

## Ethno-medicinal Plants Used to Cure Different Diseases by Tribals of Mayurbhanj District of North Orissa

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**ABSTRACT** Mayurbhanj, a hilly district, is rich in ethno medicinal plants. In the present paper 58 plant species belonging to 34 families used in folk medicine have been documented. Due to poor condition of modern healthcare facilities and poverty, indigenous people of the district fully or partially depend on local medicinal plants. An attempt has been made to document traditional knowledge from the baidyas group of Hatikote, Moroda & Rasgovindpur and Udala & Kaptipada blocks of Mayurbhanj district on the treatment of various diseases enumerated.

### INTRODUCTION

Richness of the biodiversity of Similipal sanctuary in Mayurbhanj district is internationally well acknowledged. Out of around 1076 species recorded so far from Similipal Biosphere Reserve, more than 200 species are attributed with medicinal uses (Rout, 2004). Traditionally Baidyas mostly belongs to tribal communities had been using it to cure their ailments. This system of using herbs and different biological active ingredients in treating various diseases had become a part of their culture till recent years. Entrance of market economy gave rise to exploitation of natural resources and thereby depleting our resources base. The most affected part in this process was medicinal plants, which is most sensitive and delicate in the environment of forest.

Orissa state has one of the oldest and richest cultural traditions of using medicinal plants. The rural people of the state still depend on the traditional ethno medicine for their day-to-day primary health care. These medicinal plants gain further importance in the region where modern medical health facilities are either not available

or not easily accessible. Orissa state is geographically divided into five regions i.e. Coastal Orissa, Southern Orissa, Western Orissa, Central Orissa and North Orissa. The North Orissa is bordering to West Bengal and Jharkhand states. Three districts namely Bhadrak, Balasore and Mayurbhanj includes in North Orissa. In Mayurbhanj district tribes occupy a big chunk of the population constituting 52% of it and fifty-three communities both aboriginal and migrated are found in the district glorifying the rich heritage of tribal culture (Naik 1998). Among the tribes the chief ones among them are Santal, Kol, Bhomij, Bhuyan, Bathuri, Kharia, Gonds, Mankdias, Pauri-Bhuyan, Saharias, Mahalis and Sounti. Some of these tribes namely Kharias, Mankdias and Saharas are still in primitive state of living. They depend solely on their surrounding forests for most of their requirements from food to medicines.

Although a number of reports are available on ethnobotany of Mayurbhanj district (Bal 1942; Mudgal and Pal 1980; Pandey et al. 2002; Pandey and Rout 2006; Rout and Pandey 2007; Saxena and Dutta 1975; Saxena et al. 1988 and Yogunarasimhan and Dutta 1972) the detailed study on ethno medicinal plants used to cure different diseases by tribals is lacking. Therefore, this paper deals with an attempt to gather information on some traditional uses of medicinal plants from different blocks of the district to document the medicinal uses of plants to cure the common diseases.

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## MATERIALS AND METHODS

The authors have conducted an extensive field survey in the tribal belts and other interior villages adjoining forest areas in the district to collect ethno botanical lore. First hand information was gathered through interactions with tribal and rural people including members of forest protection committees. Further interaction sessions and workshops were held at Udala and Kaptipada and Rasgovindpur and Moroda blocks of this district where local baidyas were also invited to tap the information of medicinal plants commonly used by these traditional healers by questioners. Medicinal properties of plants were learned through informal interviews. A number of group discussions were also conducted during the period of investigation. To ascertain the uses of these medicinal plants the earlier published scientific literature sources referred to are: Sharma et al. (1985-86), Jain (1991), Kirtikar and Basu (1991), Ambasta et al. (1992) and Chopra et al. (1996).

In the following enumeration, plant names have been arranged alphabetically in disease wise. The correct botanical name is followed by family within parentheses, local name in Oriya, the baidyas group of the block, parts use with their medicinal uses.

## RESULTS AND DISCUSSION

Although our ancient sages through hit and trial method developed herbal medicines, the reported uses of plant species do not certify efficacy (Tarafdar 1986). The present preliminary report on ethnomedicinal uses of some plant species need to pharmacologically screened, chemically analysed and tested for bioactive activities (Chandler et al. 1979 and Fairbairn 1980). Pharmacological screening of plant extracts provides insight to both their therapeutic and toxic properties and helps in eliminating the medicinal plants or practices that may be harmful. The study provides information on 58 plant species belonging to 34 families (Table 1). Fabaceae contributed maximum species. Of the plants species described, 2 species are monocotyledons, 41 are dicotyledons, 9 species are herbs, 9 are shrubs, 23 are trees and 15 are climbers.

The plant parts used for medical preparation were bark, flowers, rhizomes, roots, leaves, seeds,

gum and whole plants. In some cases the whole plant including roots was utilized. The most frequently utilized plant parts were root (24) followed by the leaves, bark (13) each, seeds (7) and whole plant (6).

The paper presents a brief account of the uses of various ethno medicinal plants parts against the diseases like gastro intestinal disorder, skin diseases, gynaecological disorder, skeletal diseases, jaundice, piles, bronchitis, diabetes, neurological diseases, snakebite, ophthalmic infection and cardiovascular diseases by the people of Mayurbhanj district and highlights the need for further investigation on biochemical and pharmaceutical aspects. The largest number of 16 plant species were used to treat gastro-intestinal ailments (constipation, diarrhoea, dysentery, gastric, stomachache), each 10 plant species were used for skin diseases (blood purification, scabies, tumor, itching) and skeletal diseases (pain on limbs, gout, rheumatism, arthritis), 8 plants species each were used for piles and jaundice infection, 6 plant species were used for diabetes and 4 plant species each were treated for gynaecological disorders (gonorrhoea, menstrual problems), respiratory tract infection (bronchitis), snakebite and neurological diseases, 2 plant species each were used for cardiovascular (chest pain) and ophthalmological ailments. Most of the Kaviraj interview were familiar with the species dealing with common ailments like cough, cold, fever and skin diseases.

Some information recorded in the study particularly for *Aristolochia indica* L., *Ficus racemosa* L., *Hygrophila auriculata* K. Schum, *Morinda citrifolia* L., *Pueraria tuberosa* (Roxb. ex Willd.) DC., *Soymida febrifuge* (Roxb.) A. Juss., and *Syzygium cerasoides* (Roxb.) Raizada were found to be either not known or little known, where as *Andrographis paniculata* (Burm.f.) Wall ex Nees, *Asparagus racemosus* Willd., *Hemidesmus indicus* (L.) R.Br., *Holarrhena pubescens* (Buch.-Ham.) Wall ex G-Don. and *Rauvolfia serpentina* (L.) Kurz were found to be used very common by other tribes indicating the authenticity of their usefulness (Saxena et al. 1988 and Sarkar et al. 1999).

The study area is rich in medicinal plant resources. An attempt was made to collect information on the traditional medicinal knowledge present with the local tribes. However, more in depth information may be explored from the tribes residing in the remote blocks of the district. This

**Table 1: Important ethno medicinal Plants of district Mayurbhanj**

Disease/ Botanical name /Family/Local name/Block people	Part used	Mode of administration
<b>1. Gastro Intestinal Diseases</b>		
<i>Aegle marmelos</i> Correa ex Roxb. (Rutaceae) 'Bael', Moroda	Fruit	Ripe fruit pulp is given in the morning twice a day for 2-3 days to improve digestive disorder.
<i>Aristolochia indica</i> L. (Aristolochiaceae), 'Iswarmula', Hatikote.	Root	Decoction of root is given in constipation and abdominal colic.
<i>Asparagus racemosus</i> Willd (Liliaceae), 'Satawari', Moroda, Udala	Tuber stem	Fresh tuber is taken internally twice a day for one week.
<i>Ficus racemosa</i> L. (Moraceae), 'Dimiri', Udala Leaf,		Fresh juice (50-100ml) of leaves is given with water for about 10 days to treat gastro intestinal problems.
<i>Holarrhena pubescens</i> (Buch.-Ham.)Wall ex G-Don. (Apocynaceae), 'Kuluchi', Hatikote, Moroda	Bark	Barks of <i>Holarrhena pubescens</i> and roots of <i>Cardiospermum halicarbium</i> (Sapindaceae) and <i>Solanum torvum</i> (Solanaceae) taken in equal quantities and crushed. A little quantity of salt added to the paste and taken internally twice daily.
<i>Litsea monopetalae</i> (Roxb.) Pers. (Lauraceae), 'Pojo', Hatikote.	Bark	Bark juice is used as drug for intestinal problems.
<i>Melastoma malabathricum</i> L. (Melastomaceae), 'Koroli', Hatikote	Leaf	Leaf decoction with ginger juice is given to cure colic.
<i>Morinda pubescens</i> Sm (Rubiaceae), 'Achu', Hatikote.	Root	Decoction of root (30-40ml) is given in dysentery.
<i>Oroxylum indicum</i> Vent. (Bignoniaceae), 'Phanphena', Moroda	Root	Roots are used to cure stomach trouble.
<i>Pterocarpus marsupium</i> Roxb. (Combretaceae) Piasala, Hatikote	Leaf	Leaf decoction is taken in active stomach pain.
<i>Rauwolfia serpentina</i> (L.)Kurtz (Apocynaceae), 'Patalgaruda', Moroda	Leaf	Juice of tender leaves is given on empty stomach pain.
<i>Shorea robusta</i> Gaertn.f. (Dipterocarpaceae), 'Sal', Hatikote	Seeds	Seeds are powdered and given internally for stomach pain.
<i>Smilax perfoliata</i> Lour. (Smilacaceae), 'Ramdatuni', Hatikote	Root	Roots are boiled in water and this water is given orally with honey to cure gastric problem like indigestion.
<i>Soyimida febrifuge</i> (Roxb.) A. Juss (Meliaceae), 'Ruhini', Hatikote	Bark	Bark juice is very effective in curing dysentery.
<i>Tephrosia purpurea</i> (L.) Pers (Fabaceae), 'Bankultha', Hatikote	Root	Root paste is diluted in water and given to drink to relieve stomachache.
<i>Tragia involucrate</i> L. (Euphorbiaceae), 'Bichhuati', Hatikote	Whole plant	Decoction of whole plant is given twice a day for 7 days to improve digestion and to cure constipation alternated with diarrhoea.
<b>2. Skin Diseases</b>		
<i>Andrographis paniculata</i> (Burm.f.)Wall ex Nees (Acanthaceae), 'Bhuneem', Hatikote	Whole plant	5g of plant powder mixed with one spoonful of honey made in to pills and given orally to cure warts.
<i>Cassia tora</i> L. (Caesalpinaceae), 'Chakunda', Moroda	Leaf	Paste of leaves is applied on skin to cure skin diseases.
<i>Derris indica</i> (Lam.) Bennet (Fabaceae), 'Karonj', Moroda	Seed	Seed oil is applied on affected parts thrice a day for one week.
<i>Ficus religiosa</i> L. (Moraceae), 'Peepal', Moroda	Bark	Bark (50g) crushed with 5 g <i>Curcuma longa</i> powder is applied externally for skin disease.
<i>Hemidesmus indicus</i> (L.)R.Br. (Periocaceae), 'Antamula', Hatikote	Root	Root made into powder, mixed with tea is taken once a day for blood purification.
<i>Holarrhena pubescens</i> (Buch.-Ham.)Wall ex G-Dno. (Apocynaceae), 'Kuluchi', Hatikote	Bark	Bark powder (10g) is applied twice a day for 10 days for acute skin diseases.
<i>Ichnocarpus frutescens</i> (L.) R.Br. (Apocynaceae), 'Dudhilata', Hatikote	Root	Root paste is applied locally to treat scabies.
<i>Melastoma malabathricum</i> L. (Melastomaceae), 'Koroli', Hatikote	Leaf	Leaves are burnt and ash is mixed with coconut oil and applied externally to treat skin diseases and tumors.
<i>Mitragyna parvifolia</i> (Roxb.)Kunth (Rubiaceae), 'Gudikoim', Hatikote	Root	Root paste is applied to cure pimples in children.
<i>Schleichera oleosa</i> (Lou.)Oken. (Sapindaceae), 'Kusum', Hatikote, Udala	Fruit	Fruit paste is used in skin itching.
<b>3. Skeletal Diseases</b>		
<i>Caunaregam spinosa</i> (Thunb.)Tirveng.(Rubiaceae), 'Putua', Hatikote	Root	Roots are boiled in water, bathing in that water is good for rheumatic fever and pain in limbs.
<i>Hemidesmus indicus</i> (L.) R.Br. (Periocaceae), 'Antamula', Hatikote	Root	Roots are crushed and boiled for 10-15 minutes with mustard oil and rubbed gently on body parts affected by gout and joint pain.
<i>Morinda citrifolia</i> L. (Rubiaceae), 'Pindra', Hatikote	Leaf	10-20 ml decoction of leaves is taken thrice a day for 7 days in rheumatic to get relief from joint pain.

Table 1: Contd....

Disease/ Botanical name /Family/Local name/Block people	Part used	Mode of administration
<i>Oroxylum indicum</i> Vent. (Bignoniaceae), 'Phenphena', Moroda	Bark	One teaspoon of stem bark juice is given with a cup of milk twice daily to treat rheumatic pain.
<i>Phaseolus calcaratus</i> Roxb (Fabaceae), 'Banmungo', Hatikote	Whole plant	Decoction of whole plant is given orally to control fever and gout.
<i>Pueraria tuberosa</i> (Roxb ex Willd.) DC (Fabaceae), 'Bhuikakham', Hatikote	Root	Roots are crushed and applied on joints to treat rheumatism.
<i>Schleichera oleosa</i> (Lou.) Oken. (Sapindaceae), 'Kusum', Hatikote	Seed	Seed oil is applied gently on affected portion to cure rheumatism.
<i>Semecarpus anacardium</i> L.f. (Anacardiaceae), 'Bhalla', Hatikote	Seed	Seed oil is applied on affected organ, then massaged with oil of <i>Derris indica</i> twice a day for one month.
<i>Smilax perfoliata</i> Lour. (Smilacaceae), 'Ramdatuni', Hatikote, Moroda.	Root	150g fresh crushed root is boiled with 200ml mustard oil and massaged on affected part twice day for 4-5 days.
<i>Solanum surattense</i> Burm.f. (Solanaceae), 'Bheji-baigan', Moroda	Seed	2-5ml seed oil with ginger juice is given once a day in rheumatic arthritis and also applied externally.
<b>4. Gynaecological Disorders</b>		
<i>Abrus precatorius</i> L. (Fabaceae), 'Kaincha', Moroda	Whole plant	Two spoonful decoction of whole plant is taken orally twice a day for a week to treat gonorrhoea.
<i>Asparagus racemosus</i> Willd (Liliaceae), 'Satawari', Moroda, Udala	Root	Root paste is applied externally on abdomen for quick delivery.
<i>Desmodium heterocarpon</i> (L.) DC. (Fabaceae), 'Salparni', Moroda.	Root	A cup of decoction of root is drunk in the morning for seven days to regulate menstrual cycle.
<i>Ethydra fluctuans</i> Lour. (Asteraceae), 'Hidmicha', Moroda, Udala	Leaf	Half cup of infusion of leaves is drunk as a remedy against gonorrhoea till cure.
5. Jaundice		
<i>Andrographis paniculata</i> (Burm.f.) Wall ex Nees	Whole plant	The whole plant is used as a tonic and fresh juice used to relieve the eye problems and jaundice.
(Acanthaceae), 'Bhuineem', Hatikote, Moroda	plant	The tuber made into paste and taken internally to cure jaundice.
<i>Asparagus racemosus</i> Willd (Liliaceae), 'Satawari', Hatkote, Moroda, Udala	Tuber	Extract of leaves is administered orally against jaundice.
<i>Cassia fistula</i> L. (Caesalpinaceae), 'Sonari', Udala	Leaf	Paste of root as eye drops once a day for three days.
<i>Coccinia grandis</i> (L.) J. Voigt (Cucurbitaceae), 'Bankundri', Moroda	Root	Extract of root is given twice a day as health tonic for liver and general weakness.
<i>Lawsonia inermis</i> L. (Lythraceae), 'Manjuati', Moroda	Root	Extract of root is given in small doses against disorders of lungs and inflammation of liver.
<i>Mimosa himalayana</i> Gamble (Mimosaceae), 'Khirkichi', Hatikote, Udala	Root	Juice of root (10-15ml) is mixed with a glass of lukewarm water and given twice daily for 10 days in chronic liver problems.
<i>Oxystelma secamone</i> (L.) Karst. (Asclepiadaceae), 'Dudhilata', Moroda	Root	About 10g paste of whole plant is given thrice daily for one week for both infective hepatitis and chronic liver problems associated with liver cirrhosis due to alcoholism.
<i>Phyllanthus fraternus</i> Webster (Euphorbiaceae), 'Badiamla', Udala	Whole plant	
<b>6. Piles</b>		
<i>Andrographis paniculata</i> (Burm.f.) Wall ex Nees	Whole plant	A dense paste of young shoots or leaves is prepared with a little amount of water and applied externally in anus in the form of thick round cake in cases of simple piles.
(Acanthaceae), 'Bhuineem', Hatikote, Udala	plant	Shoot paste is applied on affected parts twice a day for one week.
<i>Butea superba</i> Roxb (Fabaceae), 'Naipalaso', Hatikote	Shoots	Root paste is applied on affected parts twice a day for one week.
<i>Curculigo orchioides</i> Gaertn (Amaryllidaceae), 'Talmuli', Hatikote, Udala, Morada	Root	Paste of fresh rhizome with equal amount of sugar candy is given empty stomach with cold Water for 21 days to cure blood setting piles.
<i>Curcuma longa</i> L. (Zingiberaceae), 'Haldi', Moroda	Rhizome	Paste of about 10gm adventitious roots with 3-4 cloves ( <i>Syzygium aromaticum</i> ) is taken with <i>Ficus benghalensis</i> bark juice in empty stomach, twice a day for 3-4 weeks to cure fissure.
<i>Ficus benghalensis</i> L. (Moraceae), 'Boro', Moroda, Hatikote	Bark	

**Table 1: Contd....**

<i>Disease/ Botanical name /Family/Local name/Block people</i>	<i>Part used</i>	<i>Mode of administration</i>
<i>Hemidesmus indicus</i> R. Br. (Asclepiadaceae), 'Antomula', Moroda, Udala <i>Mimosa pudica</i> L. (Mimosaceae), 'Lajkoli', Moroda	Leaf Whole plant Seed	Paste of leaf pulp is applied on piles. Decoction of whole plant is given in bleeding piles.
<i>Terminalia chebula</i> Retz. (Combretaceae), 'Harida', Hatikote, Moroda	Seed	Seed paste is applied on piles to stop bleeding and to get relief from pain.
<b>7. Bronchitis Diseases</b> <i>Abrus precartorius</i> L. (Fabaceae), 'Kaincha', Hatikote	Seed	Seeds are made into powder and given in a small doses to subside pain due to asthma.
<i>Hypophila auriculata</i> K. Schum (Acanthaceae), 'Koilekha', Udala	Leaf	Powdered leaves are taken twice a day for a week against bronchitis, cough and epidemic fever.
<i>Madhuca longifolia</i> var <i>latifolia</i> (Roxb.) Chev. (Sapotaceae), 'Mahula', Hatikote	Flower	Decoction of flowers boiled in water is given twice a day against cold, cough and headache.
<i>Mimosa himalayana</i> Gamble (Mimosaceae), 'Khirkichi', Hatikote	Root	Roots are made into powder mixed with honey in equal quantities and is given one teaspoonful thrice a day for fifteen days against bronchial asthma.
<b>8. Diabetes</b> <i>Madhuca longifolia</i> var <i>latifolia</i> (Roxb.) Chev. (Sapotaceae), 'Mahula', Hatikote <i>Polypathia cerasoides</i> (Roxb.) Bedd. (Annonaceae), 'Champati', Hatikote	Bark, flower Bark	Flower extract mixed with leaf extract of <i>Catharanthus roseus</i> is given one cup twice daily to the diabetic patients. 5-8 g of fresh bark is crushed into paste with two teaspoonfuls of water and filtered to obtain the juice. Two teaspoonfuls of the juice is taken a day for 5-10 days. Water is kept overnight in container made out of the plant and taken in the morning to treat diabetes.
<i>Pterocarpus marsupium</i> Roxb. (Fabaceae), 'Piasala', Hatikote	Bark	One teaspoonful of leaf powder with water is taken daily.
<i>Saraca asoca</i> (Roxb.) De Wilde (Caesalpinaceae), 'Asoka', Udala <i>Syzgium cerasoides</i> (Roxb.) Raizada (Myrtaceae), (Roxb.) 'Poijam', Hatikote, Moroda, Udala <i>Syzgium cumini</i> (L.) Skeels (Myrtaceae), 'Jamu', Hatikote	Leaf Bark Seed	Dried Raizada bark powder is given daily with water. About ½ teaspoon seed powder mixed with honey or gur is taken twice daily for 20-30 days.
<b>9. Neurological Diseases</b> <i>Abrus precartorius</i> L. (Fabaceae), 'Kaincha', Moroda	Whole plant	Leaf made into a paste and then applied locally to cure muscle contusion.
<i>Enhydra fluctuans</i> Lour. (Asteraceae), 'Hidmicha', Moroda, Udala <i>Semecarpus anacardium</i> L. f. (Anacardiaceae), 'Bhalia', Hatikote <i>Stereospermum suaveolens</i> DC. (Bignoniaceae), 'Patoli', Moroda	Leaf Gum Root	Leaf paste prepared with castor oil and applied on paining legs. During body pain the oil is massaged twice a day for one week. Root paste given two times a day for 15-30 days for curing nervous disorders.
<b>10. Snake-bite</b> <i>Aristolochia indica</i> L. (Aristolochiaceae), 'Iswarmula', Hatikote. <i>Calotropis gigantea</i> (L.) R.Br. (Asclepiadaceae), 'Ark', Moroda <i>Rauvolfia serpentina</i> (L.) Kurz (Apocynaceae), 'Patalgaruda', Moroda <i>Ventilago maderaspatana</i> Gaertn. (Rhamnaceae), 'Rakta pichula', Moroda.	Root Leaf Root Bark	Root paste with paste of 7 long pepper is given as antidote to snakebite. Leaf juice mixed with cardamom, mutton and jaggery is given orally as antidote. Root powder is mixed with black pepper and one tea spoonful is taken with a cup of water twice day for two days. The barks are boiled in water for 2 hours and the infusion is given orally in snake bite.
<b>11. Cardiovascular Diseases</b> <i>Terminalia alata</i> Heyne ex Roth (Combretaceae), 'Asan', Hatikote <i>Terminalia chebula</i> Retz. (Combretaceae), 'Harida', Hatikote	Bark Fruit	Bark is boiled in water this water is taken internally, to relieve chest pain One teaspoonful of ground powder of fruit is given internally with warm water once daily before going to bed to cure chest pain.
<b>12. Ophthalmic Diseases</b> <i>Halidima cordifolia</i> (Roxb.) Ridsdale (Rubiaceae), 'Koim', Hatikote <i>Opuntia dillenii</i> Haw (Cactaceae), 'Nagapheni', Moroda	Bark Pulp	Bark extract is applied externally in the affected eyes to cure redness in eye. Decoction of the pulp is applied externally in case of eye diseases.

type of study will give new impetus to the traditional system of healthcare. In view of the importance of traditional medicine which provides health services to 75-80% of the world population, increased demand of herbal drugs by the pharmaceuticals and depleting natural plant resources, it is high time to document the medicinal utility of less known plants available in remote areas of country (Zaidi and Crow 2005).

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