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Diversity of medicinal plants of semariya forest range, Rewa district Madhya Pradesh, India

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Abstract
Plants with medicinal properties are valued globally for their ability to address a broad spectrum of illnesses. Such medicinal plants possess significant potential in treating various conditions. This study focuses on exploring plant diversity for future applications and emphasizes the need for conservation efforts. A plant diversity survey was conducted between July 15, 2023, and March 20, 2024. During this period, medicinal plants identified in the field study were systematically catalogued based on criteria such as botanical name, family, habit and uses methods, supported by previous research findings. The survey revealed a total of 27 species of medicinal plants spanning 15 families, showcasing the rich floristic diversity of the study sites.

Keywords: Diversity, Medicinal Plants, Heterogenous Floristic Composition

Introduction
India is one of the 12 "mega-diverse" nations in the world, with forests covering 23.81% of its total land area. Tribal communities in India share a deep connection with these forests, intertwining their cultural practices, livelihoods, and economies (Banik 2012) [1]. Semariya, or Semaria, is a small town situated in the Rewa district of Madhya Pradesh, approximately 40 kilometers south of the city of Rewa. Geographically, it lies near 24°47′42″ North and 81°9′8″ East. Surrounding Semariya are several forested areas, such as the "Open Mix Jungle," located just 1.9 kilometers northeast, and the Ranipur Wildlife Sanctuary, about 3.7 kilometers away. These natural features highlight the region's blend of wildlife and wooded habitats, making Semariya a town closely tied to nature. The area experiences a tropical wet and dry climate, conducive to supporting a diverse range of vegetation, including medicinal plants. These plants are integral to traditional medicine practices, especially in rural communities, and have long been utilized by humans for healing purposes. Medicinal plants offer significant benefits, including promoting health, generating economic opportunities, ensuring sustainability, aiding conservation efforts, enhancing botanical studies, and maintaining historical records. India stands as a global hub for medicinal and aromatic plant biodiversity, with about 15,000 of its 45,000 plant species recognized for their medicinal properties. Herbal medicines have gained worldwide prominence due to their minimal side effects and significant therapeutic potential. Tribal populations living near forests primarily use these plants to treat various ailments, contributing to a long-standing tradition of natural healthcare. India’s ability to export herbal remedies further underscores their global demand. The distribution of medicinal plants is influenced by genetic factors, environmental conditions such as soil quality, water availability, and temperature, as well as regional geography. This diversity in distribution ensures that India's forests remain an invaluable reservoir of medicinal resources.

Materials and Methods
The field study was carried out during July 15, 2023, to March 20, 2024 in the Semariya forest range, Rewa (M.P.). Methodology covers two types of survey as follows:
1. Field survey- study area, vegetational survey
2. Literature collection

The survey aimed not only to identify and catalog plant species through sample collection but also to gather detailed information about wild and medicinal plants commonly used by the local community. Plants were systematically collected, identified, and documented with details such as botanical names, family classification, habitat and uses methods. All the specimens were collected in duplicate forms and they were deposited in the Department of Botany, Govt. Model Science College, Rewa (M.P.) Descriptions of species and identification were done with the help of Flora of Madhya Pradesh (Verma *et al.* 1993) [2], Flora of Jabalpur (Oommachan and Shrivastava, 1996) [3] and internet sites like "Trees of India" (Mukherjee, 2008) [4] and confirmed with the help of taxonomist.

Results

The plants are organized in the following way, categorized by their botanical name, family, habit, parts used, uses, and methods as outlined in Table 1. Numerous medicinal plants are widely cultivated across the country.

Table 1: Survey of vegetation around in Semariya forest range, Rewa (M.P.)

S. No.	Botanical name	Family	Habit	Part used	Use
1.	*Abrus precatorius* L.	Fabaceae	Shrub	Whole plant	Skin diseases, ulcers, respiratory problems (like asthma and bronchitis), fever, and even malaria.
2.	*Adhatoda zeylanica* Medic.	Acanthaceae	Shrub	Leaves, roots, and flowers	Respiratory issues like cough, asthma, and bronchitis.
3.	*Acanthospermum hispidum* DC.	Asteraceae	Herb	Leaves, stems, and roots,	Malaria, jaundice, stomach issues, and skin conditions.
4.	*Aegle marmelos* (L.) Correa.	Myrtaceae/ rutaceae	Tree	Stem, Leaf, Bark, Fruit, Flower.	Stomach tonic, Piles, Cardiotonic, Antii inflamatory, Jaundice, Urinary trouble.
5.	*Annona squamosa* Linn.	Annonaceae	Tree	Fruits, seed Root, leaves	Constipation, Vomiting, Cough, Purgative, Leaves used to kill lice
6.	*Asparagus racemosus* Willd.	Liliaceae	Shrub	Root	Weakness, Lactation in women, Diuretic, Tonic, Alterative, Antidiarrhoea.
7.	*Azadirachta indica* A. Juss.	Meliaceae	Tree	Whole plant	Skin diseases, Toothache, Antidote, Fever, Wound, Ulcer, Fever, Worms, Cough.
8.	*Barleria cristata* L.	Acanthaceae	Herb	Whole plant	Cough, asthma, and bronchitis, as well as inflammation, urinary infections, and aiding in wound healing.
9.	*Bauhinia purpurea* L.	Fabaceae	Tree	Whole plant	Dropsy, pain, rheumatism, convulsions, and septicemia; flowers/flower buds for dysentery and boils; the bark for asthma, respiratory disorders, diarrhea, and glandular swellings; the root/root bark for hemorrhoids, goiter, and stomach pain; and the leaves for edema and as poultices.
10.	*Butea superba* Roxb.	Fabaceae	Climber	Root	They also take it for diarrhea, painful or difficult urination, and fever.
11.	*Calotropis procera* (Aiton) R.Br.	Asclepiadaceae	Shrub	Leaf/Root	Ringworm, Emetic, Laxative, Joint
12.	*Cassia fistula* Linn	Fabaceae	Tree	Seed/Bark	Antiviral, Tonic, Ringworm
13.	*Cassia tora* Linn	Fabaceae	Herb	Leaf/Seed	Cough, respiratory disease
14.	*Cynodon dactylon* Linn	Cyperaceae	Herb	Leaf	Vomitting, Bleeding, Diuretic, diarrhea, Opthalmia
15.	*Datura metal* L.	Solanaceae	Shrub	leaves, flowers, roots, and seeds	Asthma, coughs, skin diseases, and rheumatic pain
16.	*Emblica officinalis* Gaertn.	Euphorbiaceae	Tree	Fruit	Laxative, Diuretic, Carminative, Digestive, Stomachic, Jaundice
17.	*Euphorbia hirta* Linn	Euphorbiaceae	Herb	Leaf/ Root	Antiasthematic, Cough, Dysentery
18.	*Ficus benghalensis* Linn	Moraceae	Tree	Milky Latex	Asthma, Diabetes, for Pain
19.	*Ficus religiosa* Linn	Moraceae	Tree	Milky Latex	Diarrhoea, Piles, Eye trouble, Mouth ulcer
20.	*Gloriosa superba* L.	Liliaceae	Climber	Tubers, roots, and seeds	Snakebites, and skin conditions
21.	*Jatropha curaus* Linn	Euphorbiaceae	Shrub	Leaf/seed	Piles, Wound healing, Burn, Leucoderma.
22.	*Mangifera indica* Linn.	Anacardiaceae	Tree	Leaf/Flower/ Fruit/Bark	Burn, Antibacterial, Bronchitis, Cough, Ulcer, Skin disease
23.	*Mimosa pudica* L.	Fabaceae	Herb	Whole plant	Allergy, Asthma, Ulcer, Bleeding
24.	*Nerium indicum* Mill.	Apocynaceae	Herb	Leaf	Anthelmintic, Swelling, Skin diseases, Ulcer, Overdose is toxic
25.	*Sida acuta* Burm.f.	Malvaceae	Herb	Leaf/Root	Body Swelling, Burn, Urinary disorder,
26.	*Tephrosia purpurea* (L.) Pers.	Fabaceae	Herb	Whole plant	Diarrhoea, Asthma, Ulcer, Laxative, Blood, Urinary problem, Stimulant, Intestinal
27.	*Tridax procumbens* L.	Asteraceae	Herb	Leaf	Blood clotting, Wound treatment

Based on the field survey of medicinal plants, a total of 27 species belonging to 15 families were documented in the Semariya forest. These species were collected, identified, and systematically listed, as presented in Table-2.

Table 2: Family wise description of medicinal plant

S. No.	Family	Total Number of species	Herb	Shrub	Tree	Climber
1.	Acanthaceae	2	1	1	-	-
2.	Anacardiaceae	1			1	
3.	Annonaceae	1			1	
4.	Apocynaceae	1	1			
5.	Asclepiadaceae	1		1		
6.	Asteraceae	2	2	-	-	-
7.	Cyperaceae	1	1	-	-	-
8.	Euphorbiaceae	3	1	1	1	-
9.	Fabaceae	7	3	1	2	1
10.	Liliaceae	2	-	1	-	1
11.	Malvaceae	1	1	-	-	-
12.	Meliaceae	1	-	-	1	-
13.	Moraceae	2			2	
14.	Myrtaceae	1	-	-	1	-
15.	Solanaceae	1	-	1	-	-

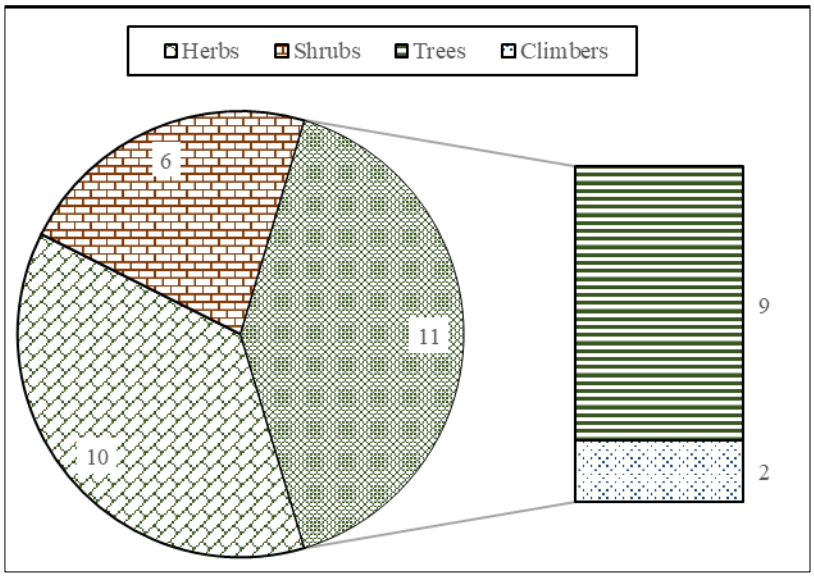

Fig 1: Life form in Semariya forest of Rewa district

Discussion

The data indicates that the majority of medicinal plant species belong to the Fabaceae family, a finding consistent with Tirkey (2006) [5]. Among the 27 documented medicinal plant species, 10 are herbs, 6 are shrubs, 9 are trees, and only 02 are climber. Likewise, Ayyanar and Ignacimuthu (2005) [6] highlighted the medicinal significance of plants in Tamil Nadu. These plant species exhibit antibacterial, insecticidal, antiseptic, and analgesic properties, making them effective in treating various skin diseases, allergic reactions, and diarrhea. Similarly, studies by Jain *et al.* (2006) [7] and Kala (2009) [8] have noted the antihelmintic, anticancerous, antitumor, antirheumatic, antiasthmatic, and antidiarrheal activities of different medicinal plants.

Conclusion

To document the medicinal uses and utility of various plant species in the Semariya forest range of Rewa, a study was conducted, and the collected data was organized into a table. The findings reveal that the study area is home to more than 27 plant species with significant medicinal value.

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