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Study of medicinal trees in Pandwa block of Palamu District

Deepak Kumar* & Arpana Sinha

University Department of Botany, Dr. Shyama Prasad Mukherjee University, Ranchi, Jharkhand, India

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Abstract- Comprehensive study of medicinal trees has been taken from Pandwa block of district Palamu from where about 45 medicinal trees species which belonged to 24 families are recorded by help of vaidh, native peoples, knowledgeable persons and tribal men that are being used trees parts such as bark, leaves, fruits, stem etc, for the treatment of several diseases viz. malaria, dysentery, anemia, diabetes etc. Koraiya (*Wrightia tinctoria* Roxb.) species is found as a rare species belonged to Apocyanaceae family as well as Palas (*Butea monosperma* L.) is the dominating species that belonged to family Fabaceae and widely used in the treatment of various ailments. Almost 32 tribal communities are belonged to Palamu district as far as people of Pandwa block of the district Palamu are very conscious about treating properties of medicinal trees. Pandwa is prevalent as a major production of minerals and using of great significance of medicinal trees that are crucially helpful for diseases.

Key words: Medicinal trees, Biodiversity, Communities, Betla national park, Minerals

INTRODUCTION

Human beings have been contributed about authentic observation for medicinal trees and they are being contributed authentic observation using treatments of several ailments from immemorial time to modern time. Almost 17000 species of flowering plants have been reported in the country out of them 1000 species are medicinal plants, comprising 540 herbs, 100 shrubs, 200 trees and 160 climber species.¹ Palamu district is recognized as a rich biodiversity, major production of minerals and rich resources of medicinal trees as well as the identification of district has been done due to Betla National Park (BNP), Palamu fort, Bheem chulha and addressing the rich resources of medicinal trees. Palamu district is one of the famous districts of Jharkhand state that is situated in the western part of the state. The district is surrounded in the

north by Bihar, in the south by Latehar, in the east by Chatra and in the west by Garhwa district. The state has 24 districts whereas Palamu is one out of the twenty-four districts of the state Jharkhand.² According to the census of 2011 the total population of Jharkhand is counted 32.9 million (<http://jharkhand.gov.in>)³ which contributes 2.72% population of country with total 79,710 Sq.Km geographical area. The state is reported tribal communities like Santhal (35%), Oraon (18.14%), Munda (14.56%), Ho (9.23%), Khariya (2.14%), Asur and Baiga.⁴ State has been covered 28.82% forest areas as well as country 21.05% of total areas of forest that shared 3.32% total forest areas of country. The average annual rainfall of the district is 1160mm and average annual rainfall of state is 140cm with tropical deciduous forest. The state is located at 651m average elevation of above the sea level.⁵ Medicinal trees are being observed from immemorial to modern time by people of the world in the treatments of various diseases. Biodiversity

*Corresponding author :

Phone : 8969587714

E-mail : deepakkumarchouhan222@gmail.com

is a very crucial portion of our day to day lives and liveliness that is comprised rich resources thereby families, community, nation and future generations depend.⁶ The state Jharkhand is famous as the name of Chotanagpur plateau that is built by the north-eastern part of India.⁷ The state lies between 22°00' and 24°01'N latitude and between 83°15' and 87°01'E longitude while Palamu district is lies between 23°50' and 24°8'N latitude and between 83°55' and 84°30'E longitude.⁸ The district is contained 13 blocks namely Pandwa, Patan, Pandu, Bishrampur, Satbarwa, Lesliganj, Chainpur, Chhatarpur, Hariharganj, Daltonganj, Manatu, Panki and Hussainabad.

MATERIAL & METHODS



Fig. 1- Map representing Pandwa block of Palamu district

Data Collection

This study was conducted during 2021-2022 from the Pandwa block that is located in the western region of Jharkhand. The data were collected from the various villages of Pandwa block namely Kajri, Murma, Rajhara Colliery, Pandwa and Garigaon with the help of vaidyas, tribal men, local people, informants, taxonomical experts, knowledgeable persons and forest dwellers men through personal interview, personal discussion and questionnaires.

Description of Trees

Aegle mermelos Corr. (Bel)

Significance of these trees are in the remedy of Dysentery: Wet bark (5-30g) is extracted from stem, prepared juice by cloth filtration and provided once time in the morning with a spoonful⁹, Sunstroke, Diarrhoea and

Study Area

Pandwa is one of the blocks of district Palamu that is widely bounded by the several number of medicinal trees. It has been famous for Rajhara coal mines and Kathautiya coal mines including Sadabah and Gurgawati river. Pandwa block has 34 villages, 8 panchayat that is covered with the large number of medicinal trees. According to the census 2011 the total population of block is 46,957 out of which 24,330 are males whereas 22,627 are females. The literacy rate is about 65.56% with the male literacy rate is 64.9% and female rate is 44.17%. Pandwa block containing several medicinal trees with major remedies of various diseases thereby medicinal trees have been assumed invaluable by vaidyas, tribal men and people of this block.



Fig. 2- Map representing Jharkhand State

Constipation: From rippen fruits are removed upper layer and seed, extract furthermore fruits pulp containing (10-15ml) water and conferred to patients with five spoonful daily in the morning.

Ailanthus excelsa Roxb. (Ghorkarn)

It is used in the treatments of Fever, Menstruation and Skin diseases: Bark or Root (5-25g) is crushed into powder and given to patients orally with some water, Wound: Dried seed (5-10g) is removed upper scale and powdered into fine powder and imposed on the wound.

Azadirachta indica A. (Neem)

It is used in the treatments of Jaundis and Fever: Leaves (5-10g) are ground, extracted juice and taken two times daily in a day until well, Heat rash & Pimple: Wet bark (10-20g) is boiled with some water obtained juice by

Table 1- List of medicinal trees observed in Pandwa block of Palamu District, Jharkhand, India.

S.No	Botanical Names	Common Names	Family	Part uses
1	<i>Acacia arabica</i> Wild.	Babul	Mimosaceae	Bark, Seed, Gum, Leaves
2	<i>Acacia catechu</i> Wild.	Khair	Fabaceae	Bark, Resin, Leaves
3	<i>Acacia nilotica</i> Wild.	Babul	Fabaceae	Stem, Leaves pod
4	<i>Aegle marmelos</i> Corr.	Bel	Rutaceae	Fruit, Bark
5	<i>Ailanthus excelsa</i> Roxb	Ghorkarn	Simaroubaceae	Bark, Root, Leaves
6	<i>Albizia lebbek</i> Benth.	Siris	Fabaceae	Bark
7	<i>Alstonia scholaris</i> Linn.	Devil tree	Apocynaceae	Bark, Leaves, Root
8	<i>Annona squamosa</i> Linn.	Sarifa	Annonaceae	Bark, Leaves, fruits, Root, Seed
9	<i>Artocarpus heterophyllus</i> Lam.	Kathal	Moraceae	Fruit, Seed
10	<i>Azadirachta indica</i> A.	Neem	Meliaceae	Root, Stem, Leaves, Seed
11	<i>Butea monosperma</i> Linn.	Palas	Fabaceae	Whole part
12	<i>Borassus flabelliformis</i> Roxb.	Tad	Arecaceae	Stem, Fruit
13	<i>Bombax ceiba</i> Linn.	Semal	Malvaceae	Bark
14	<i>Cassia fistula</i> Linn.	Amaltaash	Leguminosae	Bark, Leaves, Root
15	<i>Cordia dichotoma</i> G.Forst.	Lasoda	Boraginaceae	Fruits, Bark, Leaves
16	<i>Dalbergia sissoo</i> Roxb.	Seesam	Fabaceae	Stem, Leaves pod
17	<i>Eucalyptus globulus</i> Labill.	Eucalyptus	Myrtaceae	Leaves
18	<i>Ficus benghalensis</i> Linn.	Bargad	Moraceae	Whole part
19	<i>Ficus glomerata</i> Roxb.	Gular	Moraceae	Whole part
20	<i>Ficus religiosa</i> Linn.	Peepal	Moraceae	Leaves, bark
21	<i>Gmelina arborea</i> Linn.	Gamhar	Lamiaceae	Stem, Leaves
22	<i>Holoptelea integrifolia</i> planch.	Chilbil	Ulmaceae	Whole part
23	<i>Madhuca longifolia</i> J.F macbr.	Mahua	Sapotaceae	Fruit, Bark, Seed, Leaves
24	<i>Mangifera indica</i> Linn.	Aam	Anarcardiaceae	Bark, Fruit
25	<i>Melia azedarach</i> Linn.	Bakain	Meliaceae	Bark, Leaves
26	<i>Moringa oleifera</i> Linn.	Sahjan	Moringaceae	Whole part
27	<i>Neolamarckia cadamb</i> Roxb.	Kadam	Rubiaceae	Bark, Fruit, Leaves
28	<i>Phoenix sylvestris</i> Roxb.	Khajur	Arecaceae	Stem, Fruit, Root
29	<i>Phyllanthus emblica</i> Linn.	Awla	Phyllanthaceae	Fruit, Seed
30	<i>Pongamia pinnata</i> Linn.	Karanj	Leguminosae	Bark, Seed
31	<i>Psidium guajava</i> Linn.	Amrud	Myrtaceae	Fruit, Leaves, Bark
32	<i>Punica granatum</i> Linn.	Anar	Lythraceae	Bark, Leaves, Fruit
33	<i>Sapindus saponaria</i> Linn.	Ritha	Sapindaceae	Fruit
34	<i>Saraca asoca</i> Roxb.	Ashoka	Fabaceae	Bark
35	<i>Shorea robusta</i> Roth.	Saal	Dipterocarpeae	Bark, Fruit, Leaves, Seed, Gum
36	<i>Spondias mangifera</i>	Aamra	Anarcardiaceae	Fruit
37	<i>Syzygium cumini</i> Linn.	Jamun	Myrtaceae	Seed, Fruit, Bark, Leaves
38	<i>Tamarindus indica</i> Linn.	Imli	Fabaceae	Fruit, Bark, Seed
39	<i>Tectona grandis</i> L.f	Teak	Lamiaceae	Bark, Leaves, Flower, Seed
40	<i>Terminalia arjuna</i> Roxb.	Arjun	Combretaceae	Bark
41	<i>Terminalia bellirica</i> Roxb.	Bahera	Combretaceae	Fruit, Seed
42	<i>Terminalia chebula</i> Retz.	Hrar	Combretaceae	Leaves, Fruit, Seed
43	<i>Terminalia elliptica</i> Wild.	Asan	Combretaceae	Bark
44	<i>Wrightia tinctoria</i> Roxb.	Koraiya	Apocynaceae	Bark, Seed
45	<i>Ziziphus mauritima</i> Lam.	Bair	Rhamnaceae	Fruit

cloth filtration and administered orally daily in the morning along with half glass of water, Wound: Dried fruits or seeds (30-50g) are crushed, extracted oil and interpolate on the wound. waste particles are used in the manufacturing of Neem soap, Toothach: Stem is used in the form of tooth brush.¹⁰.

***Bombax ceiba* L. (Semal)**

It is utilized in the remedies of Stomach ache & Dhat syndrome: Dried bark (10-20g) is ground in the form of powder, added 5 ml water and provided to women twice daily in a day with a table spoon, Dysentery: Stem scale (10-20g) is removed from dwarf small semal's tree and

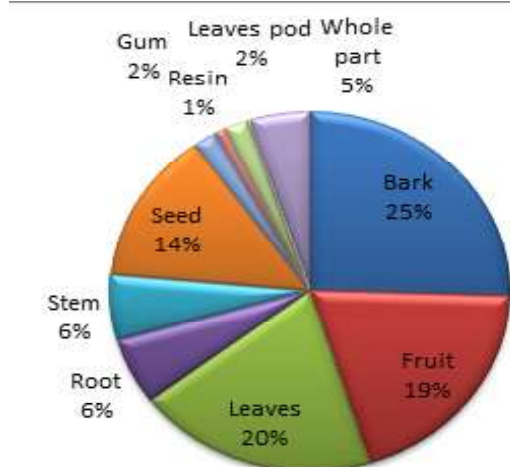


Fig. 3- Showing percentage wise analysis of tree's part

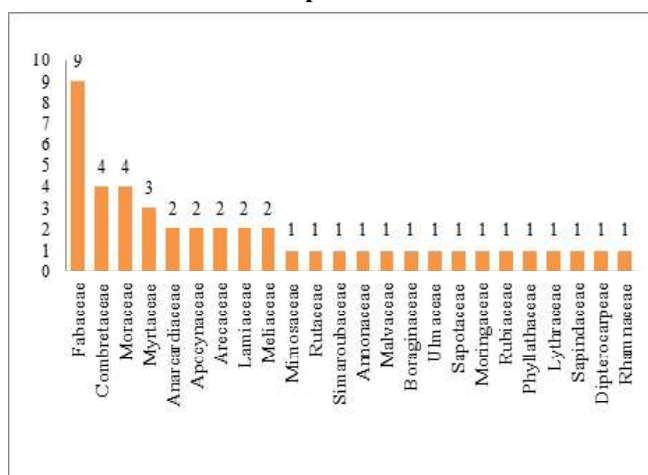


Fig. 4- Graph representing number of genera on the basis of their respective families.

get stem that is ground it into a paste and conferred to patients daily along with a glass of water until well.

***Butea monosperma* L. (Palas)**

It is used in the treatment of Dysentery: Dried seed (10-30g) is crushed, powdered and taken with a glass of water by adding a little amount of powder in the morning, Snakebite: Dried root is powdered and given with a few by adding some water.¹¹ Toothache: Stem is used in the form of toothbrush.

***Eucalyptus globulus* Labill. (Eucalyptus)**

It is used in the treatments of cough: Raw leaves (5-10g) intermingled with a 1 or 2L water further boil and inhaled vapour to patients, Head pain: Green leaves (10-20g) are added a little water and extracted paste by crushing, put on the head in form of massage.

***Mangifera indica* L. (Aam)**

Using of these trees are crucial role in the treatments of several diseases such as Jaundice: Raw bark (10-30g) is crushed into paste and provided to patients with a little water, Anemia: One ripen fruit is taken daily along with a glass of milk till well, Sunstroke & Stomach heat: From the raw fruits (100-200g) seeds are removed, extracted scale afterward dried and ground into fine powder subsequently imparting orally with some water in the morning, Scorpion & Snake bite: Dried inflorescence (10-20g) is ground and obtained powder, adding some water given to patient.¹²

***Moringa oleifera* L. (Sahjan)**

It is used in the remedies of Diabetes & Blood pressure: Dried bark or seed (10-20g) is ground into fine particles given to patients once times daily along with a glass of water until well, Boost immunity: Fruits & Leaves are taken in the form of vegetable, Hypotension: Ground wet leaves (10-25g) and filtered by cloth filtration method as well as given to patient daily twice in a day along with one glass of water.¹³

***Phyllanthus emblica* L. (Awla)**

It is used in the treatments of Anemia: Juice is extracted from (10-20g) of fruits and taken empty stomach till 7 days in the morning as well as its constituents are used as "Triphala in Ayurveda".¹⁴ Gastric & Acidity: A fruit is taken daily in the morning. *Phyllanthus emblica* L. is being used in the form of great medicinal potential, Head cold: Oil is extracted from the dried seed (10-50g) and conferred in the form of massage.

***Pongamia pinnata* L. (Karanch)**

Usage of these trees are several remedies of Skin diseases & Itching: Juice extracted from bark (5-10g) and applied on infected part daily until well. Wound: Oil is obtained by crushing of (5-50g) dried seed afterward put on the wound,¹⁵ Tooth pain & Tooth decay: Wet stem is taken as a tooth brush.

***Psidium guajava* L. (Amrud)**

It is imparted in the treatments of Dysentery: New raw leaves (5-20g) are crushed and extracted juice by cloth filtration method and provided to the patients daily twice in a day, Jaundice & Stomach ache: One fruit is taken each day in the morning.

***Shorea robusta* Gaerin. (Sakhua)**

It is used in the remedies of Stomach ache: Dried bark (10-30g) is powdered, added with a little water and

made round pellets that given daily two pills to patients in the morning, Loose motion: Raw fruits (2-20g) is crushed into the paste and taken to patients along with a glass of water till well, Diarrhoea: Dried gum (5-10g) is ground into fine powder and mixed with some pure curd that imparted to patients daily in the morning.

***Syzygium cumini* L (Jamun)**

It is used in the ailments of Diabetes: Dried seed (5-10g) is ground in the grinding machine into powder and conferred to patients orally in a little quantity along with some water, Gastric: Rippen fruits are taken once time in daily morning, Dysentery: Juice is extracted from (10-20g) of raw bark and imparted two times daily with a spoonful in the morning, Diabetes and Dysentery: Powder is prepared with the help of (5-10g) dried bark by grinding machine and provided to patients daily along with one glass of water.¹⁶

***Terminalia bellirica* Roxb. (Bahera)**

Using of these trees are in the treatments of Respiratory problem, Cough & Sore throat: Extracts powder with (10-100g) upper scale of dried fruits by crushing and intermingled a little amount of water to provide of patients daily in the morning with five tablespoon until well, Immune system:obtained oil from (10-20g) of dried seed and put on in the form of massage.

***Mauritima ziziphus* Lam. (Bair)**

It is used in the form the treatment of stomach ache & Jaundice: Removed seed from (5-50g) ripen fruits, dried uppermost part and ground in to fine particles further added (5ml) water that gets round-tablet to imparted to patients daily in the morning.



Aegle marmelos Cor.,

Psidium guajava L.,

Syzygium cumini L.,

Mangifera indica L.,

Ficus racemosa L.

RESULT & DISCUSSION

Medicinal trees are enhanced curiosity of those people that were being used trees parts for various purposes as far as almost 45 trees species belonging 24 families that are propounded in the table.1 through botanical name, common name, families and part used. The formulation and exploration of trees have expressed in favour of treatment of several diseases by indigenous people, forest dwellers and vaidh. Those are being used underlying own traditional knowledge in order to treatment of numerous diseases with the help of trees parts viz. bark, leaves, flower and seed that are making paste, juice, powder and pellets as well as granted to the patients for treatments of several diseases until cure.

CONCLUSION

The observation of medicinal trees have explored about multidimensional properties, however medicinal

trees have great signifigation thereby indigenous people are being applied of trees parts in the treatment of various diseases namely malaria, diabetes, cough, anemia, dysentery and skin diseases. The families represents Fabaceae (9 genera), Combretaceae (4 genera), Moraceae (4 genera), Myrtaceae (3 genera), Anacardiaceae (2 genera) and more were shown in above Fig. 4. Koraiya (*Wrightia tinctoria* roxb.) was rare species which belongs to Apocynaceae family as well as Palas (*Butea monosperma* L.) was dominating species which belongs to Fabaceae family that is widely used with humongous medicinal values. People were very conscious regarging medicinal trees which are used ancient to modern time for the treatment of diseases.

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REFERENCES

1. **Santhan P. 2020.** A field study on Indian medicinal plants. *Journal of Medicinal Plants Studies*. **8(4)**: 198-205.
2. **Kumari Rajnandani, Anil Kumar and Baidyanath Kumar. 2019.** Ethnobotanical investigation of medicinal plants used by Rural communities of district Chatra, Jharkhand, India. *Journal of Biotechnology and Biochemistry*. **(5)**: 34-49.
3. **Government of Jharkhand 2021.** <http://Jharkhand.gov.in>
4. **Kumari Preeti, S. K. Tiwari and A. K. Chaudhary. 2017.** A case study from the Palamu tiger reserves and Betla National Park, Jharkhand, India. *International Journal of Herbal Medicine*. **5(6)**: 9-13.
5. **Horo Sangita and Salomi Topno.** Ethno studies on wild Leafy Vegetables consumed by "H" tribes of Singhbhum District, Jharkhand, India. *Journal of life Science*. **2(3&4)**: 133-139.
6. **Sharmila S., S. Mownika and E. K. Ramya. 2018.** Survey of medicinal plants in Vellalar college for women campus, Erode, Tamil Nadu, India. *Int. J. Pharma. Science*. 4-13.
7. **Prasad Kalpana. 2015.** Current status of medicinal plants in the Bokaro District of Jharkhand, India. *Internnnational Journal of Scientific and Research*. **(7)**: 2395-4396.
8. **Singh Harish. 2008.** Ethno-medicinal plants of Jharkhand, India. Herbal cures. *Herbal cures*. 248-263.
9. **Ansari Iqbal, S. N. Sharma, R. Kumar and B. K. Pandey. 2016.** Medicinal plant in Jharkhand State: An overvie of current scenario. *Journal of Engineering Science and Research*. 2348-8034.
10. **Maurya Rupesh and Nitin Dongarwar. 2012.** Studies on the medicinal uses of wild trees of Nagpur district, India. *International Journal of Life Science & Pharma Research*. **2**: 0480-2250.
11. **Yadav Rohit Singh, Sonali Sharma, Anil Kumar Pasi and Shubham Patel. 2020.** *Butea monosperma*, plant review with their phytoconstituents and pharmacological applications, Bhopal, MP, India. *Journal of pharmacy and Biological Sciences*. **15**: 18-23.
12. **Bajpai Omesh, Jitendra Pandey and Babu Lal Chaudhary. 2016.** Ethnomedicinal uses of Trees species by Tharu Tribes in the Himalyan Terai Region of India. *Research Journal of Medicinal Plant*. **10(1)**: 19-41.
13. **Tomar J. B., S. K. Bishnoi and K. K Saini. 2012.** Ethno-medicinal formulations used by the tribes of Jharkhand, India. *Int. J. Med. Aroma. Plants*. **2**: 97-105.
14. **Das Anuradha. 2018.** Ethno botanical uses of wild fruits of Santhal praganas, Jharkhand, India. *International Journal of Minor Fruits, Medicinal and Aromatic Plants*. **4(2)**: 31-38.
15. **Raul Manoj and Dipankar Chatterjee. 2021.** Ethno-medicinal usage of plants in a Tribal village of Jharkhand, India. *Journal of Advance Research and Innovative Ideas in Education*. **7**: 2395-4396.
16. **Saini Neha, Huma Rasool, Neha Tiwari and Sandeep Dhyani. 2018.** A study on diversity of medicinal trees in Karwapani forest area of Doon valley, Dehradun, India. *International Journal of Current Advance Research*. **7**: 9765-9768.
