxb. ex Hornem.

**Family:** Vitaceae

**Local name:** Hati Kana

**Parts used:** Rhizome

**Uses:** Rhizome paste is used to cure joint pain.

**128. Botanical Name:** *Mesua ferrea* L.

**Family:** Calophyllaceae

**Local Name:** Nageswar

**Parts Used:** Root

**Use:** The root decoction is used to cure respiratory problems.

**129. Botanical Name:** *Reinwardtia indica* Dumort.

**Family:** Linaceae

**Local Name:** Langara

**Parts Used:** Root

**Use:** Root paste is used to remove maggots from the wounds of cattle.

**130. Botanical Name:** *Rungia pectinata* (L.) Nees

**Family:** Acanthaceae

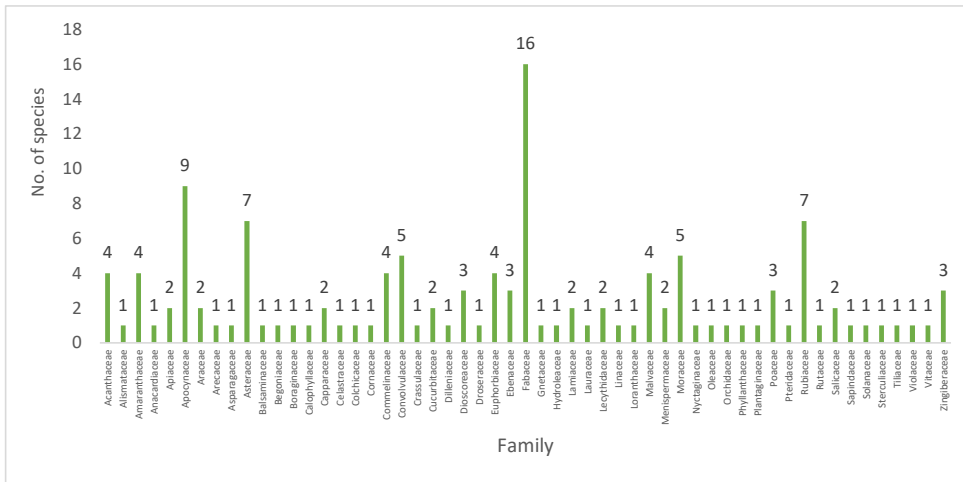
**Local Name:** Mati Saag

**Parts Used:** Root

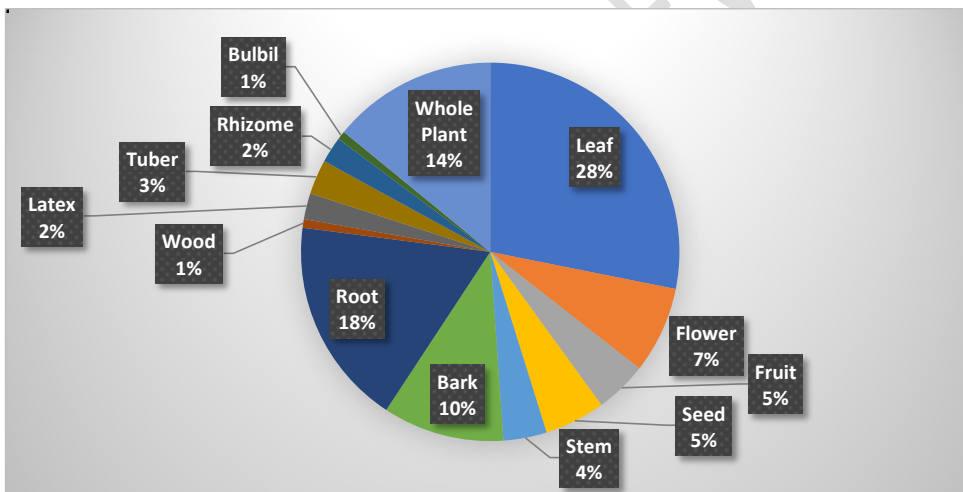
**Use:** Root decoction is used to kill stomach worms.

#### **Discussion**

It was observed that maximum medicinal plants belonging to Fabaceae family (Figure 1). It was noticed that leaf is used in maximum (28 %) times to cure the diverse diseases and disorders (Figure 2). It was noticed that enumerated 130 medicinal plants can be categorized in five groups. Plants used in digestive issues, skin and hair care, respiratory problems, infection & inflammation, and other health issues. Plants used for digestive problems are *Aegle marmelos* (Bela) - leaf juice for malaria, *Amorphophallus paeoniifolius* (Olua) - stem sap for diarrhea and dysentery, *Buchanania lanzan* (Chara) - fruits for cough and asthma, *Cocculus hirsutus* (Dahadahia) - leaf infusion for stomachache, *Dioscorea alata* (Khamba alu) - tuber juice for gastrointestinal disorders, *Ficus racemosa* (Dimiri) - fruit for lowering blood glucose levels, *Ficus semicordata* (Bhuin Dimiri) - ripen fruits for diabetes, *Globba racemosa* (Gada) - whole plant paste for stomach pain and *Hybanthus enneaspermus* (Madanamastaka) - root infusion for urinary infections. Plants used for skin and hair care are *Abrus precatorius* (Kaincha) - seed paste for rheumatoid arthritis, *Acalypha indica* (Indramarisa) - leafy vegetable for eye problems, *Acmella paniculata* (Akarkara) - crushed flower for toothache, *Cassia fistula* (Sunari) - seed paste for skin diseases, *Eclipta prostrata* (Bhringraj) - leaf hair oil for hair growth, *Impatiens balsamina* (Haragaura) - flower paste for burns, *Jatropha gossypifolia* (Bai Gaba) - latex for cuts and wounds. Plants used in respiratory issues are *Adhatoda vasica* (Basak) - leaf juice for asthma and bronchitis, *Artocarpus heterophyllus* (Panasa) - root decoction for asthma and respiratory problems, *Buchanania lanzan* (Chara) - fruits for cough and asthma and *Knoxia sumatrensis* (Gola) - leaf and flower infusion for asthma. Plants used in infections and inflammations are *Ageratum conyzoides* (Pokasungha) - flower juice for scabies, *Andrographis paniculata* (Bhuin Nimba) - whole plant paste for skin infections, *Bidens pilosa* (Bisalyakarani) - whole plant powder for fungal infections, *Calotropis gigantea* (Arakha) - latex for fungal infections and *Cryptolepis buchananii* (Dudhi Nai) - leaf, stem, and root paste for bone fracture.



**Figure 1:** Diversity of medicinal plants in fifty-six families



**Figure 2:** Percentage of parts used to cure different health problems in Rourkela Forest Division

Plants used for other health issues are, *Albizia lebbek* (Nidrabati) - seed paste for piles, *Alstonia scholaris* (Chhatian) - bark infusion for reducing blood glucose levels, *Asparagus racemosus* (Satavari) - tuber for migraine pain, *Bacopa monnieri* (Brahmi) - whole plant juice for brain problems and *Cassytha filiformis* (Nirmuli) - stem paste for hair lice. Other researchers have also documented floral diversity and their significances. Mallick et al., (2015) documented the weed flora of Rourkela and adjoining areas of Sundargarh district. Kumar et al., (2018) documented a total of 154 plant species (53 are medicinal, 43 are

ornamental, and 33 are edible, while 23 are weeds), belonging to 128 genera and 55 families, were identified, along with their botanical name, vernacular name, family, and habitat from Rourkela city. Mallick et al., (2019) documented the weeds of Rourkela, Odisha. Das et al., (2023) documented the ethnobotanical uses of 25 plants against diabetes from Sundargarh, Odisha.

### **Conclusion**

The documentation of 130 medicinal plants used by local communities in Rourkela Forest Division, Odisha, highlights the significance of traditional knowledge in healthcare. These plants, spanning 114 genera and 56 families, are utilized to treat various health issues, ranging from common ailments to chronic diseases. The diversity of medicinal plants in this region underscores the importance of conserving biodiversity and preserving traditional knowledge. This ethnobotanical study demonstrates the dependence of local communities on forest resources for their healthcare needs. It emphasizes the necessity for sustainable forest management and conservation initiatives that involve local communities. Further research on the pharmacological properties of these plants can lead to the development of new drugs and therapies. Moreover, documentation and dissemination of this traditional knowledge can help safeguard the cultural heritage of these communities. Efforts to integrate traditional medicine into mainstream healthcare can enhance access to affordable and effective healthcare for rural populations, ultimately contributing to the well-being of both people and the environment.

### **COMPETING INTERESTS DISCLAIMER:**

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

**Comment [H5]:** Calibri format should be change to time new roman format.

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