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:

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 0 46’ E to 85 0 14' E and latitudes 210 83' N to 220 48' 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).

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 lebbeck* (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: Bhuin 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: Bhuin 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 gossypiifolia* 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 gossypiifolia* (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.

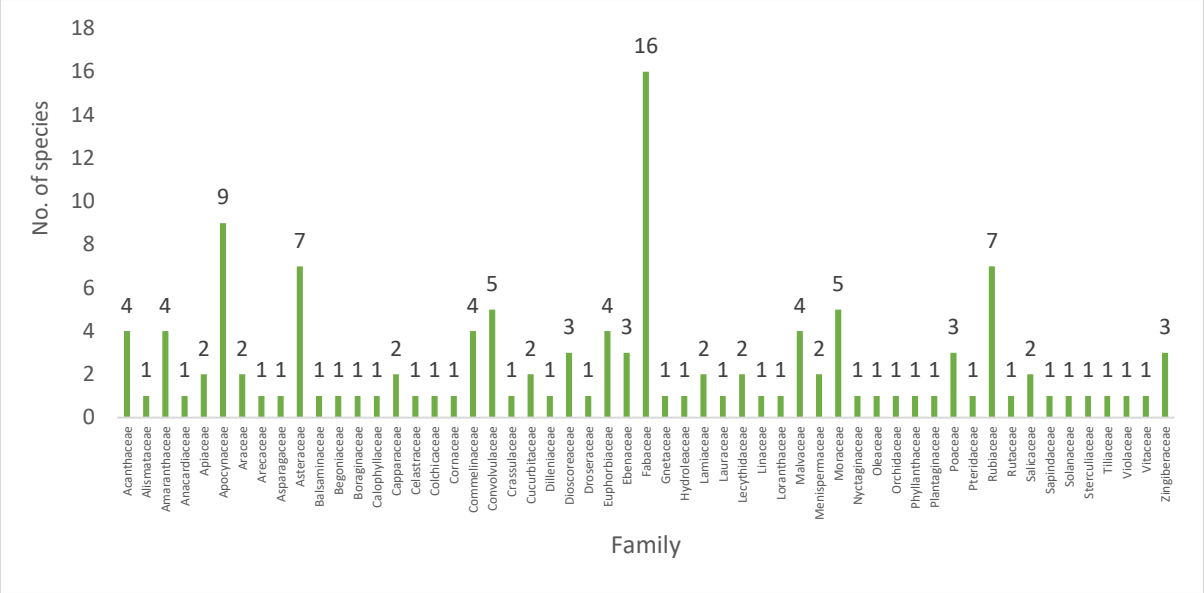

Figure 1: Diversity of medicinal plants in fifty-six families

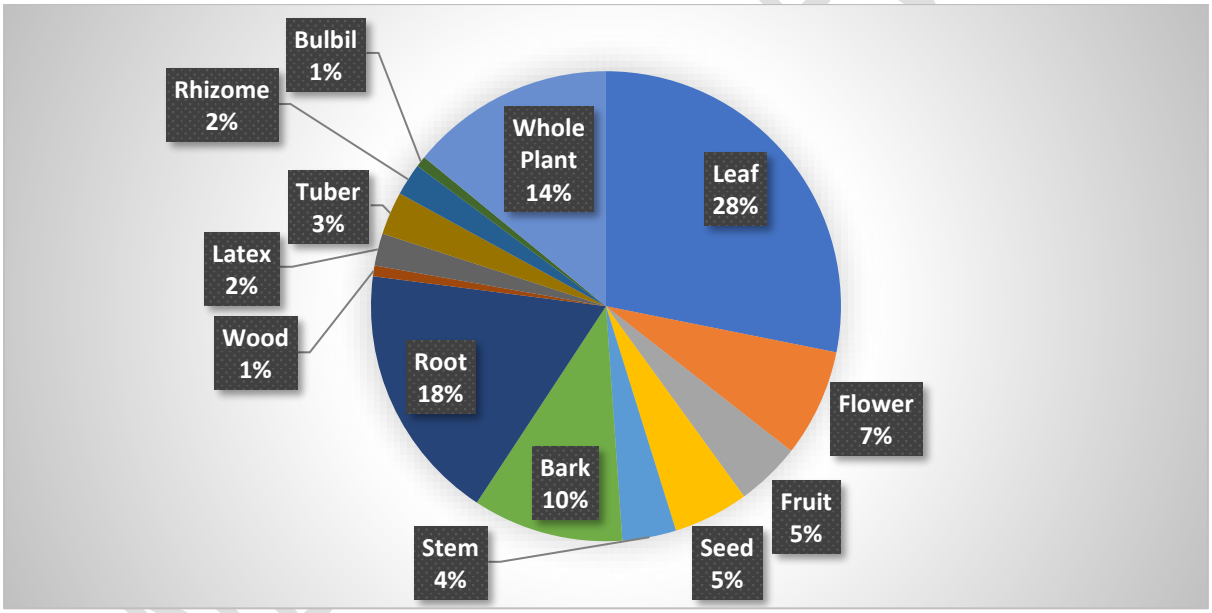

Figure 2: Percentage of parts used to cure different health problems in Rourkela Forest Division

Plants used for other health issues are, *Albizia lebbeck* (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.

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