

An Ethnobotanical Survey of Medicinal Plants in Semiliguda of Koraput District, Odisha, India

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Abstract: An ethnobotanical survey in Semiliguda block of Koraput District, Odisha have revealed a wealth of traditional knowledge on medicinal plants and their uses amongst the local Godaba healers. The indigenous knowledge of local traditional healers and the native plants used for medicinal purposes were collected through questionnaire and personal interviews during field trips. The study includes 50 species, most of which appear to be still in everyday use. In this study the most dominant family was Euphorbiaceae and Myrtaceae. An overview of the most important plants and their uses is presented, which shows several interesting records that have hitherto remained undocumented. New records of plants that are locally used viz. *Caryota urens*, *Curcuma montana*, *Cardiospermum helicacabum*, *Sansiveria roxburghiana*, *Atylosia scarabaeoide*, *Argyrea Speciosa*, *Chenopodium ambrosioides*, *Euphorbia tirucalli* L. *Pongamia glabra*, *Sesbania grandiflora*, *Stephania hernandifolia*, *Elephantopus scaber*, *Acorus calamus* L. and *Lawsonia inermis* confirm that the medical ethnobotany of Semiliguda block is incompletely recorded. It can be seen that ethnomedicinal information from traditional healers provides a solid lead towards development of new drugs than random screening. The task that remains is to screen extracts prepared from these plants and perform a bioassay-guided fractionation of the active extracts so as to isolate the active compounds from these plants. The traditional healers are dwindling in number and there is a grave danger of traditional knowledge disappearing soon since the younger generation is not interested to carry on this tradition.

Key words: Ethnobotany • Godaba community • Vaidyas • Semiliguda

INTRODUCTION

Ethnobotany is the study of the interactions and relationships between plants and people over time and space. This includes the uses, knowledge, beliefs, management systems, classification systems and language that both modern and traditional cultures have for plants and their associated terrestrial and aquatic ecosystems. Plants are fundamental to the functioning of all human societies and to the operation of all ecosystems. Along with the photosynthetic bacteria and algae, plants are responsible for the formation of almost all of the energy that we consume. In terms of the energy from biomass that we are so actively seeking to develop now, they also provide the hope for energy supplies in the future. Yet despite of their central importance, plants are often poorly appreciated. There have been several reports

of ethnobotanical surveys in Pakistan [1], Italy [2], Western Nigeria [3, 4], Tanzania [5], China [6], Morocco [8, 9], Mali [10], Trinidad and Tobago [11], Eastern cape province, South Africa [12] of various indigenous populations concerning use of medicinal plants for the management and treatment of diseases. According to the World Health Organization (WHO), almost 65% of the world's population has incorporated the value of plants as a methodology of medicinal agents into their primary modality of health care [13]. It is often noted that 25% of all drugs prescribed today come from plants [14, 15]. This estimate suggests that plant-derived drugs make up a significant segment of natural product based pharmaceuticals.

The goals of using plants as sources of therapeutic agents are, a) to isolate bioactive compounds for direct use as drugs b) to produce bioactive compounds of

novel or known structures as lead compounds for semisynthesis to produce patentable entities of higher activity and/or lower toxicity *c*) to use agents as pharmacologic tools and *d*) to use the whole plant or part of it as a herbal remedy.

Information is very scanty on local medicinal plants and plant parts used traditionally in Semiliguda. This study aims at documenting plants and plant parts used exclusively for the management of various diseases used by traditional healers in targeted area of Semiliguda.

MATERIALS AND METHODS

The Study Area and Ethnobotanical Survey: The District Koraput is popularly known as the land of aboriginals due to their sizeable population which acts as the natural Laboratory for the documentation of traditional knowledge. It is located between 82° 5' East to 83° 13' East longitude and between 18° 13' North to 19° 10' North latitude with an area of 8807 sq. kms. The District is bounded by Nowrangpur District in north, Visakhapatanam District of Andhra Pradesh in south, Rayagada District and Srikakulam District in the east and Malkangiri District and Bastar District of Chattisgarh in the west. The District is the home to as many as 25 different tribal communities like, Paroja, Saora, Bhumia, Godaba, Didayi, Dogaria, Kondha...etc. Semiliguda block (Fig. 1) is situated 22 kms away from the headquarters with a geographical area of about 313. 56 km² [16]. It consists of 16 Panchayats and 85 inhabited villages with a total population of 55,537 under the block [17]. The schedule caste population is 4996 and schedule tribe population is 30, 364. The topography of Semiliguda block consists of undulating surface of high hills and flat river valley. The whole area can be divided into five zones. Each of these zones has different soil type and utilization pattern. Monsoon season starts as early as April and continues up to October. The maximum rainfall occurs during August and September. The total rainfall in 2006 was 2577.0 mm. After the initial survey, Renga panchayat was selected as the study area considering the availability of Godaba tribal herbalists.

Collection of Information: A preliminary survey was conducted in the Semiliguda block of Koraput District to prepare a database about the local Godaba healers in prescribed forms. Then information about the ethno-medicinal uses of plants to treat various diseases was collected by the methods given below from those



Fig. 1: Map of Semiliguda Block showing the location of study area.

healers who were interested to disclose information. Three basic approaches were adopted to study the uses of plants by Godaba communities:

- An interview based approach in which questions related to the uses of plants for different purposes (i.e. medicine, food, fuel, fodder etc.) was recorded with the help of an informant while making visits to the forests for the collection of plant species and their identifications.
- An inventory based approach involving collection of plant specimens and subsequent interviews with informants registering the local names and uses of the plants collected.
- An interactive discussion approach through meetings and discussions held with various stakeholders like, traditional herbal healers (vaidyas), school teachers, social workers and local people to record about the different uses of plants, methods and periods of collection, their conservation strategies and the fate of traditional knowledge systems, etc. The folk lore knowledge about the use of plants for medicinal purposes was also collected.

First a list of villages was prepared on the basis of predominance of Godaba population from the Semiliguda block. A preliminary field survey was carried out in April 2011 to record the tribal herbalists practicing plants as medicine to cure diseases. Subsequently a list of local healers belonging to Godaba tribe was prepared for the collection of information about medicinal plants used by them to treat various diseases. In the first phase of meeting all the Godaba herbalists were contacted and discussed about the programme. In the second phase, those herbalists who agreed to disclose their traditional knowledge were repeatedly interviewed between July 2011 and November 2011 to record the information in

non-standard formats. These Godaba healers were interviewed about the plants that they use for medicinal purpose, the disease for which they use the plants, the parts which they use and the mode of application. Methods used to document the traditional knowledge included interviews, interactions and inventory methods. Informants were chosen with the help of elderly people and school teachers in the study sites. Unstructured interviews were conducted, with the help of local translator. Each informant was interviewed separately so that they could provide independent information. Interviews were conducted in places such as school campus, in front of their houses. Before conducting the interviews, informants were briefed about the aims of the study. Data was collected on plant parts used, preparation methods, form used (fresh/dried), mode of application, as well as identification, collection and utilization. Respondents were asked to state the degree of scarcity of the species and if there were any management and conservation activities taking place in the area.

In addition, observation and in-depth interviews with key informants, such as elderly and traditional healers, formed part of the field research. Regular field trips were made to the selected villages to collect the plants with the help of the Godaba healers. The collected plants were preserved in herbarium for identification. The plants were identified with the help of local experts by following Haien's Flora and submitted in COATS, Koraput. Herbarium of specimens were prepared and deposited in COATS, Koraput.

RESULTS AND DISCUSSION

The results of the ethnobotanical survey are presented in Table 1. The study revealed 50 ethnomedicinal plant species distributed in 46 genera belonging to 34 different families that are frequently used for the treatment of various ailments in Semiliguda block. The medicinal value of each plant was enumerated in the following pattern:

Table 1: Medicinal plants used by traditional healers from Semiliguda block

No	Scientific Name:	Odia Name	Local Name	Family	Description Of Plant	Parts Used	Name Of The Disease	Mode Of Application
1.	<i>Adhatoda vasica</i> Nees	Basanga	Bhotachali	Acanthaceae	A bushy shrub with large minutely pubescent elliptic acuminate leaves with a foetid smell and large white flowers.	Bark	Stomach pain	For stomach pain bark is crushed and taken.
2.	<i>Asparagus racemosus</i>	Satabari	Deobadini	Liliaceae	An erect shrub with woody prickly shoots. Leaves reduced to minute scales. Flowers white, sweet-scented long in very short racemes	Tuber	Joint pain, stomach pain	For joint pain tuber is crushed and applied. For stomach pain tuber is boiled in water and is taken.
3.	<i>Ageratum conyzoides</i>	Pokasungha	Gandhiridala	Compositae	An erect hairy herb with ovate hairy petioled leaves. A very common plant often found as weed in cultivated fields.	Leaf	Scabies	Leaf paste is applied on scabies.
4.	<i>Artocarpus integrifolia</i>	Panasa	Phanas	Moraceae	Large tree with dense elliptic entire leaves, petiolate. Stipules glabrous long sheathing and leaving an annual scar mark after falling. Flowers tepals-2. Large fruit.	Root	Lactation in expectant mother	Fresh root is crushed and taken orally to enhance lactation in expectant mother.
5.	<i>Argemone Mexicana</i>	Agara	Kantakusum	Papaveraceae	A prickly herb with pinnatifid greenish white leaves. Flowers yellow. Capsule long.	Latex	Rheumatic pain, infection of eye	Latex is massaged on body to get relieve of rheumatic pain. Thin liquid is applied on eye for eye infection.
6.	<i>Brassica juncea</i>	Sorisa	Sorsu	Cruciferae	Herb with long petioled compound leaves, often small leaflets along the petiole, glabrous or white hairs near base of plant. Flowers bright yellow, pedicels and calyx spreading, pod somewhat vertically compressed. Seed dark brown.	Seed	Skin disease, cold	For any type of skin disease mustard oil is applied along with turmeric. For cold mustard oil is heated along with garlic and applied in feet, palm and chest.

Table 1: Continue

No	Scientific Name:	Odia Name	Local Name	Family	Description Of Plant	Parts Used	Name Of The Disease	Mode Of Application
7.	<i>Calotropis gigantea</i>	Arakha	Arak	Asclepiadaceae	A stout shrub. Leaves large broad subsessile. Flowers light purple, large in cymes.	Root, Latex	Migrain, Snakebite	In case of migrain the latex is inserted into the vein of the forehead. The root of the plant is taken orally for snakebite
8.	<i>Caryota urens</i>	Salapa	Salpa	Palmaceae	A stout palm with ringed trunk. Leaves pinnate and long. A female flower lies in between two males. Fruit globose.	Root	To get relieved from the effect caused due to intake of salapa in case of pregnant women.	For ladies who have taken salap during pregnancy, to remove the effect of salap, the root of the tree is taken along with bamboo leaf, bark of tamarind tree and bark of champa tree are boiled and given to the patient.
9.	<i>Citrus medica</i>	Lembu	Lembu	Rutaceae	A thorny bush. Flowers often unisexual and pink. Fruit mamillate at the apex.	Fruit	Boil, Vomiting	Forboil, lemonoil is applied. For vomiting lemon juice is taken along with water.
10.	<i>Colocassia esculenta</i>	Saru	Jungle jaba	Araceae	Tubers small. Leaves dark green in colour. Flower in spadix.	Tuber	Boil	The paste of the tuber is applied locally to cure boils.
11.	<i>Curcuma Montana</i>	Sakuta	Haladikastura	Zingiberaceae	A herb with elliptic or oblong leaves. Flowers in dense Spike.	Rhizome	Fever	The rhizome crushed and taken orally
12.	<i>Cassia occidentalis</i>	Kalachakunda	Kalachakunda	Caesalpinaceae	An erect herb with compound leaf. Flowers yellow in axillary and terminal racemes. Pod long, flat.	Leaf	Wound	The paste of the leaf is applied on wounds.
13.	<i>Cardiospermum helicacabum</i>	Phutaphutika	Mandibatha	Sapindaceae	An annual wiry herb with acuminate leaflets. Flowers white. Capsules depressed pyriform and winged at angles.	Tuber	joint pain	For joint pain, tuber is boiled in water, crushed and is applied.
14.	<i>Curcuma longa</i>	Haladi	Haldi	Zingiberaceae	A herb with rhizomatous stem. Leaves usually oblong. Spikes short with peduncle.	Rhizome	Round worm, Skin disease, Snake bite	For children a paste of turmeric and neem is given orally to cure roundworm. For skin diseases paste of turmeric is applied along with mustard oil. Turmeric is also used against snake bite.
15.	<i>Gossypium hirsutum</i>	Kapa	Balukanda	Malvaceae	A coarse, stunted, rounded bush, much branched, yellowish-green, usually covered with dust from the character of the numerous hairs on the shoots, petioles and leaf-veins. Leaves are thin, three lobed, lobes short, triangular, with straight margins. Base rounded, cordate. Balls large, spherical, ovate, cotton white.	Root and fruit	Cough	Root and fruit is crushed together and taken.
16.	<i>Ocimum canum</i>	Banatulsi	Banatulasi	Labiatae	Erect slender herb. Stems densely pubescent. Leaves elliptical, entire with slender petiole. Flowers in a whorl in terminal racemes.	Leaf	Migraine	For migrain, leaf of <i>Ocimum canum</i> is crushed along with garlic and applied along with oil.

Table 1: Continue

No	Scientific Name:	Odia Name	Local Name	Family	Description Of Plant	Parts Used	Name Of The Disease	Mode Of Application
17.	<i>Ricinus communis</i>	Jada	Jada	Euphorbiaceae	A tall stout shrub with large palmately lobed serrate leaves. Flowers in terminal racemes, monoecious. Fruits large with red seeds.	Seed	Pain in hands, legs and head	The oil extracted from seeds is locally applied in hand, legs and head to get relieved from pain.
18.	<i>Sansiveria roxiburghiana</i>	Sapua	Sapua	Liliaceae	An erect fleshy herb with tufted leaves. Leaves are broad, linear, flat but convex on lower surface. Flowers in clusters.	Juice	Burns	Fresh leaf juice is used externally to cure burns.
19.	<i>Solanum xanthospermum</i>	Bhejri	Bhejri	Solanaceae	A diffuse herb, sometimes woody at the base with sharp prickles. Leaves bright green with scattered stellate hairs and deeply lobed. Flowers deep blue in extra-axillary cymes.	Fruit	Toothache	The fruit is burned and the smoke is taken to get relieved of toothache.
20.	<i>Tamarindus indica</i>	Tentuli	Suparamarin	Caesalpinaceae	A large tree with pinnately compound leaves, leaflets small, red and yellow flowers. Pod curved and thick with thick pulpy mesocarp.	Fruit, tender leaf	Constipation, Round worm	The fruit is boiled in water and taken orally to cure constipation. For round worm tender leaves are crushed and given to children.
21.	<i>Mirabilis jalapa</i>	Banaphula	Dhobamalati	Nyctaginaceae	A herb with large tuberous root, fleshy stems and cordate leaves. Flowers with different colour	Tuberous root	Fever, Stomach pain	For fever and stomach pain the tuber is grounded and taken.
22.	<i>Nerium odorum</i>	Karabira	Golapiphula	Apocynaceae	A beautiful shrub with narrow leaves tapering each end. Flowers usually rose or white, fragrant, in terminal cymes.	Bark	Blood in stool.	The bark of <i>Nerium odorum</i> and <i>Eugenia jambolana</i> is taken to cure blood in stool.
23.	<i>Plumeria rubra</i>	Katha Champa	Nisanaphula	Apocynaceae	Small tree with thick branches. Leaves alternate large, entire. Flowers showy in terminal cymes.	Bark, Flower	Cold and Cough	The decoction of bark is taken against Cold and Cough. For cough twenty one flowers are grounded with burnt ginger, garlic and onion and taken orally.
24.	<i>Zingiber officinales</i>	Ada	Ada	Zingiberaceae	Underground rhizomatous stem with erect leafy shoots. Leaves narrow, sub-sessile. Flowers greenish with a small dark purple lip.	Rhizome	Cold and cough	Rhizome is burnt and grounded with five to ten seeds of black pepper taken orally to cure cold and cough
25.	<i>Punicum granatum</i>	Dalimba	Dalim	Onagraceae	A large shrub with entire leaves. Flowers large with thick fleshy, at first spherical, finally flask shaped hypanthium. Fruit a globose berry.	tender fruit	Dysentery	Tender fruit is grounded and taken orally for dysentery.
26.	<i>Atylosia scarabaeoides</i>	Banakolatha	Banakolatha	Papilionaceae	A branched herb with slender twinning branches, small strongly nerved leaflets. Flowers small yellow or reddish.	Root	Fids	For fids root is grounded and taken orally and the root is also tied in hand.
27.	<i>Argyrea Speciosa</i>	Brudhजारak	Motapatra	Convolvulaceae	A stout climber with woody stems. Leaves beautifully white silvery silky beneath. Flowers white outside, bright purple or rose within. Bracts deciduous.	Root	Weakness	The root is grinded and taken to cure general

Table 1: Continue

No	Scientific Name:	Odia Name	Local Name	Family	Description Of Plant	Parts Used	Name Of The Disease	Mode Of Application
28.	<i>Curcuma aromatica</i>	Banahaladi	Banahaladi	Zingiberaceae	A herb with tuberous root. Lower mature leaves ovate and upper ell-oblong. Flowers, corolla white.	Tuber	Burning of stomach	The tuber is grounded and taken for burning of stomach.
29.	<i>Chenopodium ambrosioides</i>	Kandriphala	Drustibhota	Chenopodiaceae	An erect herb, whole plant with a strong subaromatic, semipungent smell due to the glands. Leaves oblong, obtuse. Flowers innumerable, minute, green subsessile.	Stem	To get rid of evil spirit	The stem is grounded and taken.
30.	<i>Euphorbia tirucalli</i> L	Khadisiju	Sanajilledi	Euphorbiaceae	A small tree with small linear-oblong leaves. Involucres clustered in the forks of the branchlets, shortly pedicelled, mostly female.	Leaf	Waist pain	For waist pain, first Karanj oil is applied in waist then the leaf of <i>Euphorbia tirucalli</i> is heated and applied in that place.
31.	<i>Moringa oleifera</i>	Sajana	Mungna	Moringaceae	A small tree with pinnately compound leaves, small elliptic or ovate leaflets. Flowers white, bisexual. Fruit pod like, long.	Leaf	Cold	The leaf juice is taken to cure cold.
32.	<i>Pongamia glabra</i>	Karanja	Karanjimarini	Papilionaceae	A large tree with compound leaves, shining oblong leaflets. Flowers lilac in simple peduncled axillary racemes. Pod woody glabrous and single seeded.	Seed(oil)	Mosquito bite, Cold	For cold the oil extracted from seed applied. For mosquito bite also the oil is used.
33.	<i>Bombax malabaricum</i>	Simli	Simli	Malvaceae	A large tree with a prickly trunk, leaves alternate. Large scarlet flowers, which mostly appears when the tree is leafless, Calyx leathery, capsular.	Root, bark	Diarrhoea, Leprosy	For diarrhoea, the bark is crushed and is given. For leprosy the root is grounded and is given along with juice of sour orange.
34.	<i>Sesbania grandiflora</i>	Agasti	Agasti	Papilionaceae	A small tree with straight stem and spreading branches. Leaves long with 10-20 leaflets. Flowers very large, long, white. Pod long, slender and curved.	Fruit, Leaf	Fever, Night blindness	Fruit paste is used to cure fever. Cooked leaf is taken as a vegetable against night blindness.
35.	<i>Stephania hernandifolia</i>	Akanabindhi	Sathimala	Menispermaceae	A slender climber with peltate leaves. Flowers small in compound umbels.	Root	Fever, Diarrhoea	For fever root is used. For diarrhoea root is grounded and taken orally.
36.	<i>Elephantopus scaber</i>	Mayurachulia	Drustidala	Asteraceae	An erect herb with obovate radical leaves and slender dichotomously branched hairy stems. Fruit long, brown, ribbed, hairy.	Stem	Fever	Stem is made into paste and is given for fever.
37.	<i>Nicotiana tabacum</i> L.	Dhuanpatra	Dhungia	Solanaceae	An erect herb. Flowers reddish. Fruit capsular.	Leaf	Snake bite	In snake bite dhungia leaf is taken, so that poison does not spread.

Table 1: Continue

No	Scientific Name:	Odia Name	Local Name	Family	Description Of Plant	Parts Used	Name Of The Disease	Mode Of Application
38.	<i>Eucalyptus globules</i>	Nilgiri	Nilgiri	Myrtaceae	A tall tree with smooth greyish or bluish-white bark. Leaves thick and alternate. Flowers large, axillary and solitary. Fruit large and hemispheric.	Leaf	Constipation, Bird lice	Leaf juice is taken for constipation. When a person is affected by bird lice, the paste of Nilgiri leaf is applied.
39.	<i>Eugenia jambolana Lam.</i>	Jamokoli	Jamkoli	Myrtaceae	A large tree with elliptic-oblong and shining leaves. Flowers white, sessile. Hypanthium long. Sepals 0, rarely small. Petals calyptrate.	Bark	Blood dysentery	Bark of <i>Eugenia jambolana</i> along with the bark of <i>Nerium odorum</i> is used for blood dysentery.
40.	<i>Psidium guajava</i>	Pijuli	Jamba	Myrtaceae	A large shrub with opposite, entire leaves. Pretty white flowers. Fruit with very hard seeds.	Bark, Fruit	Dysentery, Blood dysentery	For dysentery tender fruit is taken orally. Bark of guava along with the bark of <i>Mangifera indica</i> is crushed and taken for blood dysentery.
41.	<i>Amaranthus tricolor</i>	Lalkhada	Bhaji	Amaranthaceae	Annual herb with alternate leaves, red small monosexual flowers. Stamens free, anthers bi-celled. Ovary compressed. Style short or 0.	Leaf	Anaemia	The leaf is used as vegetable against anaemia.
42.	<i>Phyllanthus emblica</i>	Aonla	Aonla	Euphorbiaceae	A moderate sized tree greenish-grey or red bark. Small compoundly pinnate leaves. Flowers yellowish on new shoots. Fruit globose, succulent, yellow or pink when ripe.	Fruit	Indigestion	The powder of the fruit helps to cure indigestion.
43.	<i>Mimosa pudica</i>	Lajakoli	Lajdal	Mimosaceae	A well known small under shrub with weak-prickly stems and compound spreading long-petioled leaves. Leaflets linear, long. Peduncles with pretty pink heads of flowers. Pod with weak prickles.	Root	Tooth pain, Snake bite	The root is chewed orally to get rid of tooth pain. Root paste along with raw rice water is given against snake bite.
44.	<i>Momordica charantia</i>	Kalara	Karla	Cucurbitaceae	A soft, hairy slender climber with 5-7 fid leaves. Flowers yellow, petals obovate, spreading. Fruit ovoid tapering both ends, ribbed and covered with tubercles, yellow when ripe.	Leaf	Earache, Ringworm	In case of earache, leaf juice is poured into ear. The leaf paste is also applied externally to cure ringworm.
45.	<i>Carica papaya</i>	Amrutabhandha	Amrut	Passifloraceae	A well known small tree with very large palmately lobed leaves. Sepals and petals in alternating whorls. Flowers greenish-white or white. Fruit one celled.	Fruit	Lactation	For lactation in mother, the fruit is cooked and given in diet.
46.	<i>Datura stramonium</i>	Dadura	Dadura	Solanaceae	A shrub with elliptic or ovate leaves. Flowers long, suberect, white or purple. Capsule ovoid, erect, prickly, splitting regularly at the top into four halves. Seeds black minutely dotted.	Flowers and leaves.	Asthma	The flowers and young leaves are rolled and sundried. They are used as cigars to take the smoke to cure asthma.

Table 1: Continue

No	Scientific Name:	Odia Name	Local Name	Family	Description Of Plant	Parts Used	Name Of The Disease	Mode Of Application
47.	<i>Lawsonia inermis</i>	Manjuati	Manjuati	Lythraceae	A large shrub with often thorny branches. Leaves opposite. Flowers small in terminal paniced cymes. Fruits dry: seeds many, smooth.	Root	Jaundice	The root is crushed and taken with water of raw rice to cure jaundice.
48.	<i>Mangifera indica</i>	Aamba	Aam	Anacardiaceae	Trees with flowers in terminal panicles. Fruit, drupe large with fleshy and fibrous mesocarp.	Bark, Kernel	Diarrhoea, Bleeding of nose	The bark of mango along with the bark of <i>Psidium guava</i> is crushed together and taken to cure diarrhoea. The juice of mango kernel is poured into nose to stop bleeding in nose.
49.	<i>Allium cepa</i>	Piaja	Piaj	Liliaceae	Usually a pungent smelling herb with tunicate bulbs. Leaves mostly narrow and flat. Flowers greenish-white in umbels.	Bulb	Cough and cold	Burned onion and ginger is taken along with flower of <i>Plumeria rubra</i> to cure cough and cold
50.	<i>Acorus calamus L.</i>	Bacha	Bacha	Araceae	A herb with long leaves. Flowers light green.	Root	Dumb	The root is given to children who are unable to speak.

Table 2: list of herbalists consulted.

S. No.	Name of the Herbalist	Sex	Age	Village	Caste
1	Safadi Gheau	Male	62	Malidusra	Godaba
2	Dhana mundagadia	Male	47	Bhitradsura	Godaba
3	Dhanu Khora	Male	30	Ambaguda	Godaba
4	Kamulu Mundagadia	Male	65	Ambaguda	Godaba
5	Garu Majhi	Male	45	Ambaguda	Godaba
6	Danu Mundagadia	Male	40	Ambaguda	Godaba
7	Sadu Khora	Male	62	Pandriguda	Godaba
8	Sakia Bingu	Male	50	Kumarlokija	Godaba
9	Gola Mundagadia	Male	48	Jhankarguda	Godaba
10	Chaitu	Male	43	Kumarlokija	Godaba
11	Sinu Masadi	Male	57	Llokija	Dora
12	Ghasi Khora	Male	55	Gunthaguda	Gouda
13	Sabi Guntha	Female	50	Gunthaguda	Rutia
14	Daitati Guntha	Male	60	Gunthaguda	Rutia
15	Pratab	Male	50	Kokriguda	Roraja

a) Scientific name, b) Odia name, c) Local name, d) Family, e) Parts used and f) mode of application. Traditional healers are using these plants to cure diseases related to stomach ache, joint pain, scabies, lactation, rheumatism, infections, dysentery, diarrhoea, bleeding of nose, skin disease, migraine, snake bites, boils vomiting, fever, skin problems, cold & cough, toothache, stomach ache, wounds, burns, constipation, roundworms, fids, weakness, leprosy, night blindness, blood dysentery, indigestion, diabetes, asthma, jaundice and dumb (Fig. 2 and 3).

Herbs (38% species) were found to be the most used plants followed by trees (28% species), shrubs (28% species) and climbers (6% species) in descending order (Fig. 4). In this study, members of the family Zingiberaceae were the most commonly used plants for the treatment of various diseases. Other families were, Liliaceae (three species), while Solanaceae, Araceae, Caesalpinaceae and Papilionaceae had two species each.

Local traditional healers are commonly using the following plants to treat more number of diseases. They are: *Acorus calamus*, *Ageratum conyzoides*, *Atylosia scarabaeoides*, *Calotropis gigantic*, *Caryota urens*, *Colocassia esculenta*, *Cardiospermum helicacabum*, *Curcuma aromatic*, *Euphorbia tirucalli* L. *Eugenia jambolana* Lam, *Ocimum canum*, *Ricinus tirucalli* L. *Eugenia jambolana* Lam, *Ocimum canum*, *Ricinus communis*, *Mirabilis jalapa*, *Nerium odorum*, *Nicotiana tabacum* L. *Plumeria rubra*, *Punicum granatum*, *Pongamia glabra*, *Sesbania grandiflora*, *Stephania hermandifolia*, *Lawsonia inermis*, *Zingiber officinales*. Preference for their use may be related to their availability.

Different parts of medicinal plants were used as medicine by the local traditional healers. Among the different plant parts, the leaves were most frequently used for the treatment of diseases followed by whole plant parts, fruit, stem, root, bark, seed, flower and latex. The methods of preparation (Fig. 5) fall into five

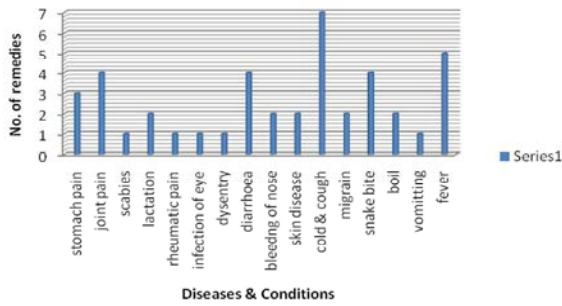


Fig. 2: No. of remedies for various ailments.

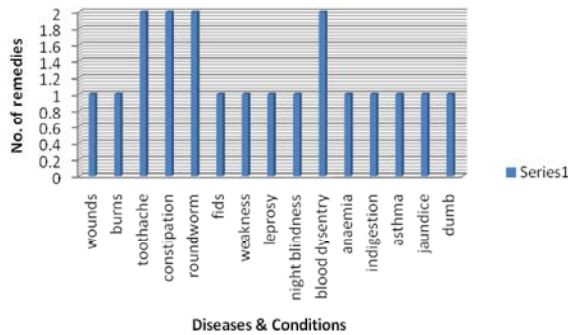


Fig. 3: Number of remedies for various ailments.

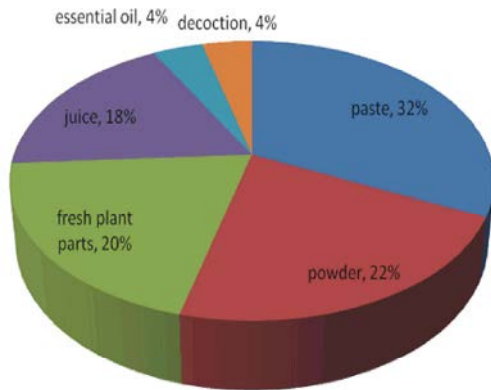


Fig. 4: Habit.

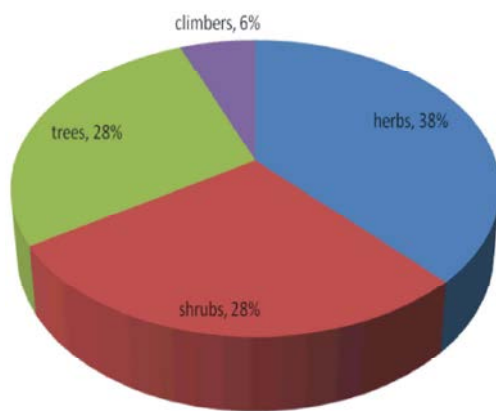


Fig. 5: Method of preparation.

categories, viz. plant parts applied as a paste (32%), powder made from dried plant parts (22%), some fresh plant parts (20%), juice extracted from the fresh plant parts (18%), essential oil (4%) and decoction (4%). External applications (mostly for skin diseases, snake bites and wounds) and internal consumption of the preparations were involved in the treatment of diseases.

Medicines to treat problems of cold & cough, fever, joint pain, diarrhoea, snake bite, stomach pain, dysentery, lactation, bleeding of nose, skin disease, migraine, blood dysentery, boils, toothache, constipation and roundworms have a high frequency. It is interesting to note that a mixture of different plants is often used.

There are also several interesting new uses that were recorded for well-known medicinal plants. Noteworthy examples are:

- To remove the effect of salap, the root of *Caryota urens* along with bamboo leaf, bark of tamarind tree and bark of champa tree are boiled and given to the patient.
- For children a paste of turmeric and neem is given orally to cure round worm. For skin diseases paste of turmeric is applied along with mustard oil. Turmeric is also used against snake bite.
- For migrain, leaf of *Ocimum canum* is crushed along with garlic and applied along with oil.
- For waist pain, first Karanj oil is applied in waist then the leaf of *Euphorbia tirucalli* is heated and applied in that place
- For leprosy the root of *Bombax malabaricum* is grounded and is given along with juice of sour orange.
- Bark of *Eugenia jambolana* along with the bark of *Nerium odorum* is used for blood dysentery.
- Bark of guava along with the bark of *Mangifera indica* is crushed and taken for blood dysentery.
- Burned onion and ginger is taken along with flower of *Plumeria rubra* to cure cough and cold.
- For cough twenty one flowers of *Plumeria rubra* are grounded with burnt ginger, garlic and onion and taken orally.

The value of independent confirmation of known uses as supporting evidence, as well as additional anecdotes for well-known medicinal plants should not be under-estimated. The new records of commonly used medicinal plants revealed by this study show that the medical ethnobotany of the Semiliguda is incompletely recorded and that there is an urgent need to document traditional knowledge before it is lost forever.

The information presented here, incomplete as it may be, could be helpful in future attempts to provide a more complete synthesis of Semiliguda ethnomedicine.

CONCLUSIONS

The knowledge of traditional healers in the treatment of infections has been highly supported by the literature, showing efficacy of their herbal extracts in treating infections. The task that remains is to perform bioassay-guided phytochemical studies on active extracts so as to isolate the active compounds. In this study, the herbalists were the most resourceful group.

The ethnomedical information obtained from traditional healers could lead to discovery of new active compounds. A good example is depicted in this study where seventeen (34%) out of 50 plants collected were previously evaluated for activity and found to be active. This revelation shows how reliable and useful is the information obtained from traditional healers.

This study concluded that even though the accessibility of Western medicine for simple and complicated diseases is available, many people in the studied parts of Semiliguda block still continue to depend on medicinal plants, at least for the treatment of some simple diseases such as, cold, cough, fever, headache, poison bites, skin diseases and tooth infections. Well-knowledge healers have good interactions with patients and this would improve the quality of healthcare delivery. The present day traditional healers are very old. Due to lack of interest among the younger generation as well as their tendency to migrate to cities for lucrative jobs, there is a possibility of losing this wealth of knowledge in the near future. It thus becomes necessary to acquire and preserve this traditional system of medicine by proper documentation and identification of specimens. Combining concepts derived from the disciplines of agriculture, archaeology, biochemistry, genetics, horticulture, ecology, conservation biology and botany. The field of ethnobotany holds extraordinary promise for helping us build a better future. Ethnobotany can strengthen our links to the natural world. It is of central importance for understanding the collective experience of humankind in a series of exceedingly diverse environments and using those experiences to meet the challenges that we face. It makes it possible for us to learn from the past and from the diverse approaches to plants represented by different human cultures that exist today. Ethnobotany is at once a vital key to preserving the

diversity of plants as well as to understanding and interpreting the knowledge by which we are and will be, enabled to deal with them effectively and sustainable throughout the world. Thus ethnobotany is the science of survival.

ACKNOWLEDGEMENTS

We wish to acknowledge the kind hospitality and valuable contributions of all the people we met and interviewed during the field studies.

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