

## Ethnomedicinal survey of plants used by tribal in Nrushingnath forest of Bargarh, Odisha, India

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### Abstract

Therapeutic plants from the significant common assets base of the Indian indigenous medicinal services custom. Roughly 10% of the natural constituents of plants are accounted for to be known and staying 90% are yet to be investigated. Because of worldwide prominence of Ayurveda, there is consistent increment popular of homegrown medications in the most recent couple of decades hence applying enormous weight on regular assets. An ethnomedicinal survey was carried in various backwoods pockets of Nrushingnath area of Odisha. In the present paper, attempts have been made to documents the ethnomedicinal plants of the study area. The study reveals that 29 plants belonging to 22 families are identified and documented during the field survey. Out of 29 plant species, 22 are herbs, 1 shrub and 6 climbers. Traditional medicines also have the potential to form the basis of pharmaceutical drugs for the treatment of a range of diseases. It can be concluded that ethnobotanical plants can be used to find out natural products that may serve as the lead for the development of new pharmaceuticals addressing the major remedial needs.

**Keywords:** ayurveda, diseases, ethnobotanical, medicinal, traditionally

### 1. Introduction

Medicinal plants parts are used as a best medicine since ancient times. It is a well-established fact that plants serves an important role to treat various disease and disorders of common people. Medicinal plants products are the precious gift of our motherland for natural healthcare. Tribal communities throughout our country preserve their traditional knowledge into themselves. But their knowledge may useful for common people for better natural healthcare. For this reason search for their secret knowledge towards healthcare is very popular now a days <sup>[1, 3]</sup>.

The tribal people mostly depend on herbal products as medicines. The efficacy of many such herbal medicines has not been listed due to lack of documentation. Hence, the present study was initiated in Nrusinghnath forest of Paikmal block, Bargarh district of Western Odisha in a context where medicinal plants suffer notable disregard

from research and development strategies. The objective of the study was to investigate and document the medicinal plants, and the associated indigenous knowledge in the study area <sup>[4]</sup>.

### 2. Materials and Methods

#### 2.1 Study Area

Nrushingnath at the foot of Gandhamardhan hills of Paikmal block of Bargarh dist. forming streams flowing in cascades down the steep hill side. The total geographical area of Bargarh district is 5837 Sq km., out of which 269.329 Sq km of the area is covered by forest. The area was inhabited by tribes like Bijhanl, Mirdha, Kondh, Gond, Sabar and many more tribe. Although the modern system of medicine spread in people mind, but still they are believing in ethnomedicine.



Fig 1: Map of study area

## 2.2 Field Survey

Various tribal rich area and different ayurvedic hospitals situated in this area were surveyed. Folklore claims and data were documented along with voucher specimens <sup>[4]</sup>.

## 2.3 Data Recording

The detailed information about the plants, dosages, duration, method of preparation, mode of administration, precautions to be taken etc. was recorded. The folklore claims as revealed by the practitioner in colloquial languages were recorded in the tape recorder. Wherever difficulties were encountered in understanding the language, the tapes were replayed before the tribal chief and the correct meaning were translated.

## 2.4 Plant collection and identification

The supportive plant specimens of various skin diseases claims were collected, processed, critically studied and identified. Different Herbaria of Bhubaneswar that held the specimens of earlier workers were visited and checked their identity. Voucher specimens were identified by referring standard local floras <sup>[5, 6]</sup>.

## 3. Result and Discussion

The results of the ethnobotanical survey are presented in table 1. The study revealed 29 plant species belonging to 22 families are documented. Out of 29 plants recorded from study area, highest number of plants belongs to herbs (76%) followed by climber (21%) and shrub (3%) (Fig.2). For each species the following ethnobotanical information were given: botanical name, local name, family, parts used in treatment of diseases and their mode of uses. In this study, Zingiberaceae were the most dominant family followed by Fabaceae, Acanthaceae, Liliaceae, Poaceae and Asclepidaceae (Fig.3). These dominated families were the most commonly used for the treatment of various diseases. Details of the documented plant species in the term of their botanical name, local name, family, parts used in the treatment of various diseases and mode of uses are given in table 1.

The current investigation relates well with another study in Paschim Medinipur area which recorded a sum of 50 ethnomedicinal plant species from 30 families <sup>[7]</sup> and study of ethnomedicinal plants in Dhenkanal district of Odisha which documented a total of 315 plant species belonging to 75 families <sup>[1]</sup> yet is a much lower than the different study from upper Brahmaputra valley of Assam which recorded 86 species under 45 families <sup>[8]</sup>.

**Table 1:** List of ethnomedicinal plants of Nrushinghath forest of Bargarh, Odisha

Sl. No.	Botanical name	Common name	Family	Part use in disease	Mode of use
1	<i>Cymbopogon flexuosus</i> (Nees ex Steud.) Wats.	Dhanwatari	Poaceae	Leaf used in dental problem, skin disease	Leaf powder Twice in a day with warm water
2	<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz	Sarpagandgha	Apocynaceae	Root used against high blood pressure, snake bite	Twice in a day with warm water and milk
3	<i>Andrographis paniculata</i> (Burm.f) Wall.ex. Nees	Bhuin neem	Acanthaceae	Whole plant used to manage diabetic, blood purifier	Once in a day with earthen pot water
4	<i>Gymnema sylvestre</i> (Retz.) R.Br.ex Schult.	Gudmari	Asclepiadaceae	Leaf used against diabetic, malaria jaundice	Twice in a day with warm water
5	<i>Wedlia chinensis</i> (Osbeck) Merr.	Pitabhrungaraj	Asteraceae	Whole part used against skin diseases and worms	Once in a day
6	<i>Adhatoda vasica</i> (L.) Nees	Basanga	Acanthaceae	Leaf used in against acidity, cough, skin diseases.	Twice in a day with honey or water
7	<i>Aloe vera</i> (L.) Burm.f.	Gheekuanri	Liliaceae	Leaf and stem used to cure stomach disorders, pimples, gastric.	Aloe vera juice mixed with black paper and take early morning with empty stomach
8	<i>Uraria picta</i> (Jacq.) Desv.ex DC.	Prishniparni	Fabaceae	Roots used against viral fever.	Twice in a day with honey
9	<i>Argyreia nervosa</i> (Burm.f.) Boj.	Brudhadaraka	Convolvulaceae	Root, seed and leaf used in sexual weakness and stomach problems.	Paste take once in a day with milk or warm water
10	<i>Asparagus racemosus</i> Willd.	Satabari	Liliaceae	Rhizome used against menstrual problem, abortion	Twice in a day with warm water
11	<i>Centella asiatica</i> (L.) Urb.	Thalkudi	Apiaceae	Leaf and flowers used to boost memory and to cure stomach problems	Once in a day
12	<i>Bacopa monnieri</i> (L.) Pennell	Brahmi	Scrophulariaceae	All pars used to manage asthma	Twice in a day with honey and water
13	<i>Paederia foetida</i> L.	Prasaruni	Rubiaceae	Leaf used to relief from waist pain	Paste take once in a day with luke warm water
14	<i>Acorus calamus</i> L.	Bacha	Araceae	Stem used in throat infection	Stem paste take two to three time with honey
15	<i>Kaemferia galanga</i> L.	Gandha sunti	Zingiberaceae	Stem and leaf used against leprosy and skin diseases	Paste take once in a day with warm water
16	<i>Curcuma amada</i> Roxb.	Amada	Zingiberaceae	Rhizome used against stomach disorders	Once in a day with warm water

17	<i>Curcuma caesia</i> Roxb.	Kala haldi	Zingiberaceae	Stem and rhizome used to cure skin disease	Paste take with normal water or curd once in a day
18	<i>Piper longum</i> L.	Bana pipili	Piperaceae	Root and fruit used against cough, cold and asthma	Two to three time with honey for one week
19	<i>Withania somnifera</i> (L.) Dunal	Aswagandha	Solanaceae	Leaf and root used for energy boosting	Once in a day with milk
20	<i>Achyranthes aspera</i> L.	Apamarnga	Amaranthaceae	Seed and leaf used to increase milk secretion in women after delivery	Paste take twice in a day with warm milk
21	<i>Vetiveria zizanioides</i> (L.) Nash	Bena	Poaceae	Root used to cure cough and urinary tract infections	Root paste mixed with black pepper take one to two time with warm water or honey
22	<i>Tragia involucrata</i> L.	Bichhuati	Euphorbiaceae	Stem used against cough, menstrual problem and sleeplessness	Once in a day with warm water
23	<i>Clitoria ternatea</i> L.	Aparajita	Fabaceae	Root and seed used to cure jaundice; hair fall proble	Once in a day with water or milk
24	<i>Tinospora cordifolia</i> (Willd.) Hook.f. & Thoms.	Guduchi	Menispermaceae	Stem, bark and leaf used against jaundice, leprosy and piles	Twice in a day with warm water for 15 days
25	<i>Ocimum basilicum</i> L.	Tulasi	Lamiaceae	Leaf and seed used to cure cold and cough	Once in a day with honey
26	<i>Sida acuta</i> Burm.f.	Bajramuli	Malvaceae	Stem and bark used against diabetes and paralysis	Twice in a day with warm water
27	<i>Hemidesmus indicus</i> (L.) R.Br.	Anantamula	Asclepidaceae	Stem and root used in fever, acidity	Juice takes once in a day with warm water
28	<i>Aerva lanata</i> (L.) Juss.ex. Schultes	Paunsia	Agavaceae	Whole plant used to cure kidney problem, Kidney stone	Twice in a day with milk or warm water
29	<i>Plumbago zeylanica</i> L.	Chitaparu	Plumbaginaceae	Roots used to cure eczema	Paste mixed with curd or honey and takes twice to three times in a day for 15 days

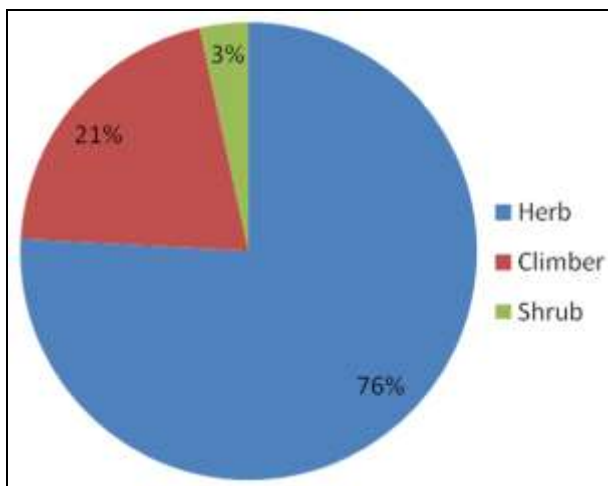


Fig 2: Habit wise analysis of documented plant species

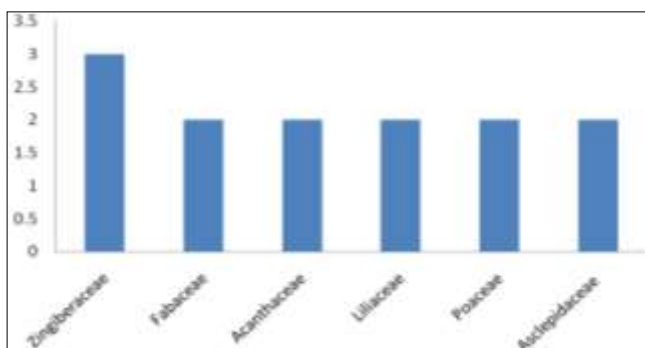


Fig 3: Distribution of dominated families

#### 4. Conclusion

Intensive and extensive ethnobotanical field explorations and interactions with tribal healers, village medicine men, herb sellers and senior knowledgeable persons who practice native phytotherapy in Bargar district of Odisha. It is of

utmost importance to document this information for future generations before wipe out. A comparison of the present survey results with that of published scientific reports indicates that a number of the plant species have validity in their uses in traditional medicine. It is also essential for conservation, cultivation, and sustainable utilization of these important medicinal plant species.

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#### 6. Authors' Contributions

Gyanranjan Mahalik: Conceptualization and designing the research work; Pratyasha Mohanty, Shubhanshee Sanshishta Sahu (Equal contribution): Survey, collection, documentation of field data and manuscript preparation; and Gyanranjan Mahalik, Sagarika Parida, Pratyasha Mohanty, Shubhanshee Sanshishta Sahu, Akshaya Kumar Sahoo: All authors read, reviewed, and approved the final version of the manuscript.

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