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Green Leaves for Diarrhoeal Diseases  
Used by the Tribals of Kenojhar and  
Mayurbhanj District of Orissa, India

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# Green Leaves for Diarrhoeal Diseases Used by the Tribals of Kenojhar and Mayurbhanj District of Orissa, India

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## **Abstract**

The present paper reports with 49 plant species belonging to 30 families, mostly used by the tribal people of Kenojhar and Mayurbhanj district of Orissa. The tribal population of the region primarily depends upon these plants for curing diarrhea. They are enumerated with binomial, family, local name, parts used and ethno medicinal uses. Further studies on chemical and pharmacological actions are suggested to validate the claims.

## **Green Leaves for Diarrhoeal Diseases Used by the Tribals of Kenojhar and Mayurbhanj District of Orissa, India**

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### **Abstract**

The present paper reports with 49 plant species belonging to 30 families, mostly used by the tribal people of Kenojhar and Mayurbhanj district of Orissa. The tribal population of the region primarily depends upon these plants for curing diarrhea. They are enumerated with binomial, family, local name, parts used and ethno medicinal uses. Further studies on chemical and pharmacological actions are suggested to validate the claims.

### **Introduction**

Modern medical facilities are unable to reach the common people not only in this state/country but also the whole world. In Orissa as there is only one hospital for every 3300 sq. km. and one doctor for 2720 people. In such a situation people ordinarily resort to indigenous phytotherapeutic treatment which is known to common people from their ancient' heritage. Such circumstances provoked the authors to carry out a medico-ethno botanical survey of North Orissa (Kenjohar and Mayurbhanj districts), during the year 2002 to 2004 to find out the plants used for treatment of diarrhoeal diseases which exists in the folk lore of rural mass. Diarrhea diseases are of three types: Acute watery diarrhea, (majority of the cases); Dysentery (blood in the stool) and persistent Diarrhea. Diarrhea and other intestinal diseases are the leading causes of child and adult mortality in India. The most unfortunate part is that the percentage of the diarrhea patients is the highest among the people treated for various diseases in the hospitals and Public Health Centers of Orissa as observed in the Annual report of State Health Directorate, 2005 out of the 49 plants reported, 27 species are used for diarrhea, 17 for dysentery and 5 for both the ailments. The plants so reported in this paper, are arranged alphabetically according to the Oriya local names followed by the botanical names, family and mode of administration, which were collected by interviewing the experienced old people and the herbalists of the study area in tribal rich district of Orissa.

### **Materials and Methodology**

A literature survey was carried out on the study area before the field work started (Das and Misra,

1987; Das and Misra, 1988a; Das and Misra, 1988b, Hemadri and Rao, 1989; Hemadri, 1991; Dash, 1994; Das and Misra, 2000 ;Behera, K.K.2006 ). Most of the works were based on taxonomic survey. Very few works were done on ethnobotanical study. The present work is the outcome of extensive survey of different deep forest pockets of tribal villages of Keonjhar and Mayurbhanj district undertaken during 2004-2005 to collect information on the medicinal uses of diarrhea of different plant species. During field work, interviews were conducted with local knowledgeable villagers, the herbal healer called as "Vaidyas" (local physicians in Indian System of indigenous Medicine), old woman and medicinal plant vendors. Plant specimens were collected and identified with local flora (Saxena and Brahmam, 1996). The medicinal value of each plant was enumerated in the following pattern: a) Binomial, b) Family, c) Local name, d) Parts used and e) Ethnomedicinal uses.

## **Study Area**

Keonjhar and Mayurbhanj district is situated in the biotic province, Chhotanagpur Plateau in the northern part of Orissa Keonjhar is located between 21°1'N and 22°10'N Latitude and 85°11' E to 86°22' E Longitude and Mayurbhanj is located 21°16' and 22°34' North Longitudes and between 85°40' and 87°11' East Longitudes., the elevation of the area ranges from 550 m to 670 m. Its spread over an area of 18,658 Sq. Kms. The physiography of the district gives a perfect platform for the tribal in sustaining their ethno-cultural identity. Tribal people are mostly inhabited in the deep forest area, depend on the forest resources for their livelihood (food, fodder and medicine).The study sides predominantly a tribal populated area with 56 % of tribal population . Forest area covers an extent of 66, 17.21 sq.km. About half of the study area of this district is covered by forests of Northern tropical moist deciduous type and contains Sal, Asan, Piasal, etc . The two district has been the homeland of various tribal communities with their sub-tribes, who are found in different level of development depending upon their assimilation with the so called mainstream or modern communities. Anthropologically, its two main tribes, namely the Juangs and the Bhuyans carry a distinct and primitive past. The Juang claim themselves to be the most ancient tribe of the world. In spite of their modern ways of living, many aboriginal practices are still prevalent among them. There were 46 Scheduled Tribes in the district. Out of these the principal tribes were Bathudi, Bhuyan, Bhumij, Gond, HO, Juang, Kharwar, Kisan, Kolha, Kora, Munda, Oraon, Santal, Saora, Sabar and Sounti. These sixteen tribes constituted 96.12 % of the total tribal population of the district. The soil is mostly red throughout area studied and in the South there is a small patch of black cotton soil. The important minerals available in huge quantity in the study area are Iron-ore, Manganese and Chromites. The temperature ranges from 11.7°C during winter and about 37°C- 40°C in summer. The mean annual rainfall is 1805.5 mms . The bulk of the rain is in the month of August to October, while March to May are the driest months. Above all the area is having thick and green forests, extensive grassy lands and meadows, cloud kissing peaks, precipitous and sparkling waterfalls, meandering rivers, roaring tigers and trumpeting tuskers, fleeing deer and flying squirrels, talking myna and dancing peacocks et al including Similipal bioreserve which make a dreamland of Nature in the wilderness and an irresistible destination.

## **Results and Discussion**

The data on medicinal plants, used in diarrhea diseases, which was collected from local inhabitants in Keonjhar and Mayurbhanj district, were analyzed. The enumeration and utilization of these plants are described below.

#### **ENUMERATIONS OF PLANTS:**

1. ***Mangifera indica* L.**

ORIYA NAME: Amba

FAMILY: Anacardiaceae

MODE OF ADMINISTRATION: Aqueous cold extract of tender leaves taken internally to check dysentery. Also bark ground to paste with water and taken twice daily to check diarrhea, effective for both in children and adults.

2. ***Spondias pinnata* (L.f) Kurz**

ORIYA NAME: Ambeda

FAMILY: Anacardiaceae

MODE OF ADMINISTRATION: Stem bark paste (20gm) along with curd was taken twice daily, in empty stomach as a cure for dysentery.

3. ***Oxalis corniculata* L.**

ORIYA NAME: Ambiliti

FAMILY: Oxalidaceae

MODE OF ADMINISTRATION: Raw leaf juice (50ml) taken twice a day for three days as a cure for chronic dysentery and diarrhea.

4. ***Valeriana jatamansi* Jones**

ORIYA NAME: Amrut Jata

FAMILY: Valerianaceae

MODE OF ADMINISTRATION: Leaf juice taken orally with honey, given for internal use to check diarrhea in children.

5. ***Achyranthes aspera* L.**

ORIYA NAME: Apamaranga

FAMILY: Amaranthaceae.

MODE OF ADMINISTRATION: Leaf paste with Gur or jaggery and butter/curd taken twice a day to cure blood dysentery.

6. ***Acacia nilotica* (L.) Willd.**

ORIYA NAME: Babula

FAMILY: Mimosaceae

MODE OF ADMINISTRATION: Leaf macerated with rice water, given for internal use orally to

consume about 50 ml each time, twice daily for 3 to 5 days to cure diarrhea.

**7. *Acorus calamus* L.**

ORIYA NAME: Bacha

FAMILY: Araceae

MODE OF ADMINISTRATION: Decoction of rhizome along with roots of *Angelonia grandiflora* taken twice a day to check diarrhoea.

**8. *Terminalia bellerica* (Gaertn.) Roxb.**

ORIYA NAME: Bahada

FAMILY: Combretaceae

MODE OF ADMINISTRATION: Powder prepared by burning the fruits, taken internally with rock salt in diarrhea.

**9. *Jatropha curcus* L.**

ORIYA NAME: Baigaba (*Dhala jahaji*)

FAMILY: Euphorbiaceae.

MODE OF ADMINISTRATION: Latex from the stem and leaf taken orally along with ripe banana once or twice a day to check dysentery in adults.

**10. *Jatropha gossypifolia* L.**

ORIYA NAME: Baigaba (Nali)

FAMILY: Euphorbiaceae.

MODE OF ADMINISTRATION: Aqueous extract of stem and bark taken orally twice a day to cure blood dysentery.

**11. *Ficus benghalensis* L.**

ORIYA NAME: Bara/Bata

FAMILY: Moraceae.

MODE OF ADMINISTRATION: Extracted Juice from aerial roots (Prop root) taken in empty stomach twice a day to cure dysentery in children.

**12. *Ziziphus mauritiana* Lamk.**

ORIYA NAME: Barakoli

FAMILY: Rhamnaceae

MODE OF ADMINISTRATION: Fruit pulp along with curd, pomegranate (*Punica granatum* L.) juice and til oil taken orally to cure blood dystentery.

**13. *Phyllanthus fraternus* Webster**

ORIYA NAME: Bhuin anla

FAMILY: Euphorbiaceae.

MODE OF ADMINISTRATION: Root paste administered to children (below two years) twice a day for three days in diarrhea.

14. *Ailanthus excelsa* Desf.

ORIYA NAME: Dakhina kabata/Mahala

FAMILY: Simaroubaceae

MODE OF ADMINISTRATION: Bark ground to paste and administered orally along with curd, twice a day for effective remedy in dysentery.

15. *Punica granatum* L.

ORIYA NAME: Dalimba

FAMILY: Punicaceae.

MODE OF ADMINISTRATION: Leaf, bud or unripe fruit is made to paste along with rice washed water and administered orally along with a minute pinch of opium. Half cup taken twice a day to check diarrhea.

16. *Solanum viarum* Dunab

ORIYA NAME: Dengabheji

FAMILY: Solanaceae.

MODE OF ADMINISTRATION: Leaf and root juice taken orally in dysentery twice daily for three days.

17. *Ficus hispida* L.f.

ORIYA NAME: Dimiri

FAMILY: Moraceae.

MODE OF ADMINISTRATION: Latex collected from cut wounds of the stem taken orally to cure blood dysentery/diarrhea.

18. *Datura metel* L.

ORIYA NAME: Dudura

FAMILY: Solanaceae

MODE OF ADMINISTRATION: Seeds are purified by soaking in cow urine for 12 hours. Then the seed coats are removed and cotyledons are boiled in cow milk and made to paste. The product is taken internally to cure chronic or persistent diarrhea and dysentery.

19. *Gmelina arborea* Roxb.

ORIYA NAME: Gambhari

FAMILY: Verbenaceae.

MODE OF ADMINISTRATION: Ripened fruit juice with sugar and pomegranate fruit juice taken

orally to cure dysentery.

20. ***Terminalia chebula* Retz.**

ORIYA NAME: Harida

FAMILY: Combretaceae

MODE OF ADMINISTRATION: Paste prepared from pericarp taken along with curd to cure diarrhoea.

21. ***Kalanchoe pinnata* (Lamk.) Pers.**

ORIYA NAME: Hemakakara/ Amarapoi

FAMILY: Crassulaceae

MODE OF ADMINISTRATION: paste along with three *nigrum* black peppers (*Piper L.*) administered orally twice a day to cure diarrhea.

22. ***Ludwigia perennis* L.**

ORIYA NAME: Jalatandula/Jalajali

FAMILY: Onagraceae.

MODE OF ADMINISTRATION: Leaves along with pomegranate, black berry (*Syzygium cuminii*) and Bela [(*Aegle marmelos* (L) Corr:)] are boiled together. The aqueous extract is taken orally twice a day to cure chronic dysentery.

23. ***Breynia retusa* (Dennst.) Alston**

ORIYA NAME: Jajanga

FAMILY: Euphorbiaceae.

MODE OF ADMINISTRATION: Leaf (young/old) ground to paste and taken orally along with sugar candy three or four times in diarrhea.

24. ***Musa paradisiaca* L.**

ORIYA NAME: Kadali

FAMILY: Musaceae.

MODE OF ADMINISTRATION: Sap from Leaf and seeds administered orally to cure diarrhea.

25. ***Feronia Limonia* (L.) Sw.**

ORIYA NAME: Kaitha

FAMILY: Rutaceae

MODE OF ADMINISTRATION: Unripe fruit paste taken orally twice a day for three days to check diarrhea.

26. ***Amaranthus spinosus* L.**

ORIYA NAME: Kantamarisha



FAMILY: Amaranthaceae.

MODE OF ADMINISTRATION: Aqueous decoction from roots taken two or three times a day to check chronic diarrhea.

**27. *Senna occidentalis* (Syn. *Cassia occidentalis* L.)**

ORIYA NAME: Kasendri

FAMILY: Caesalpiniaceae

MODE OF ADMINISTRATION: Tender leaves boiled with butter milk, made to paste, and mixed with powders of cumin seeds and asafoetida. Pills made from the mixture taken twice a day cumin seeds and asafoetida. Pills made from the mixture taken twice a day to cure diarrhea.

**28. *Diospyrus melanoxylon* Roxb.**

ORIYA NAME: Kendu

FAMILY: Ebenaceae.

MODE OF ADMINISTRATION: Tender Leaf juice taken orally to cure diarrhoea.

**29. *Derris trifoliata* Lour**

ORIYA NAME: Ketia

FAMILY: Fabaceae

MODE OF ADMINISTRATION: Raw Leaf juice taken orally two to three times a day to cure chronic dysentery.

**30. *Phoenix asperulatus* Hutch**

ORIYA NAME: Khajuri

FAMILY: Arecaceae.

MODE OF ADMINISTRATION: Fresh sap (Taddy) extract from the plant taken before the sun rise in diarrhea.

**31. *Strychnos nux-vomica* L.**

ORIYA NAME: Kochila

FAMILY: Loganiaceae.

MODE OF ADMINISTRATION: Bark Macerated with lemon juice, made to pills and taken orally in acute diarrhoea.

**32. *Pavonia odorata* Willd.**

ORIYA NAME: Kurumuli

FAMILY: Malvaceae

MODE OF ADMINISTRATION: Two tea spoonful of leaf juice along with black pepper (*Piper nigrum* L.) administered orally twice a day in empty stomach for dysentery of babies

33. *Mimosa pudica* L.

ORIYA NAME: Lajakuli

FAMILY: Mimosaceae

MODE OF ADMINISTRATION: Roots pounded with water and the liquid paste taken twice a day in diarrhea.

34. *Citrus meidca* L.

ORIYA NAME: Lembu

FAMILY: Rutaceae.

MODE OF ADMINISTRATION: Unripe fruit paste taken orally with a little sugar or sugar candy once a day for three days in diarrhoea.

35. *Lawsonia enermis* L.

ORIYA NAME: Manjuati

FAMILY: Lythraceae.

MODE OF ADMINISTRATION: Roots along with neem leaves, and ginger, made to paste, and taken with boil with water to check diarrhea in babies.

36. *Murraya koenigii* (L.) Sprand.

ORIYA NAME: Mersinga :

FAMILY: Rutaceae.

MODE OF ADMINISTRATION: Decoction of the leaf taken orally to cure dysentery.

37. *Mesua nagassarium* (Burm.f.) Kost.

ORIYA NAME: Nageswar/Nagakedar.

FAMILY: Clusiaceae.

MODE OF ADMINISTRATION: Aqueous extract from the bark taken orally to cure diarrhea.

38. *Azadiraclita indica* A. Juss.

ORIYA NAME: Nimba

FAMILY: Meliaceae

MODE OF ADMINISTRATION: . 2-3 grams of the resin secreted from the stem bark dissolved in rice, water and administered twice a day in to children to check diarrhea.

39. *Erythrina varigata var. orientalis* (L) Merr.

ORIYA NAME: Paladhua

FAMILY: Fabaceae.

MODE OF ADMINISTRATION: Decoction from bark administered orally to cure blood dysentery

40. ***Butea monosperma* (Lamk.) Taub.**

ORIYA NAME: Palasa

FAMILY: Fabaceae.

MODE OF ADMINISTRATION: Raw leaf extract used internally twice a day to cure diarrhea.

41. ***Aerva Lanata* (L.) Juss.**

ORIYA NAME: Paunsia

FAMILY: Amaranthaceae

MODE OF ADMINISTRATION: Roots boiled along with rhizomes of Mutha (*Cyperus rotundus* L.) and Fennel (*Foeniculum vulgare* Gaertn.). The decoction resulted is taken 2-3 times a day to cure diarrhea in children.

42. ***Oroxylum indicum* (L.) Vent.**

ORIYA NAME: Phanaphania

FAMILY: Bignoniaceae

MODE OF ADMINISTRATION: Powdered root bark of lotus is fermented in an air tight vessel for about one month, sieved, filtered and the liquid filtrate is taken orally along with sugar candy or honey thrice a day for 3 days in blood dysentery.

43. ***Allium cepa* L.**

ORIYA NAME: Pijja

FAMILY: Liliaceae.

MODE OF ADMINISTRATION: The bulb is cut vertically, and a little amount of lime (Calcium hydroxide) is inserted through the slit and allowed to remain for 10 minutes. Then it is directly chewed to check blood dysentery.

44. ***Basella rubra* L.**

ORIYA NAME: Poi

FAMILY: Basellaceae.

MODE OF ADMINISTRATION : Leaf juice along with juice from pomegranate seeds taken twice a day to cure diarrhea.

45. ***Manikara zapata* (L.) Royen**

ORIYA NAME: Sapata

FAMILY: Sapotaceae

MODE OF ADMINISTRATION: Unripe fruits to be grounded, paste taken orally thrice a day to check diarrhea.

46. ***Asparagus racemosus* Willd.**

ORIYA NAME: Satamuli/Satabari

FAMILY: Liliaceae.

MODE OF ADMINISTRATION: Boiled milk extract of fresh roots (tubers) taken orally to cure blood dysentery.

47. *Hemidesmus indicus* (L.) R. Sr

ORIYA NAME: Sugandhi

FAMILY: Asclepiadaceae

MODE OF ADMINISTRATION: Root tubers grounded with fennel and the paste taken with gur twice a day for three days to check diarrhea and dysentery.

48. *Tamarindus indica* L.

ORIYA NAME: Tentuli

FAMILY: Caesalpiniaceae.

MODE OF ADMINISTRATION: Tender leaves macerated to paste and taken directly to check dysentery. Also powder made from dried flowers taken orally with sugar in blood dysentery.

49. *Tridax procumbens* L.

ORIYA NAME: Vissalyakarani

FAMILY: Asteraceae

MODE OF ADMINISTRATION: Whole plant made in to paste and taken orally in diarrhea.

The investigations revealed the medicinal plants used in diarrhoea consist of 49 species of 46 genera belonging to 30 families. Euphorbiaceae is the dominant family (4 spp.), followed by Moraceae (3) Rutaceae (3) Solanaceae(2) Fabaceae (2) Verbenaceae (2) Anacardiaceae(2) and others having one each. The use of plant resources as remedies is probably an ancient as man himself. The aforesaid uses are the ones practiced in day-to-day life of tribals living in deep forests. The use of the traditional medicine is widespread in this region with higher percentage of the population relying on it. This is because of lack of modern medical facilities available in this region and the expensive Medicare system which these tribal people are unable to afford.

**Conclusion:**

Traditional healthcare practices of indigenous people pertaining to human health are termed as ethnomedicine. Ethnomedicine is the mother of all other systems of medicine. Recently the importance of these traditional medicines has been realized worldwide as some of them proved to be very effective (Marini-Bettolo, 1980) and some other prescriptions of these traditional healers may be of benefit to human kind when thorough scientific analysis is conducted into their properties. The study revealed that whatever knowledge on plants exists with the people of the study area, they are on fast declining because lack of interest of local youth to learn the traditional knowledge from the old herbal healer. The highly interesting findings require further research, while the efficacy of the various indigenous practices will need to be subjected to pharmacological validation. Therefore,

greater efforts are required to document traditional knowledge of the local people so as to prepare a comprehensive account of it, which will open new vistas in plant research that can fulfill the purposes of conservation and which are eco-friendly to nature.

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