

Medicinal Plants Used by the Vantangiya Tribe of North-Eastern Terai Region, Uttar Pradesh, India

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ABSTRACT

The present study was undertaken to collect information from local tribe Vantangiya about their traditional healers based on medicinal plants and their uses during August 2019-till date. Five villages where the Vantangiya tribal community have been residing since 1922, have been selected for the purpose. The selected villages are Jangal Tinkoniya, Khale Tola, Aambagh, Rajahayi and Chilbilva, located at around 50 Km-70 Km from Gorakhpur city and spread over around 110 hectares. The indigenous knowledge was gathered through interactions and questionnaires with residing tribals and their traditional healers. The study sheds knowledge on around thirty species belonging to different families. The various medicinal plant parts used were bark, flowers, rhizomes, roots, leaves, seeds, gum and sometimes whole plants. These are effective against skin, respiratory, cardiovascular, gastrointestinal, gynaecological disorders, Jaundice, ophthalmic infection, and snakebite etc. Despite urbanisation, the rural folk and the tribal of the district still hold their traditional faith and depend on indigenous plants for their various needs, especially as medicines. Although the Vantangiya tribe has been preserving their traditional knowledge, there is insensitivity among the youngsters for this wealth of knowledge, and the uses of these herbal plants is expected to dwindle in the future. To pass on the expertise of the Vantangiya tribe about these plants and their efficacy in curing diseases, they should be conserved for sustainability of resources to our future generation.

Keywords: Ethnomedicine, Medicinal plants, Pathological disorders, Tribal community, Vantangiya tribe.

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INTRODUCTION

India, is a melting pot of cultures, traditions, and diverse communities. It upholds a rank next to Africa in being an abode to tribal populations. A foremost challenge to the human race is the ever-changing climatic condition, biodiversity loss, and the spotlight on foreign resources, without attention on the rich indigenous natural resources. Communities of the forest areas of India utilise a range of medicinal plants to treat diseases.¹ The word 'tribe' was embraced from the Latin word "*Tribus*" meaning "one-third". There has been an extensive switch within the lives of Indian tribal populations since independence. Massive monetary grants are given for the upliftment of the tribals, although the debate continues whether the communities are getting benefits from the government schemes or not. Their niche lags in educational, social and health sectors, and they occupy the lowest part in economic stratification. The tribal communities in India fall into five territories - i). The Himalayan belt ii). The

Central Indian region iii). The western belt iv). The Central Dravidian region and v). The Andamanese (Lal, 2019).² They reside predominantly in hilly and forested areas, with no proper record of their medical conditions as they dwell far away from basic medical amenities. Yet they use their traditional knowledge of medicinal forests as curative aids and therapeutics. There has been a huge contribution by the researchers in Uttar Pradesh to the importance of forest ethnobotany and plant use by such traditional healers (Dixit and Pandey, 1984; Pandey and Verma, 2002; Singh *et al.*, 2012; Kumar *et al.*, 2013).³⁻⁶ We conducted a survey in Gorakhpur district of the Himalayan belt, lying in the North-Eastern Terai region of Uttar Pradesh.

Vantangiya Tribe

Our focus was on the much-neglected Vantangiya tribe. They encompass people from Myanmar who settled in India during the British rule. Their story foredates to the operation of the earliest train in India in 1853. The Colonial rulers deforested the rich forests in the Terai region for building train coaches, which ultimately led to a vast barren land. Vantangiya tribes were deployed by the colonists from their native Burma region (now Myanmar) to the Terai region in 1922 for the plantation of Sal trees. This tribe derives its name from a Burmese methodology of



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shifting hill cultivation, 'taungya'. Under this practice, the space between the planted trees was utilized for seasonal vegetable and crop farming by the tribals who had no rights on land and led a nomadic life. Vantangiya villages spread throughout Gorakhpur, Maharajganj, Balrampur and the Gonda district of Uttar Pradesh (UP). They are natives of Tinkoniya number three, Ramgarh, Aambagh, Kali tola, Chilbilwa, Ramgarh Sarkar, and Azad Nagar areas in Gorakhpur district of U.P. Their lives were revolutionized in October 2017 when the U.P. Government awarded 23 Vantangiya habitats with the status of 'revenue villages' and acknowledged another 47 habitats under the provisions of the Scheduled Tribe and other Traditional Forest Dwellers Act, 2006. This reform authorized those tribes to be included in the government schemes. As such, they have attained all the rights as a citizen of India. Their regions are being equipped with electricity by solar connections, safe drinking water is now provided by hand pumps and purifiers, and government schemes are providing road connectivity, schools, and ration cards. However, with limited access to allopathic health practices, the Vantangiya people have maintained their ancient medicine practices for the treatment of common diseases as a active therapeutic system.

We report medicinal and wild plants adopted by the Vantangiya tribe to cure fever, cough, skin, and other body disorders. The aim of this study is - i) to enquire about the medicinal plant species used by this tribe; ii) to explore and identify the reported flora; iii) to evaluate plant parts used; and iv) to draw attention towards the conservation of medicinal plants in the study area. Medicinal plants have significant anti-inflammatory, antidiabetic and anticancer properties (Adelowo and Oladeji, 2016).⁷ They easily cure dental sores and systemic diseases and are connected with traditional medicine roots for healing. The investigation, application and preservation of these ethnobotanical assets is the key to reviving traditional knowledge that is quickly becoming lost to future generations (Jain *et al.*, 2010).⁸

MATERIALS AND METHODS

The samples were collected with the help of Vantangiya people and they were identified on the basis of their use in tribal life. The Vantangiya people discussed the preparation and application used for disease treatment in comparison with the allopathic practices.

Study area

The landscape of the Terai region in U.P. is mainly inhabited by humans in a mosaic manner, along with the natural vegetation, comprising of the forest, grasslands, and some semi-natural vegetation. Overtime, a good number of the natural flora has been replaced by agricultural and ethnically important trees. Antiquity reports suggest that many wild plants, including those occupying landscapes dominated by humans, have served various purposes.

With the intensifying human density, the pressure on the plant resources has been increased, leading to rarity and extinction of local species. The Terai region of North-eastern UP is enclosed by fine alluvial soil owing to the presence of a high-water table, due to the existence of several rivers including Gandak and Rapti rivers. These rivers run from northwest to southeast in direction. The study area covers a total distance of 30 km, with the latitude and longitude being 27.1272°N and 83.4467°E respectively. The temperature is variable, with relative humidity between 74%-87%. An extensive record of medicinal plants used by tribes of Balrampur, Gonda and Sonbhadra districts has been previously compiled (Narain and Narain, 1999; Khanna *et al.*, 2002; Singh *et al.*, 2002; Kumar *et al.*, 2003; Singh *et al.*, 2010(a); Singh *et al.*, 2010(b)).⁹⁻¹⁴ This study extends those previous studies to examine the ethnobotanical uses of the Vantangiya people of the Terai region.

Data collection

The basic work plan adapted to carry out this research used field surveys of the related tribal areas. Information was collected from the traditional healers specifically the old aged who had lots of experience about the plant and its use and panchayats related to a checklist of forest villages gathering information about the tribal population and their villages in the district nearby. Some sources of information were also retained through the internet. The extensive survey period was mid- August 2019 to mid-September 2021, with each village visited several times during that period to collect detailed information.

While field surveys various other information such as traditional evaluations, methods of preparation, consumption, self-life, and ethnic importance of plants, and how people use them in their daily life mostly the old age people of the tribal communities were gathered, based on the structural questionnaires followed by talking and discussing among the local informants in their local communication language. Digital pictures of the plants, herbs and shrubs were collected derived from the description and direction of the resource person about the flowering, fruiting, and growth conditions of these plants. Identification of plants was undertaken based on the available literature from the Botanical Herbarium of Deen Dayal Updhyay Gorakhpur University, Gorakhpur.

RESULTS

A total of 30 species occupying different genera and variant families were emphasized by tribal people for use in treating various physical ailments (Table 1). If we consider the number of each family of the different plants, we found that most commonly used medicinal plants belong to family Fabaceae. The most used plant part is leaves, followed by roots, bark and subsequently other plant fragments. The knowledge for how to use these herbal variants is passed from one age group to the next among the

clannish communities by traditional healers or medicinal men present in that community. The care of these traditional plants is taken by medicinal men, being a vital part of the community, by planting the medicinal plants of common use in their home setting, leading to the preservation of their ancient culture.

The medicinal plants used by Vantangiya tribe

Arrangement of plants based on their families; scientific naming followed by vernacular name was done based on fieldwork recording. The description of plant, including which plant part is used traditionally, which diseases they can cure, in what form

Table 1: Demonstration of various herbal and local plants used by Vantangiya tribal community.

Sl. No.	Scientific name	Common name	Family	Plant parts used	Ailments cured
1.	<i>Acacia arabica</i> (Lam.) Willd.	Karijali, Kikar, Babul	Fabaceae	Leaf, Bark	Used for cleaning teeth in order to prevent gum infections.
2.	<i>Aegle marmelos</i> (L.) Correa	Bel	Rutaceae	Leaves, Root, Fruits	Leaves are helpful in fever, Roots to prevent vomiting. Fruit helpful in dysentary.
3.	<i>Andrographis paniculata</i> (Burm. f.) Nees	Chiretta, Kalpanath	Acanthaceae	Whole plant	Paste used in decoction to overcome high fever and some stomach remedies.
4.	<i>Argemone mexicana</i> L.	Siarkanta, Satyanashi	Papaveraceae	Powdered root	Used to cure certain skin infections when powdered root mixed with sugar is applied.
5.	<i>Azadirachta indica</i> A. Juss.	Neem	Meliaceae	Barks and Seeds	Helpful in treating malarial infections and skin diseases.
6.	<i>Bauhinia acuminata</i> L.	Safed kachnar	Fabaceae	Leaves and Bark	Asthma, skin infections and throat troubles are cured by leaves, Gonorrhoea and leprosy are treated by barks in crushed formed.
7.	<i>Bauhinia purpurea</i> L.	Kachnar	Fabaceae	Bark	Helpful in healing wounds and bruises some ulcers.
8.	<i>Bauhinia racemosa</i> Lam.	Katmauli, Gurimal	Fabaceae	Root, Bark, young flower	The extract from plant when consumed with pepper and onion helps in curing of diarrhoea and dysentery.
9.	<i>Bauhinia variegata</i> L.	Kachnar	Fabaceae	Bark	The prepared decoction is beneficial in treating mouth ulcers and also to overcome foot planted disease of cattle.
10.	<i>Butea monosperma</i> (Lam.) Taub.	Palash, Dhak	Fabaceae	Seeds	Helpful in reducing inflammation due to ringworm.
11.	<i>Calatropis gigantea</i> (L.) W. T. Aiton	Madaar, Safed aak	Asclepiadaceae	Milky latex	Helpful in boils and to bring out thron from body.
12.	<i>Cassia fistula</i> Linn.	Amaltas	Leguminosae	Leaves, roots and flowers	Paste of leaf is used in curing ringworm infection along with other skin infections. Roots helpful in reducing fever.
13.	<i>Dalbergia latifolia</i> Roxb.	Shisham, Sitsal	Fabaceae	Leaves	Helpful in treating gonorrhoea.
14.	<i>Ficus religiosa</i> L.	Pipal	Moraceae	Bark juice	Juice is helpful in treating spleen and skin diseases along with liver deformaties.
15.	<i>Ficus racemosa</i> L.	Goolar, Jantu phal	Moraceae	Roots	In order to overcome hydrophobia, dysentary and diabetes.
16.	<i>Ficus rumphii</i> Bl.	Asvatthi	Moraceae	Fruit	Juice consumed along with turmeric, pepper and ghee is used in curing asthma.

Sl. No.	Scientific name	Common name	Family	Plant parts used	Ailments cured
17.	<i>Ficus semicordata</i> Buch. ex J. E. Smith	Khunia	Moraceae	Root	Helps in reduction of visceral obstructions and also some bladder related complaints.
18.	<i>Madhuca latifolia</i> (Roxb.) J.F. Macbr.	Mahua	Sapotaceae	Bark	Helpful in getting rid of itching, cysts, diabetes and ulcers.
19.	<i>Magnolia champaca</i> (L.) Baill. ex Pierre	Champa	Magnoliaceae	Flowers	Crushed flowers are helpful in treating Leprosy.
20.	<i>Morus alba</i> L.	Shahtut, Tuti	Moraceae	Bark, Leaves	Provides in relief from stomach ache, neuralgic pains. Decoction of leaf helpful in providing relief from cold and cough, conjunctivitis, insect bites and wounds.
21.	<i>Moringa oleifera</i> Lam.	Sahjan	Moringaceae	Flowers Gums	Gums are very well used in treatment of asthma, oil in hysteria, night blindness and flowers in cold.
22.	<i>Nyctanthes arbor-tristis</i> L.	Harsingar	Oleaceae	Leaves	Crushed leaf is used in treatment of arthritis, rheumatism, dyspepsia, flatulence.
23.	<i>Phyllanthus emblica</i> Linn.	Amla	Euphorbiaceae	Leaves	Inorder to reduce cough and hairfall.
24.	<i>Polyalthia longifolia</i> (Sonn.) Thwaites	Asoka, Ashok	Annonaceae	Bark	Used in prevention of pyorrhoea, hypotension, different ulcers and also helpful in diabetes.
25.	<i>Ricinus communis</i> L.	Arandi	Euphorbiaceae	Leaves, Flowers, Seeds and roots	Roots: helps in Inflammation pain, ascites and some kind of fever. Leaves: helpful in getting rid of Intestinal worms and earaches along with curing night blindness and skin infections. Flowers: to get rid of vaginal pain while menstruration, to overcome glandular tumors. Seed oil is used laxative also for rhematic swelling.
26.	<i>Saraca asoca</i> (Roxb.) Willd	Sita Ashok	Fabaceae	Bark, Flowers	Helpful in reducing menstrual disorders, diabetes, haemorrhoids and fever.
27.	<i>Senna auriculata</i> (L.) Roxb.	Tarwal, Avartaki	Fabaceae	Roots	Treats the diseases of urinary system mainly helpful in treating problems of excretory system such as constipation.
28.	<i>Shorea robusta</i> Gaertn. f.	Sakhu	Dipterocarpaceae	Resin	Helpful to overcome diarrhoea, Skin infections, dysentery.
29.	<i>Streblus asper</i> Lour.	Sewda	Moraceae	Seeds, Barks, Leaves	Helpful in infections of Filarial worms, diarrhoea and scabies.
30.	<i>Tamarindus indica</i> L.	Imli	Fabaceae	Leaves, Fruits, Dry bark	For treatment of gastric issues. Leaves when applied in paste form cures acne.

these plants are used by the local people, and the procedure of preparation for treatment of ailment for bringing in use is itemized in the table. Generally, the surveyed people well interacted, providing us efficient knowledge and in the sense of their work for the conservation of medicinal plants in local use (Table 1).

Most of the plant species described in this study were collected from natural vegetation (i.e., wild harvest), some specimens were collected from verified plants in personal home gardens. Describing the plant parts used for the medicinal usage, the most frequent were leaves (58%), followed by crushed roots and bark (25%), seed (8%), flower (4%), and then other parts (2%). The differentiation confirmed that most of these plants are highly efficient, especially their leaves by preparing their different decoction or in the crushed form to heal certain diseases (Figure 1).

Methods used by plant healers for using the Natural plant

- Making paste.
- Extracting the Juice in natural form by plant parts.
- Making decoction.
- In powder form by combining with water.
- Applying the raw leaf in that bandage form.

DISCUSSION

This study highlights the role of the Vantangiya tribe and their relation to nature, which involves the usage of conventional plants as folk medicine. There are multiple medicinal plants identified as being used by this tribe for therapeutic purposes. Employing forest trees, weeds, wild crops, and ornamental plants in their traditional medicines is a part of their daily lives. The majority of the herbal plant parts is consumed in the form of dried powder or is eaten raw. Leaves of *Ipomea carnea* Jacq.,

Ricinus communis L. provide instant relief against flatulence and gastrointestinal problems. They have a great belief in the potential of herbal medicine. Establishing *ex-situ* conservation methods would present a solid opportunity for income generation to the tribe. Creating a self-sustaining healthcare system of this remotely placed tribal community can help their indigenous medical practices to spread over urban areas. The ongoing study may be of considerable use to pharmaceutical researchers and medical practitioners in deciphering knowledge on secondary metabolites produced by these plants.

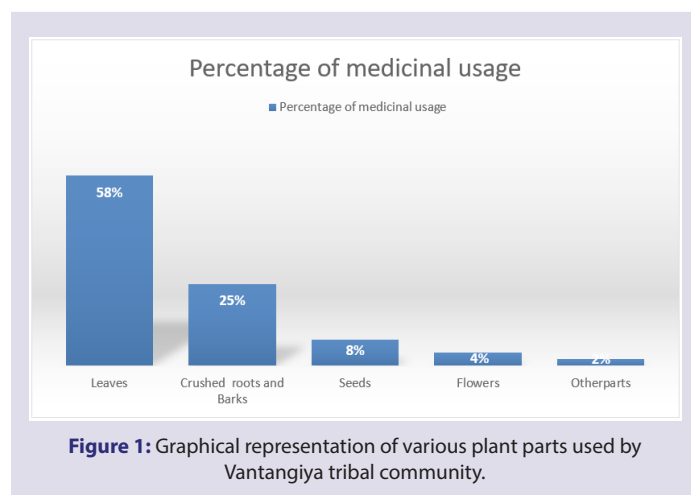
The health of each tribal community is a fascinating dimension of their lifestyle and a representation of their involvement of medicinal plant parts to stay healthful. The conventional ways of treatment through medicinal plants need to be uplifted and recorded. The health status of the tribes is more vulnerable and needs special attention and care. Recurring the use of plants is done to heal stomach aches, diarrhea, jaundice, and toothache. It can arouse interest among the young generation and provide pride in their traditional knowledge. Future studies will focus on the isolation of bioactive compounds aiding in the healing properties of these plants. The Terai region of Uttar Pradesh is home to a wide range of flora utilized by the Vantangiya community. Unfortunately, neither the role of the Vantangiya tribe, nor the traditional plants used by the community, have been documented to date. No record was available for assimilating in-depth studies in this account. Further studies need to be carried out to bridge the gap on the socio-economic status and living conditions of this tribe. There is a need to set them up with the mainstream civilization and provide all the rights of a lawful citizen.

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