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Ethnobotanical study of medicinal plants in Jajpur district of Odisha, India

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Abstract

Ethnobotany is the scientific study of the relationships that exist between peoples and plants. Ethnomedicine is a study or comparison of the traditional medicine practiced by various ethnic groups, and especially by indigenous peoples. The word ethnomedicine is also synonymous with traditional medicine. Indigenous knowledge is traditionally used by the local people for the cure of some common ailments. This experiment was carried out in the Jajpur district of Odisha, India to explore the therapeutic use of traditional plants by local inhabitants. The ethnomedicinal use of 68 plant species was documented in the study area. Different plant parts like bark, leaf, flower, seed, stem, rhizomes, root, whole plant and oil were reported as used in raw or cooked form against different diseases. Prominent diseases and ailments against which, the plants were found to be useful were cough and cold, inflammation, dysentery, indigestion, asthma, cardiovascular ailments, diabetes, epilepsy, jaundice, malaria, rheumatism, skin disorder ulcer and different skin diseases. Some plants were also found to be useful for treatment of nerve disorders. This paper enlists the medicinal plants used by the traditional healers, indigenous people of the locality.

Keywords: ethno-medicinal plants, Jajpur, Odisha, uses

Introduction

Jajpur is one of the historically important districts of Odisha and takes its name from its head quarter town, Jajpur. The Jajpur District came into being on 1st April 1993, prior to that it was part of Cuttack District which divided into four Districts. The District is bounded by Keonjhar and Bhadrak Districts on its North, Cuttack on its South, Dhenkanal District on its East and Kendrapada District on its West (Fig. 1). The Jajpur District located in between 20 degree 30' to 21 degree 10' North Latitude and 85 degree 40' to 86 degree 44' East Longitude. The District covering an area of 2887.69 sq km is moderately populated having total population of 18,26,275 as per 2011 census. This district has 10 development blocks viz. Bari, Binjharpur, Dasarathpur, Barachana, Danagadi, Dharmasala, Jajpur, Korei, Rasulpur, Sukinda. Agro-Climatically, the District is divided in to two zones, namely the North Eastern Coastal plain and the Mid Central table land. The average height of the district from the sea level is 331 mts. and its average rain fall is 1014.5 mm. The average maximum and minimum temperatures are 38 degree C and 12 degree C respectively. Jajpur District is affected by floods regularly as the rivers like Brahmani, Baitarani, Badagenguti, Budha, Kani, Kelua, Birupa, and Kharasrota etc. flow through the district. This results in damage to standing crops and water logging in the district during the rainy season. Generally there are six types of soil found in this district. These are Deltaic Alluvial Soil, Alluvial Soil, Lateritic soil, Red sandy and other Alluvial soil. Deltaic-Alluvial soil and Alluvial soil are found in most part of the district. Jajpur district has 725.217 Sq. km. of forest area. Out of this 299.32 sq. Km. is demarcated protected, 6.35 sq. km. is reserve forest and the remaining 415.59 sq. Km. is other forest area. The forest resource like timber, fire wood and minor forest products are available in the district. The traditional knowledge plays a vital role in different Indian system of medicine like naturopathy and ayurvedic medicine [1]. Herbal remedies have attained much more popularity in the treatment of minor ailments due to increasing awareness of personal health maintenance through natural products. The traditional knowledge and health care system of Indian ethnic communities is rich and unique in the world [2]. Odisha, one of the states of eastern India, has vast genetic resources and complex cultural diversity. Orissa has a rich biodiversity of plant resources in general and medicinal plants in particular. Though a large number of medicinal plants have been documented for their medicinal uses, many more of species are yet to be identified. This paper aimed at studying ethno botanical and ethnomedicinal importance of some plants of Jajpur district.

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This investigation is intended to document the traditional knowledge of tribal or rural communities in utilizing plant resources for primary health care practices.

Material and Methods

The local people depend on the plant resources of the locality for their day to day livelihood. The study was carried out in 10 different villages of Jajpur districts during summer 2014. Several attempts were made for collection/study the raw drug consumption by the villagers. The data were collected from the traditional healers and knowledgeable persons of villages. They were interviewed to record different plants used for various remedies. Village elders are the major key players in the traditional healthcare systems [4]. Separate format was used for recording data in respect of each respondent [3]. A list of all the plants and raw drugs used by the respondent for therapeutic and medicinal purposes was also prepared. The plant species were collected for identification and to ascertain the uses of these medicinal plants, literature sources were referred.

Observations

Plant species used for different health problems together with botanical name, family, local name and parts used followed by traditional uses by the local folk were recorded and compiled. In the investigation, 68 plant species represented by

63 genera and 43 families were found to be used by the local people in traditional healthcare system (Table 1). The plants reported by the respondents were used to cure a number of diseases. It was observed from the study that the practitioners are using more herbal medicines for the treatment of common diseases like cough, cold, diarrhoea, stomach pain, malaria and skin diseases. Non-availability and non-affordability of the modern healthcare facilities might have been a deciding factor to depend upon the traditional medical practices [3]. Different plant parts viz. roots/tubers, stem, bark, leaves, flowers and fruits were found to be used for effective treatment of different ailments. Leaves of 32 plant species, barks of 11 plant species, flowers of 9 plant species, fruits of 15 plant species, roots of 14 plant species, rhizomes of 4 plant species, seeds of 5 plant species and whole plant of 5 species were used to cure different ailments. Among them, 25 are tree species, and remaining included both herb and shrub species. All the plants are used in the treatment of 44 different diseases. Out of 68 plant species, 55 plants were used to cure two or more than diseases. Out of 68 species of plants, some plants were found to be utilized for multiple ailments e.g. *Asparagus recemosus* L., *Azadirachta indica* A. Juss., *Bombax ceiba* L., *Centella asiatica*, *Flacourtia indica*, *Hibiscus rosasinensis*, *Justicia adhatoda* L., *Ocimum sanctum*, *Solanum xanthocarpum* Schrad. & Wendl., *Terminalia arjuna* (Roxb.) Wight & Arn. and *Terminalia chebula* Retz.

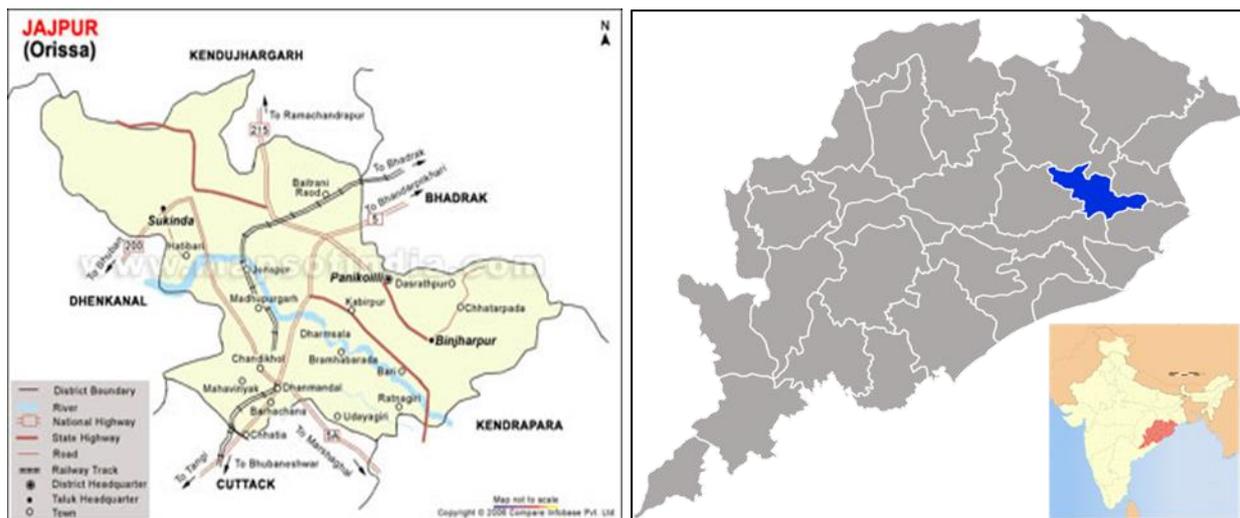


Fig 1: Location map of the study area

Table 1: Ethno-medicinal uses of some indigenous plants in Jajpur district of Odisha

S. No.	Plant name	Family	Local name	Parts used	Ethnomedicinal uses
1	<i>Abrus precatorious</i> L.	Fabaceae	Kaincha	fruit	Used as an oral contraceptive
2	<i>Achyranthes aspera</i> L.	Amaranthaceae	Apamaranga	leaf	Leaf paste with <i>gur</i> or <i>jaggery</i> and butter/curd taken twice a day to cure blood dysentery.
3	<i>Acorus calamus</i> L.	Araceae	Bacha	rhizome	Decoction of rhizome along with roots of <i>Angelonia grandiflora</i> to treat diarrhoea. Useful for coughs, colds, bronchial throat and stomach troubles. The root stock is chewed for melodious voice.
4	<i>Aegle marmelos</i> (L.)Corr.	Rutaceae	Bela	leaf and fruit	Blood purifier and digestive Fruit pulp is used as laxative
5	<i>Ailanthus excelsa</i> Desf.	Simaroubaceae	Mahal	bark	Bark ground to paste and administered orally along with curd, twice a day for effective remedy in dysentery.
6	<i>Alternanthera sessilis</i> (L.) R.Br. ex DC.	Amaranthaceae	Madaranga shaga	leaf	Plant juice are useful against chronic dysentery
7	<i>Andrographis paniculata</i>	Acanthaceae	Chireita	leaf	Juice of leaves used for curing diabetes and worm in stool. Cures malaria and fever
8	<i>Annona squamosa</i>	Annonaceae	Neoa	leaf	Warm leaves applied directly on boils
9	<i>Artocarpus lacucha</i> Roxb. Buch.-Ham.	Moraceae	Jeutha	bark, fruit and seed	Purgative, liver tonic, good for skin. Bark powder when applied externally, draws out purulent matter; heals boils, cracked skin

					and pimples till cure. The seed are good purgative for children. The ripe fruit is used as tonic to liver.
10	<i>Asparagus recemosus</i> L.	Liliaceae	Satabari	root	Effective remedy for white discharge, indigestion, colic, stomach pain and spermatorrhea, Root used in nervous disorders, dyspepsia, diarrhea, dysentery, tumours, inflammation throat infections, tuberculosis, cough, colic etc
11	<i>Azadirachta indica</i> A.Juss.	Meliaceae	Limba	leaf, bark	Aqueous extract of leaves is taken in empty stomach for treatment of diabetes. Leaf extract useful for skin disease, leprosy and intestinal worms. The leaf is also eaten for control of sugar level and against diabetes
12	<i>Bacopa monnieri</i> (L.) Pennell	Scrophulariaceae	Brahmi	leaves	Leaf juice along with honey for epilepsy. Juice of the plant mixed with milk against epilepsy. Leaf juice along with leaf juice of <i>Aegle marmelos</i> (Bela) helps to reduce blood sugar
13	<i>Basella alba</i> L.	Basillaceae	Poi	leaf, root	Effective medicine in gynecology and constipation. Juice of the leaves with honey is given for treatment of constipation particularly in children. The root paste along with rice washed water is taken in the morning in empty stomach for one month to cure irregular periods. Leaf is rubbed over the affected part to cure irritation and swellings due to caterpillar.
14	<i>Bombax ceiba</i> L.	Bombacaceae	Simili	thorn, root, flower	Effective remedy for gynecological disorder, urinary troubles and dysentery. Thorn paste with cow milk is applied on pimples. Root paste with unboiled cow milk is taken to regulate the menstruation and with black pepper it is used to control white discharge. Root decoction is taken orally twice daily for a week to cure urinary troubles. Decoction of flowers is used to cure dysentery. Paste of fleshy roots of young plant mixed with unboiled cow milk is taken by women to regulate irregular menstruation. The flowers paste is applied on boils for ripening purpose.
15	<i>Borassus flabellifer</i> Linn.	Arecaceae	Tala	leaf, fruit	The juice of the leaf stalks and young roots is good for gastric and dyspepsia. The juice of leaf stalk also useful against earache. Mesocarp portion of fruits are edible, used as an energy food for convalescents
16	<i>Calotropis procera</i>	Asclepiadaceae	Arakha	flower, juice of the plant	The pills produced by crushing of flowers with peppers are used orally against cardiac asthma. Milky juice extracted from the plant is effective for treatment of skin diseases.
17	<i>Carica papaya</i>	Caricaceae	Amruta bhanda	fruit	Digestive, effective against toothache
18	<i>Centella asiatica</i>	Apiaceae	Thalkudi	leaves	Leaves ground with black peppers are useful against stomach disorder. Plant decoction mixed with cow milk is useful against asthma. The plant juice is used externally as well as internally for treatment of leprosy and psoriasis. Leaves boiled in sesame oil helps in better hair growth on the scalp.
19	<i>Chenopodium album</i> L.	Chenopodiaceae	Bathuasaga	whole plant, leaf	Useful for treatment of piles and cardiovascular diseases. Leaf juice is administered to cure piles. One spoonful of whole plant decoction is used for killing intestinal worms. Leaf is eaten for 30 days by the heart patient to get relief from heart diseases.
20	<i>Cleome viscosa</i> L.	Capparaceae	Anasorisa	leaf and shoot	Decoction of powdered plant is applied in the treatment of pimples and boils.
21	<i>Clitoria ternatea</i> Linn	Fabaceae	Aparajita	leaves, flower, root	The root is administered with honey as a general tonic to children for improving mental faculty. Diuretic and effective remedy for gynecological disorder. Leaves and flowers extracts are diuretic and are effective remedy for headache, migraine, memory tonic and chronic fever
22	<i>Curcuma aromatica</i> Salisb.	Zingiberaceae	Palua	rhizome	Diarrhea Juice (3-5 ml) of the crushed rhizome is taken with honey for 3-5 days to cure diarrhea in children.
23	<i>Curcuma longa</i> L.	Zingiberaceae	Haladi	rhizome	Rhizome powder is taken orally to cure jaundice. Fresh rhizome extract is applied externally on the affected eyes to cure eye diseases.
24	<i>Cuscuta reflexa</i> Roxb.	Cuscutaceae	Nirmuli	whole plant	Whole plant paste is used against piles.
25	<i>Cyanodon dactylon</i>	Cyperaceae	Dubaghasa	Leaf, root, whole plant	The infusion of leaves is useful against nasal bleeding. Root juice of this herb mixed with bark powder of Guali (<i>Cordia obliqua</i>) and sugar candy is prescribed for relief from dysentery. Whole plant is useful for to Menstrual problem). Young twigs are crushed with rice water and mixed with sugar candy and taken orally once in the morning during painful menstruation to stop profuse bleeding
26	<i>Cyperus rotundus</i>	Cyperaceae	Mutha ghasa	whole plant	Decoction of this plant mixed with honey useful against epilepsy. Whole plant is ground with dried ginger, fruits of Harida and cumin seeds to powder. This powder is effective against dysentery and vomiting. Stem tuber is boiled along with

					<i>Piper nigrum</i> and taken orally for Stomach problem.
27	<i>Datura metal</i>	Solanaceae	Dudura (Kala)	fruit, leaf	Fruit are analgesic in nature, effective against colic, Leaves-anti inflammatory and relieves sprain
28	<i>Diospyros melanoxyton</i>	Ebenaceae	Kendu	leaf, fruit	Leaf paste along with <i>Madhuca indica</i> Fruit and <i>Adina cordifolia</i> leaves used for treatment of loose motion. Leaf juice used for piles and fruit pulp also used in loose motion.
29	<i>Eclipta prostrata</i> L.	Asteraceae	Bhrungaraj	leaf	Hair growth, dysentery & boil suppuration, Crushed leaves are directly applied on fresh cuts to check bleeding
30	<i>Erythrina variegata</i> var. <i>orientalis</i> (L) Merr.	Fabaceae	Paladhua	bark, leaf	Decoction from bark administered orally to cure blood dysentery. Leaf extract has antihelminthic properties. Fresh leaves juice used for curing worm in stool
31	<i>Ficus benghalensis</i> Linn.	Moraceae	Bara	bark	Infusion of bark is used in diabetes, dysentery and in seminal weakness.
32	<i>Ficus religiosa</i> Linn	Moraceae	Aswatha	bark, fruit	Bark is antiseptic, astringent, laxative. It is also used in diabetes, diarrhea, and leucoderma. Dried fruits pulverized and taken with water to cures asthma. The latex is good agent for inflammation, blood dysentery and haemorrhages. Aerial roots are given to women for inducing conception.
33	<i>Flacourtia indica</i>	Saliaceae	Baincha	leaf, fruit, root bark	The plant parts are utilized for remedy of ailments like arthritis, bilious disorders, cholera, asthma, bronchitis, malaria diarrhea, eczema, urinary, fever nausea and vomiting. Infusion of crushed fruits is effective against painful urination. Stem bark paste is applied by rubbing the skin for treatment of eczema. Bark paste are used for treatment of intermittent fever
34	<i>Hibiscus rosasinensis</i>	Malvaceae	Mandar	flower, leaf	Flower is useful as hair tonic, Leaves are effective in deworming, foot burning, gynecological problems, easy child birth, growth of hair, head and heart weakness.
35	<i>Justicia adhatoda</i> L	Acanthaceae	Basanga	leaf	Used to treat cough and asthma. Leaf decoction is taken with honey in empty stomach to cure acute cough and cold. Powder made from leaf is taken with warm water daily to get relief from rheumatic pain.
36	<i>Kalanchoe pinnata</i> (Lamk.) Pers.	Crassulaceae	Amarapoi	leaf	Paste along with nigrum black peppers (<i>Piper nigrum</i> L.) administered orally to cure diarrhea.
37	<i>Lawsonia inermis</i> L.	Lythraceae	Manjuati	leaf, stem	Stem is boiled in water and kept overnight in a clay pot, in the morning it is filtered and taken as drink for curing stone and jaundice.
38	<i>Macrotyloma uniflorum</i> L. Verdc.	Fabaceae	Kolatha	seed	Effective remedy against kidney stone. The decanted water from seed overnight soaking with water is taken for removal of kidney stones.
39	<i>Madhuca indica</i>	Sapotaceae	Mahua	flower latex	Flower paste along with leaves of <i>Diospyros melanoxyton</i> used for diarrhoea. Latex used as remedy for cracked feet
40	<i>Mentha piperata</i> L.	Lamiaceae	Pudina	leaf	A volatile oil obtained from the plant is well known in medicine for its antiseptic, stimulant and carminative properties.
41	<i>Mimosa pudica</i>	Fabaceae	Lajakuli lata	root, leaf	Root paste in raw rice washed water useful against snake bite, Leaf paste is applied on glandular swelling
42	<i>Mimusops elengi</i>	Sapotaceae	Boula	flower, fruit	Flowers are used for preparing a lotion for wounds and ulcers. Pulp of ripe fruits are used in chronic dysentery. Seeds are used for preparing suppositories in case of constipation especially in children.
43	<i>Moringa oleifera</i> Lam.	Moringaceae	Sajana	leaf, bark	Juice of fresh leaves is directly taken to treat high blood pressure. Paste of newly arising leaves with black pepper powder is very effective to treat dysentery. Bark-paste is taken orally with raw rice-washed water on empty stomach to treat rheumatism.
44	<i>Mucuna pruriens</i> (L.) DC.	Fabaceae	Baidanka	seed	Used as an antidote for snakebite Seed paste is useful against ulcer. Paste of the seed is applied topically over the ulcers of the genital organs of both sexes till cure. Meat preparations are restricted in the diet during the period of treatment.
45	<i>Nyctanthes arbostritis</i> L.	Oleaceae	Ganga siuli	leaf	Decoction of leaf along with honey is also very effective against fever, rheumatism and malaria. Leaves paste along with <i>Andrographis paniculata</i> and <i>Azadirachta indica</i> leaves used for treatment of malaria
46	<i>Ocimum sanctum</i>	Lamiaceae	Tulasi	leaf	The leaf of juice useful against constipation, cholera and leprosy. Leaf taken with honey is useful against common cold. Leaf paste is very effective for wound place of leprosy
47	<i>Paederia foetida</i> L.	Rubiaceae	Pasaruni	leaf	The paste of leaf is given in empty stomach to cure low back pain. Leaves juice used in diarrhea.
48	<i>Pandanus fascicularis</i> Lam	Pandanaceae	Kia	root	Effective against diabetes. Decoction of aerial root is taken for control excessive of urination in diabetic patients.
49	<i>Phyllanthus emlica</i> L.	Euphorbiaceae	Anla	fruit	Fruit juice effective against diabetes

50	<i>Phyllanthus fraternus</i> L.	Euphorbiaceae	Bhuin Anla	shoot, root	Fresh root ground in rice water take as remedy for jaundice. Infusion of young shoot is useful against dysentery
51	<i>Pongamia pinnata</i> L. Pierre.	Fabaceae	Karanja	shoot, seed	Antibacterial and antimycobacterial activity. Seed oil is used in skin diseases and rheumatism. Tender twig is used as tooth brush to cure pyorrhoea.
52	<i>Pterospermum acerifolium</i>	Sterculiaceae	Muchukundi	flower	The flower juice used for treatment of diarrhea.
53	<i>Punica granatum</i> L.	Punicaceae	Dalimba	leaf, bud and fruit	Leaf, bud or unripe fruit is made to paste along with rice washed water and administered orally along with a minute pinch of opium. Fruit juice is effective remedy for diarrhea.
54	<i>Rauwolfia serpentine</i> (L.) Benth.	Apocynaceae	Patalgaruda	bark, root	Effective for treatment of Blood pressure and snake bite. Bark of root is grinded with water and the paste is taken with cold water to cure stomach ache. The root paste is also effective for the treatment of high blood pressure.
55	<i>Saraca asoca</i> (Roxb.) de Wilde.	Fabaceae	Asoka	bark, flower	Useful for treatment of gynecological disorder and bone fracture. Powder of dried flower petals is taken with cold water twice daily in empty stomach to cure dysentery. The decoction of bark is taken in empty stomach to cure irregular menstruation and excessive bleeding.
56	<i>Smilax zeylanica</i> L.	Liliaceae	Mootri	root	The paste of root is given internally in dysentery. Root decoction is used to cure rheumatic pain. Root paste is taken for cure of venereal disease. Powder of dried root is applied on chronic ulcers.
57	<i>Solanum xanthocarpum</i> Schrad. & Wendl.	Solanaceae	Ankaranti	flower, fruits	Leaf and fruit extract are effective remedy for piles, fever, asthma, cough, diuretic and sun stroke
58	<i>Streblus asper</i> Lour.	Moraceae	Sahada	leaf, root	Regular brushing of teeth by fresh tender twigs cure toothache. Root paste is used against dog-bite. Leaf paste with castor oil is applied to cure eczema.
59	<i>Syzygium cumini</i> (L.)	Myrtaceae	Jamu	leaves, seeds	Leaf juice along with honey used in diarrhoea, cholera, Seed powder used in diabetes
60	<i>Tagetes petula</i>	Asteracea	Gendu	leaf	Decoction of leaf applied on cuts and injuries for healing of wounds
61	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.	Combretaceae	Arjuna	bark	Bark is useful as cardio tonic, cardio-protective and expectorant. Bark paste is externally used in different skin diseases, against herpes and leucoderma.
62	<i>Terminalia chebula</i> Retz	Combretaceae	Harida	fruit	Paste prepared from pericarp taken along with curd to cure diarrhoea. The fruits are used as anti-inflammatory, carminative and digestive agent
63	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Combretaceae	Bahada	fruit	Powder prepared by burning the fruits, taken internally with rock salt in diarrhea.
64	<i>Tragia involucrata</i> L.	Euphorbiaceae	Bichuati	root	Effective against frequent urination. Root powder mixed with curd is taken to control frequent urination
65	<i>Tridax procumbens</i> L.	Asteraceae	Bisalya karani	leaf, whole plant	Effective remedy for cut and wound infection. Leaf juice is used in case of wound and cut to check bleeding
66	<i>Vitex negundo</i> L.	Verbanaceae	Begunia	leaves, bark	Effective remedy for headache, ulcer, sinus problem, dysentery, piles, diarrhoea, fever and liver complains
67	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Aswagandha	root	Used to treat paralysis. Paste of roots is taken in empty stomach to cure dysuria. This is also effective against piles, cough and fever
68	<i>Zingiber officinale</i> Rosc.	Zingiberaceae	Ada/Sunthi	rhizome	Rhizome powder mixed with warm water is taken thrice a day for abdomen pain. The raw zinger extract in warm water or mixed in tea relieves from coldache.

Conclusion

It was found that plants used in herbal preparation are mostly collected from the wilderness. Though most of the plants are locally available, some practitioners depend on the forest resources for this purpose. Bio-prospecting of these plants can be effectively done involving local folk of the area. Efforts are urgently required for conservation of these plants involving the local people participatory approach.

References

1. Satapathy KB, Sahu BB, Jena GS. Crop weeds diversity and their ethnomedicinal uses in treatment of common ailments in the Jajpur district of Odisha (India). *Int. J Med. Arom. Plants.* 2012; 2(1):80-89.
2. Katewa SS, Sharma R. Ethnomedicinal observations from certain watershed areas of Rajasthan. *Ethnobotany.* 1998; 10:46-49.
3. Rout SD, Panda SK. Ethnomedicinal plant resources of Mayurbhanj district, Orissa. *Indian J Tradit Know.* 2010; 9(1):68-72.
4. Panda T, Mishra N, Tripathy BK, Das PK, Mohanty RB. Ethno-Medico-Biology of Bhadrak district, Odisha, India. *J For. Res.* 2013; 24(1):187-192.