

# Ethno- Pharmacological Diversity in Family Asteraceae in the State of Orissa\*

<sup>1</sup>Aminuddin,

<sup>2</sup>\*R. D. Girach

<sup>3</sup>Parwez Ahmad

and

<sup>1</sup>Shamshad Ahmad Khan

<sup>1</sup>Central Council for Research in  
Unani Medicine, 61-65,  
Institutional Area, Opp. 'D' Block,  
Janakpuri, New Delhi-110058

Regional Research Institute of Unani  
Medicine, Bhadrak- 756 100 (Orissa)

<sup>3</sup>Regional Research Institute of  
Unani Medicine, University of  
Kashmir, Srinagar-190006 (J&K)

## Abstract

The family Asteraceae occupies fifth position among top ten dominant families of flowering plants in the state of Orissa. It is represented by 103 plant species belonging to 62 genera in the state. Ethno-pharmacological uses of 29 plants species of Asteraceae recorded from diverse ethnic groups in different geographical regions of Orissa are presented in this communication. The data included in the paper was collected during ethno-botanical survey trips conducted by Survey of Medicinal Plants Unit, Regional Research Institute of Unani Medicine, Bhadrak from 1981 – 2006. Information obtained from the study area on ethno-pharmacological uses reveal that some species of asteraceae have multiple medicinal uses and some of the uses are unique in nature that have not been reported earlier. First hand data recorded from the field and information collected from published literature have been presented in this communication. It has been suggested that scientific evaluation may be done of plants species claimed therapeutically useful by the inhabitants of the study area, so as to find out some useful indicators. It has also been emphasized that studies may also be taken among under-explored ethnic groups like Munda, Mankadia, Paroja and primitive tribes like Bondo, Paudi bhuinya and other bio-diversity rich areas like mangrove forests in the state.

**Keywords:** Asteraceae, Ethno-pharmacological diversity, Orissa.

## Introduction

The tribal communities living close to nature, acquired good knowledge about the medicinal use of wild flora most of which are not known to the outside world. This rich knowledge, if subjected to scientific screening could benefit the humanity in finding treatment for many diseases and conditions. In recent times, therefore, there has been a keen interest in the ethno-pharmacological studies, since they provide lead material for the discovery of new drugs of plant origin. It is in this context the present study was undertaken and presents the data on ethno-pharmacological uses of plants recorded from the tribal and other rural inhabitants in different geographical areas in the state of Orissa. While analyzing the data it was observed that plants species of family Astreaceae have multiple medicinal uses among different tribal societies and rural folks.

The family Asteraceae is considered to be one of the most advance families of angiosperms. Almost all the diverse geographical regions are represented

\*The Paper was presented in the 12th International Congress of Ethnopharmacology at Kolkata

<sup>2</sup>\*Author for correspondence

by the members of the family. It occupies 5<sup>th</sup> position among top ten dominant families of flowering plants in the state of Orissa. The family is represented by 103 species belonging to 62 genera (Saxena and Brahman, 1996). Different species of this important family have attracted wide attention for their value as medicinal, edible and ornamental purposes.

The state of Orissa is situated on the east coast of India. The land area is characterized by large expanses of tropical deciduous forest with *Shorea robusta* Gaertn. dominating through out. The state is inhabited by 63 different tribal communities. The major tribal groups are Kondh, Santal, Gond, Oraon, Munda, Bhumij, Bondo, Bathuri, Bhuiyan, Paudi Bhuiyan, Kharias, Saora etc. The tribal people largely depend on native plant remedies to cure common ailments.

The work on ethno-medicinal aspects of Orissa has been undertaken earlier (Saxena & Dutta, 1975; Mudgal & Pal, 1980; Das & Misra, 1987; Saxena, et al., 1988; Brahmam & Saxena, 1990; Girach, 1992; Girach et al., 1994, 1996, 2006; Aminuddin & Girach, 1993; Aminuddin et al., 2009; Mukharjee and Namhata, 1990; Satpathy and Panda, 1992; Anonymous, 2001, 2006; Panda, 2007; Sahoo and Satapathy, 2009). However, there is more scope for exploration of tribal dominated areas to record more and more information on medicinal and other uses of plants prevalent among these communities.

The present study deals with the results of field work undertaken among different tribal inhabitants on ethno-pharmacological uses of diverse nature of plants of family Asteraceae. Ethno-botanical field trips were conducted in different geographical regions of the state and data was recorded. To ensure good coverage of the data, different regions, rich in forests and tribal people were visited and often plants collected in one locality were discussed among other ethnic groups. Published literature on ethno-medicinal studies in Orissa was scrutinized and recorded wherever available.

## **Materials and Methods**

Plants specimens belonging to 29 species of family Asteraceae included in the paper were collected during a series of ethno-botanical field trips conducted during 1981 – 2006 by survey team of Regional Research Institute of Unani Medicine (RRIUM), Bhadrak. Information on medicinal uses of plants was recorded from the local inhabitants viz., tribal and other rural folks. Information was obtained through personal interactions with knowledgeable persons of the inhabiting communities. Plants specimens were collected from the field with company of key informant along with their local name and provided voucher

number separately to each specimen. They were identified and processed for drying, pressing etc. The specimens mounted on herbarium sheets were deposited in the unit herbarium of RRIUM, Bhadrak provided with relevant information for future reference.

### Enumeration

The plants specimens of Asteraceae collected from the study area have been enumerated alphabetically with their botanical names as given in Flora of Orissa (Saxena & Brahmam, 1996), followed by folk medicinal uses. Local name(s) recorded from the area surveyed, locality (district), Tribe/non-tribe informant and voucher specimen numbers are given in the brackets at the end of the folk medicinal claim. A few examples of ethnomedicinal diversity in medicinal uses of *Blumea species*, *Eclipta prostrata*, *Elephantopus scaber*, *Enydra flactuans*, *Sphaerathus indicus*, *Tridax procumbens*, *Vicoa indica* and *Xanthium indicum* are discussed.

#### *Adenostemma lavenia* (L.) Kuntze

1. A handful of leaves with burnt coconut fiber is made into paste and applied locally on burns. The remedy is believed to be useful in healing, if burns are up to 30 percent. (Butame, Malkangiri, Bondo, 1661).
2. Extracted Plant juice (one teaspoon, two times daily) is taken with sufficient water to get relief from abdominal pain (Pokosunga, Balasore, Murmu, 2933).
3. Leaf decoction (one teaspoon, two times daily) is taken for 3-4 days to get relief from bronchitis (Pokosunga, Keonjhar, Bhumij, 5422).

#### *Ageratum conyzoides* L.

1. Gargling of warm leaf decoction is prescribed to get relief from toothache (Pokosunga, Bhadrak, Das, 5526).
2. 5 cm piece of stem is tied as an amulet on the wrist of a person suffering from dental caries to get relief from toothache (Pokosunga, Kendrapara, Tripathi, 6345).

#### *Bidens biternata* (Lour.) M. & S.

Crushed leaves are directly applied on cuts to check bleeding (Pokosunga, Bargarh, Saora, 6889).

#### *Blainvillea acmella* (L.) Phillipson.

Extracted leaf juice is applied directly on fresh cuts to check bleeding (Bodopokosunga, Puri, Saora, 4419).

*Blumea aurita* (L.f.) DC.

Crushed leaves are directly applied on cuts to check bleeding (Pokosunga, Bhadrak, Sethi, 5525).

*Blumea fistulosa* (Roxb.) Kurz.

Varghese (1996) reported that plant juice is applied on forehead to treat headache (Bansarso, Sundargarh, Kharias).

*Blumea lacera* (Burm. f.) DC.

1. Extracted root juice (20 ml, once at bed time) is given in desired quantity to a child suffering from bed-wetting habit (Pokosunga, Balasore, Kols, 2708).
2. Plant decoction with powdered *Foeniculum vulgare* (Panmohri) and sugar candy in desired quantity is drunk as cooling agent in gastric disorder (Pokosunga, Balasore, Patra, 2973).
3. Plant paste is applied locally to get relief from body ache. (Hemraj, Bhadrak, Maharana, 6116).
4. Crushed leaves are directly applied on sprain as analgesic and anti-inflammatory agent (Hemraj, Bhadrak, Maharana, 6116).
5. Plant paste is applied locally on affected parts to reduce swelling (Hemraj, Kendrapara, Jena, 6381).

*Blumea membranacea* Wall. ex DC.

Whole plant is reported as medicinal to get relief from body pain (Saxena & Dutta, 1975).

*Chromolaena odorata* (L.) R. King & Robins.

The plant is reported for bone fracture, sprain (Saxena & Dutta, 1975) and to stop bleeding (Malik, 1996).

*Eclipta prostrata* (L.) L.

1. Leaf decoction with honey is given in desired quantity to weak and malnourished child to treat malnutrition and gain weight (Kesari, Mayurbhanj, Kol, 0928).
2. Plant decoction is drunk and used for washing scars in smallpox (Kesudra, Balasore, Bhumij, 0986).
3. A handful of root s made into paste is applied on mumps. Leaves and shoots of the plant made into paste and applied on neck of farm animals to treat and heal infested wounds (Kesudra, Dhenkanal, Kondhs, 2679).
4. The same information was further confirmed from Jajpur district (Rout, 6557).

5. Crushed leaves are directly applied on cuts to check bleeding (Kesudra, Balasore, Murmu, 2805, 2870).
6. The same information was further confirmed from Bhadrak (Kol, 3958), Bargarh (Chohan, 6893) and Jagatsinghpur (Das, 7042) districts of Orissa.
7. Extracted leaf juice with pinch of edible salt is given to treat stomatitis.
8. Extracted juice of plant with Haldi (*Curcuma longa*) is taken (one teaspoon, two times daily) for one week to treat sluggishness of liver (Bargarh, Chohan, 6893).
9. Leaf juice is applied on skin eruption caused due to working in water logged rice fields (Kesudra, Athgarh, Barik, 3161).
10. Leaf juice with desired quantity of honey is given (one teaspoon, two times daily) to treat dysentery in children (Koda Kesudra, Bhadrak, Kols, 4365).
11. Leaf paste is applied fresh on scalp to kill parasitic lice in hair (Kesudra, Bhadrak, Jena, 6107).
12. Whole plant with Bansa (*Bambusa* sp.) and Pijudi (*Psidium guajava*) leaves in 1:1:1 ratio is boiled in 500ml water, till remains 100 ml. It is cooled and strained. The filtrate is taken (50 ml, two times daily) to alleviate chronic fever. (Kesudra, Kendrapara, Misra, 6757).
13. Extracted leaf juice is used as nasal drop, which induces sneezing and help to get relief from cold and headache. (Kesudra, Kendrapara, Misra, 6757).
14. Leaf decoction (one teaspoon, two times daily) is taken for one week to treat jaundice (Kesudra, Kendrapara, Misra, 6757).
15. A handful of leaves made into paste with pulp of Gheekunwari (*Aloe barbadensis*) are applied on scalp to treat mental disorders such as madness. (Kesudra, Bargarh, Chohan, 6893).
16. Leaf paste is applied locally on scabies (Kesudra, Bargarh, Chohan, 6893).

*Elephantopus scaber* L.

1. Root powdered with ½ black pepper is taken (3-5 gm, two times daily) with honey to treat diarrhoea. (Chandesar, Phulbani, Kondhs, 0235). The information was further confirmed from Puri district (Saoras, 4409).
2. Plant decoction (one teaspoon, two times daily) is taken for 3 days to alleviate intermittent fevers such as malaria and typhoid (Mayurchulia, Phulbani, Kondhs, 0367).
3. A handful of roots powdered with equal quantity Patalgarudu (*Rauvolfia serpentina*) leaves are taken (5 gm, two times daily) with desired quantity of curd for 21 days to treat chronic bronchitis (Mayurchulia, Phulbani, Kondhs, 0434).

4. A handful of roots made into paste with Rasna (*Vicoa* sp.) and applied externally on oedematous swelling in Filariasis. (Mayurchulia, Phulbani, Kondhs, 0434).
5. Root made into paste in cow Ghee is applied locally on neck and chest to relieve cough and cold. (Mayurchulia, Phulbani, Kondhs, 0434).
6. 4-6 secondary roots powdered and mixed with jeggary are eaten to remove placenta of parturient mother (Mayurchulia, Kalahandi, Bhumij, 1037).
7. Powdered root (5 gm, once daily) to arrest vomiting. (Mahorchori, Mayurbhanj, Bathuris, 1436).
8. Powdered root with sugarcane juice is taken (5-10 ml, two times daily) to treat loose motion (Mahorchori, Mayurbhanj, Bathuris, 1436).
9. Seven pieces of secondary roots (each 2-3 cm long) are chewed raw as an antidote to poisonous bite of snake. (Mahorchori, Mayurbhanj, Bathuris, 1436).
10. A pinch of powdered root along with edible salt is placed in the opposite side of nostrils to get relief from migraine. (Mahorchori, Mayurbhanj, Bathuris, 1436).
11. Roots (5 gm.) powdered with black pepper is placed in dental cavity once at bed time to treat pyorrhea (Mayurchulia, Malkangiri, Bondos, 1651).
12. Crushed root is applied on minor cuts to check bleeding. Root decoction is given in required quantity to check diarrhoea (Mayurchulia/ Gomuti, Dhenkanal, Kondhs, 2479).
13. A handful of roots pounded with black pepper are taken (5 gm, two times daily) to regularize menstruation (Mayurchulia, Balasore, Das, 2924).
14. Powdered root with honey in desired quantity is given to check diarrhoea in infant (Mayurchulia, Dhenkanal, Barik, 3137).
15. A handful of roots powdered with black pepper are taken (5-10 gm, two times daily) for 3 days to treat dysentery with bloody stools (Totamulo, Athgarh, Das, 3222).
16. A handful of roots and Putri (*Croton roxburghii*) roots powdered in equal quantity taken (5 gm, every 2-3 hours) as antidote to poison of snake bite (Mayurchulia, Sundargarh, Kharias, 3607).
17. Root paste is applied on forehead to get relief from headache. (Mayurchulia, Sundargarh, Kharias, 3607).
18. A handful of roots powdered with 2 black peppers are taken (5 gm, two times daily) with sufficient water to treat blood dysentery. (Mayurchulia, Sundargarh, Kharias, 3607).
19. Extracted root juice is given (one teaspoon, every morning) for 21 days to expectant mother for delivering healthy baby. (Mayurchulia, Sundargarh, Kharias, 3607).

20. Three secondary roots powdered with Chunhur (*Marsdenia* sp.) are taken (5 gm, two times daily) for one week to break and remove stones from the kidney (Mayurchulia, Bolangir, Sahu, 4130).
21. 5 cm piece of root is tied on the waist as fever amulet to alleviate fever caused by evil effect of spirit (Mayurchulia, Bonai, Paudi Bhuinyas, 4599).
22. Powdered root is placed in dental cavity to get relief from toothache. (Mayurchulia, Bonai, Paudi Bhuinyas, 4599).
23. Root decoction (one teaspoon, two times daily) is taken with goat's milk to treat diarrhoea in children. Root decoction (two teaspoons, two times daily) is taken for one week to treat jaundice (Mayurchulia, Keonjhar, Bhumij, 5235).
24. Powdered root (5-10 gm, two times daily) is taken with sufficient water to treat gastric disorder (Mayurchulia, Bargarh, Saoras, 6911).
25. Root is also reported as medicinal in other published work from Orissa for debility of children, pimples (Saxena *et al.*, 1981), madness, to cure aversion of food (Brahmam *et al.*, 1996) and to hang in ears to cure headache (Jain, 1991).

*Emilia sonchifolia* (L.) DC.

Leaf decoction (3 ml, two times daily) is given to treat diarrhoea in infants (Bachramara, Athgarh, Mrs. Anjana, 3192).

*Enydra fluctuans* Lour.

1. A handful of leaves made into paste in Ghee, is applied warm on affected parts to reduce swelling (Hidmicha, Bhadrak, Mrs. Das, 4711).
2. Plant paste is applied warm on wounds for healing (Hidmicha, Bhadrak, Nayak, 5000).
3. Plant paste is applied locally on scabies. (Hidmicha, Kendrapara, Mahapatra, 6391).
4. Powdered plant (5-10 gm, two times daily) is taken with water to treat abdominal pain. (Hidmicha, Kendrapara, Mahapatra, 6391).
5. Extracted leaf juice filtered and used as eye drop to treat eye complaints (Hidmicha, Kendrapara, Mahapatra, 6391).
6. Plant juice (one teaspoon, every morning) is taken empty stomach regularly to keep essential high blood pressure under check. (Hidmicha, Jajpur, Naik, 6617).
7. Plant paste is applied on forehead to treat giddiness. (Hidmicha, Jajpur, Naik, 6617).
8. Extracted plant juice (3-5 ml, two times daily) is taken for 5 days to treat jaundice. (Hidmicha, Jajpur, Naik, 6617).
9. Leaf juice is drunk and whole plant is consumed as vegetable after cooking to improve eye-vision (Hidmicha, Jajpur, Naik, 6617).

10. Plant is eaten raw or cooked to treat night blindness. (Hidmicha, Kendrapara, Mallik, 6783).
11. Crushed plant is applied on scalp to treat madness. (Hidmicha, Kendrapara, Mallik, 6783).
12. Plant decoction in desired quantity is taken 2-3 times daily for one week to treat jaundice (Hidmicha, Kendrapara, Mallik, 6783).
13. Plant juice (one teaspoon, two times daily) is taken to check diarrhoea (Hidmicha, Jagatsinghpur, Ojha, 7107).

*Glossogyne bidens* (Retz.) Alston.

1. Root is one of the ingredients of a composite drug prescribed for oral administration in rheumatoid arthritis (Buthitejraj, Kalahandi, Bhunjia, 2035).
2. Powdered root in desired quantity is taken with milk to treat burning sensation (Buthitejraj, Dhenkanal, Nayak, 3089).

*Gnaphalium luteo-album* L.

Plant is reported for lactation problems and healing of wounds from different parts of Orissa (Tribedi *et al.*, 1982).

*Grangea maderaspatana* (L.) Poit.

Powdered leaves are used for sneezing purpose to get relief from cold and headache (Painjari, Kendrapara, Mallik, 6397).

*Launaea acaulis* (Roxb.) Babc. ex Kerr

Powdered root (5 gm, once every morning) is taken with honey to check sugar level in diabetes (Balrajkonda, Kalahandi, Bhunjia, 2071).

*Mikania micrantha* Kunth.

1. Crushed leaves are directly applied on minor cuts to check bleeding (Barbaria, Balasore, Mahapatra, 2826).
2. The same information was further confirmed from Kendrapara (Mallik, 6404) district.

*Senecio corymbosus* Wall ex DC.

Stem bark decoction (one teaspoon, two times daily) is taken with honey to check diarrhoea (Panasokonda, Gajapati, Saoras, 6501).

*Sonchus wightianus* DC.

1. Root decoction (one teaspoon, two times daily) is taken to check diarrhoea (Dudhbajra, Mayurbhanj, Kols, 1331).

2. Crushed leaves are directly applied on minor cuts to check bleeding (Bansiriso, Gajapati, Saoras, 6515).

*Sphaeranthus indicus* L.

1. Leaf decoction (one teaspoon, two times daily) is taken to alleviate fever caused due to evil effect of spirit (Batlifil, Phulbani, Kondhs, 0346).
2. A handful of roots made into powder with 5-7 black peppers are taken (5-10 gm, two times daily) to treat blood dysentery (Guddari, Phulbani, Kondhs, 0442).
3. Crushed leaves are applied on minor cuts to check bleeding (Matighaso, Kalahandi, Bhumij, 1041).
4. Plant decoction (one teaspoon, two times daily) is taken to alleviate fever (Koirab, Malkangiri, Bondos, 1662).
5. Extracted leaf juice is filtered and used as eye drop to treat conjunctivitis (Bhuikadamb, Bargarh, Saoras, 2003).
6. Plant decoction is taken in required quantity to check diarrhoea (Gudurkucha, Dhenkanal, Kondhs, 2477).
7. Plant paste is applied locally to get relief from muscular pain (Batuamundi, Athgarh, Kondhs, 3297).
8. Powdered plant (5 gm, two times daily) is taken with sufficient water as blood purifier in skin diseases (Ghodonadi, Bolangir, Gonds, 4113).
9. Fruit paste is applied locally on forehead to treat migraine (Panikadamb, Gajapati, Saoras, 6432).
10. Powdered plant is taken (5 gm, two times daily) to treat indigestion. Plant decoction (one teaspoon, two times daily) is given to treat cough and cold (Bokasing, Bargarh, Saoras, 6992).

*Spilanthes paniculata* Wall. ex DC.

Plant juice mixed with Gujriganda (Snail) of pond water is given in required quantity to regularize menstruation (Kodakesudra, Balasore, Sahoo, 2875).

*Tagetes patula* L.

Crushed leaf juice is applied on cuts to check bleeding (Gendu, Balasore, Rath, 2942).

The same information was further confirmed from Bhadrak (Ojha, 4995), Kendrapara (Tripathy, 6830).

*Tridax procumbens* L.

1. Extracted leaf juice is poured in ear as eardrop to get relief from earache (Vishalyakarani, Bhadrak, Sahu, 0126).

2. A handful of roots boiled in Jada (*Ricinus communis*) oil, cooled and strained. The filtrate is applied locally on affected joints to get relief from joints pain. (Vishalyakarani, Phulbani, Kondhs, 0244).
3. Crushed leaves are applied on minor cuts to check bleeding (Vishalyakarani, Phulbani, Kondhs, 0244).
4. Medicinal use of this species as an anti-inflammatory and analgesic agent for cuts is quite popular through out the state both among tribal and rural population. The use has been recorded from wide range of ethnic communities from different geographical regions of the state such as Phulbani (Kondhs, 0445), Mayurbhanj (Santals, 0751), Kalahandi (Bhumij, 1043), Malkangiri (Bondos, 1665), Dhenkanal (Kondhs, 2656), Athgarh (Barik, 3162), Sundargarh (Kharias, 3645), Bolangir (Gonds, 4114), Puri (Saoras, 4480), Bhadrak (non tribals, 5094, 5158), Keonjhar (Bhumij, 5307), Gajapati (Saoras, 6450), Jajpur (Sethi, 6604), Kendrapara (Jani, 6742), Bargarh (Bhoi, 6874), Jagatsinghpur (Das, 7044).
5. Leaf decoction is taken (one teaspoon, two times daily) to treat intestinal ulcer caused due to high fever (Vishalyakarani, Mayurbhanj, Kols, 1406).
6. A handful of leaves are made into paste and applied on forehead to get relief from headache caused due to fever (Vishalyakarani, Balasore, Sahu, 2122).
7. Extracted leaf juice is applied on whitlow – a kind of nail infection (Aphuli, Balasore, Santals, 2463).
8. A handful of leaves are made into paste, heated and applied on infested wounds of farm animals for healing (Vishalyakarani, Dhenkanal, Kondhs, 2656).
9. The above information was further confirmed from Bonai (Bhuinyas, 4684).
10. Crushed flowers are advised to smell which cause sneezing to get relief from cold and headache (Vishalyakarani, Bhadrak, Kols, 3560).
11. Crushed leaves are applied warm on boils for suppuration (Vishalyakarani, Balasore, Bhumij, 4006).
12. Extracted leaf juice (warm) is used as ear drops to get relief from earache. (Phulguma, Bolangir, Gonds, 4114).
13. Leaf juice in desired quantity is taken to get relief from abdominal pain. (Phulguma, Bolangir, Gonds, 4114).
14. Extracted leaf juice with pinch of edible salt is used warm as eardrops to get relief from earache. (Vishalyakarani, Bargarh, Bhoi, 6874).
15. Crushed leaves are applied as antidote to bite of scorpion. (Vishalyakarani, Bargarh, Bhoi, 6874).
16. Extracted leaf juice is used as eye drop to treat redness, inflammation of eye (Vishalyakarani, Bargarh, Bhoi, 6874).

*Vernonia anthelmintica* (L.) Willd.

1. Seed decoction with desired quantity of honey is taken (one teaspoon, two times daily) to treat diarrhoea (Somraj, Dhenkanal, Kondh, 2554).
2. Extracted leaf juice is applied on skin eruption (Balijanda, Athgarh, Kondh, 3298).

*Vernonia cinerea* (L.) Less.

Powdered plant (10-20 gm) is advised to drink with 125 ml milk (mixed with 5-7 Cardamom and (10 gm sugar candy) once every morning, empty stomach for about three months to treat filariasis (Pokosunga, Bhadrak, Mrs. Das, 5613).

*Vicoa indica* (L.) DC.

1. Crushed plant is boiled in sufficient mustard oil, cooled and strained. Filtrate is applied on affected joints to get relief from rheumatic joints pain (Rasanajadi, Phulbani, Kondhs, 0237).
2. The same information was further confirmed from Nuapada district (Saoras, 1992).
3. Powdered root (3-5 gm, two times daily) is given with sufficient water to alleviate fever in children (Sabli, Phulbani, Kondhs, 0341).
4. Fresh root is chewed raw to treat abdominal pain. (Thamsiblen, Malkangiri, Bondos, 1687).
5. Dried leaves and stems are burnt and made into ash. It is mixed with edible oil and applied warm on glandular swellings (Thamsiblen, Malkangiri, Bondos, 1687).
6. Extracted flower juice is given (5 ml, two times daily) with honey to get relief from severe cold and cough in children (Indramarish, Dhenkanal, Ojha, 3080).
7. Crushed plant is kept over night in sufficient water, strained and drunk in desired quantity every morning to get relief from constipation (Mugdhaparni, Bolangir, Gonds, 4244).
8. 3 cm piece of root is worn as an amulet in ear to get relief from earache (Rasna, Bonai, Paudi Bhuinyas, 4626).

*Xanthium indicum* Koenig.

1. A handful of fruits made into paste and applied locally on the scars of smallpox (Gokhru, Phulbani, Kondhs, 0577).
2. Extracted seed oil is applied on skin infections (Gokhru, Bolangir, Gonds, 4194).
3. Extracted leaf juice is applied on cuts to check bleeding (Gokhru, Bhadrak, Das, 4968).
4. Root is one of the ingredients of a composite drug prescribed for the treatment of filariasis. (Gokhru, Kendrapara, Mahapatra, 6390).
5. Leaf juice is applied on scabies (Gokhru, Kendrapara, Mahapatra, 6390).

## Discussion

### Diversity in usage

Noteworthy instances of diversity in ethnomedicinal uses are seen, particularly in the genera *Blumea*, *Eclipta* and *Elephantopus*.

### Genus: Blumea

Whole plant of *Blumea lacera* is used for gastric disorders in Balasore, for body ache and sprain in Bhadrak and for swelling in Kendrapara among non-tribal population of these coastal regions of Orissa. Root of this species is prescribed in bed-wetting of children among Kol tribe of Balasore district.

Leaf of *Blumea aurita* is used on cuts to check bleeding by non-tribal in Bhadrak district, *B. fistulosa* is used to treat headache among Kharia of Sundargarh and *B. membranacea* whole plant to get relief from body pain in Orissa.

### Genus: Eclipta

Leaf of *Eclipta prostrata* is widely used for over a dozen disease/conditions among tribal and non-tribal population throughout the state. It is used for malnutrition among Kol of Mayurbhanj; as veterinary medicine among Kondhs of Dhenkanal and Rout of Jajpur; for cuts among tribal and non-tribal groups of Balasore, Bargarh, Bhadrak and Jagatsinghpur districts. For stomatitis, sluggishness of liver, madness and scabies among non tribal group of Bargarh district; for cold, headache and jaundice by Misra of Kendrapara; for dysentery and to kill lice among rural population of Bhadrak and for skin eruption among Barik of Athgarh district are note worthy.

### Genus: Elephantopus

*Elephantopus scaber* is one of the most popular and widely used plant species for over twenty disease /conditions in the state. Root is largely employed either singly or in combination with other drugs in most of the disease/conditions recorded.

Root of the plant is used for diarrhoea among Kondhs of Kandhamal and Dhenkanal districts, Saora of Puri district, Bhumij of Keonjhar district and Bathuris of Mayurbhanj district. It is prescribed for fevers like Malaria among Kondhs of Kandhamal, Filarial fever among Bhumij of Kalahandi and fever caused by evil effect of spirit among Paudi Bhuiyans of Bonai; for dysentery

with bloody stools among non-tribals of Athgarh and Bolangir regions. For dental complaints like Pyorrhoea among Bondos of Malkangiri and toothache among Bhumij of Keonjhar district; for snake bite among Bondos of Malkangiri and Kharias of Sundargarh; for respiratory tract disorders like Bronchitis among Kondhs of Kandhamal and cough/cold among Bhumij of Kalahandi. Besides the root is also prescribed to remove placenta during delivery by Bhumij of Kalahandi; for vomiting by Bathuris of Mayurbhanj; for migraine by Bondos of Malkangiri; for jaundice by Bhumij of Keonjhar, to break and remove stones from kidney by Sahu of Balangir and to treat menstrual disorders by Das of Balasore district are note worthy.

#### ***Hitherto unknown or less known uses:***

Out of the uses presented in the paper, following were found to be new or less known when compared with published literature on ethno-medicine of the state (Das and Misra, 1987; Jain, 1991; Aminuddin and Girach 1991; Aminuddin et al., 2009; Satapathy and Panda, 1992; Girach 1992; Girach *et al.*, 1994, 1998, 2006; Sahoo and Satapathy, 2009; Panda, 2007).

- a. Use of root of *Elephantopus scaber* for filariasis and to remove kidney stones.
- b. Use of *Enydra fluctuans* in blood pressure and night blindness.
- c. Use of *Launaea acaulis* in diabetes.
- d. Use of *Tridax procumbens* in whitlow.

#### **Conclusion**

Ethno-pharmacological diversity in the family Asteraceae recorded so far from the state of Orissa is quite rich. It emphasizes on one hand the urgent need for scientific evaluation of some of these claims and on the other hand, it provides clue for intensive ethno-botanical work among under-explored ethnic groups like Munda, Mankadia, Paroja and primitive tribes like Bondo, Paudi Bhuinya and other bio-diversity rich areas like mangrove forests in the state.

#### **Acknowledgements**

The authors are grateful to the Director General, Central Council for Research in Unani Medicine, New Delhi and Deputy Director, Regional Research Institute of Unani Medicine, Bhadrak, for encouragement and taking keen interest in this work. Necessary help and cooperation extended by state forest officials is duly acknowledged. Authors are indebted to large number of tribal/rural informants, who agreed to share valuable first hand information on local uses of medicinal plants growing in their vicinity.

Folk Medicinal Plants of Asteraceae in Orissa



Fig. 1. *Ageratum conyzoides* L.



Fig. 2. *Blumea lacera* (Burm. f.) DC.



Fig. 3. *Eclipta prostrata* (L.) L.



Fig. 4. *Elephantopus scaber* L.



Fig. 5. *Emjundra fluctuans* Lour.



Fig. 6. *Sphaeranthus indicus* L.

Folk Medicinal Plants of Asteraceae in Orissa



**Fig. 7. *Tridax procumbens* L.**



**Fig. 8. *Vernonia cineria* (L.) Less.**



**Fig. 9. *Vicoa indica* (L.) DC.**



**Fig. 10. *Xanthium indicum* Koenig.**

## References

- Aminuddin and Girach, R.D., 1991. Ethnobotanical studies of Bondo tribe of District Koraput (Orissa), India. *Ethnobotany* 3: 15 – 20.
- Aminuddin and Girach, R.D., 1993. Observations on ethnobotany of the Bhunjia – A tribe of Sonabera plateau. *Ethnobotany* 5: 83 – 86.
- Aminuddin, Girach, R.D. and Singh V.K., 2009. Ethnopharmacological studies on *Careya arborea* Roxb. from Orissa. *Hippocratic Journal of Unani Medicine* 3 (2): 101- 113.
- Anonymous, 2001. Medicinal Plants in Folklores of Bihar and Orissa. C.C.R.U.M., New Delhi.
- Anonymous, 2006. Medicinal Plants in Folklores of Orissa. C.C.R.U.M., New Delhi.
- Brahmam, M., Dhal N. K. and Saxena H.O., 1996. Ethnobotanical studies among the Tanla of Malyagiri hills in Dhenkanal district, Orissa, India. In: S.K Jain (ed.) *Ethnobiology in Human welfare*. Deep Publications, New Delhi, pp. 393 – 396.
- Brahmam, M. and Saxena, H.O., 1990. Ethno-botany of Gandhamardan hills – Some noteworthy folk medicinal uses. *Ethnobotany* 2: 71 – 80.
- Das, P.K., and Misra, M.K., 1987. Some medicinal plants used by the tribals of Deomali and adjacent areas of Korapur district, Orissa. *Indian J. Forestry* 10: 301 – 303.
- Girach, R.D., 1992. Medicinal plants used by Kondh Tribe of District Phulbani (Orissa) in Eastern India. *Ethnobotany* 4: 53 – 66.
- Girach, R. D., Aminuddin, Siddiqui, P.A. and Khan, S.A., 1994. Traditional plant remedies among the Kondh of district Dhenkanal (Orissa). *International Journal of Pharmacognosy* 32: 274 -283.
- Girach, R.D., Aminuddin, Ahmad, M., Brahmam, M. and Misra, M.K., 1996. Native phytotherapy among rural population of district Bhadrak, Orissa. In: S.K. Jain (ed.) *Ethnobiology and Human Welfare*. Deep Publications, New Delhi, pp. 162 – 164.
- Girach, R.D., Aminuddin and Mushtaq, Ahmad, 1998. Medicinal Ethnobotany of Sundargarh, Orissa, India. *Pharmaceutical Biology* 36 (1): 20 – 24.
- Girach, R.D., Aminuddin, Singh, V.K. and Siddiqui, M.K., 2006. Ethnomedicinal plants in skin care from Orissa, India. In *Recent Progress in Medicinal Plants Vol. 15 – Natural Products* (Eds: V.K. Singh, J. N. Govil, Khalil Ahmed and Rajeev Kr. Sharma). Studium Press L.L.C., Texas, USA pp. 11–78.

- Jain, S.K. 1991. Dictionary of Indian Folk Medicine and Ethnobotany. Deep Publications, New Delhi.
- Mudgal, V. and Pal D. C., 1980. Medicinal plants used by tribals of Mayurbhanj (Orissa). *Bull. Bot. Surv. India* 22: 59 – 62.
- Mukherjee, A. and Namhata D., 1990. Medicinal Plantlore of the tribals of Sundargarh district, Orissa. *Ethnobotany* 2: 57 – 60.
- Panda, B.K., 2007. Some ethnomedicinal Plants of Karlapat Reserve Forest, district Kalahandi, Orissa. *Ethnobotany* 19: 134 – 136.
- Sahoo, B.B. and Satapathy, K.B., 2009. Plants used by the Tribals and Rural folks for common ailments in Jajpur district (Orissa). *Ethnobotany* 21 (1& 2): 107 – 111.
- Satpathy, B. and Panda, P.C., 1992. Medicinal uses of some plants among the tribals of Sundargarh district, Orissa. *J. Econ. Tax. Bot. (Addl. Ser.)* 10: 241 – 250.
- Saxena, H.O. and Brahmam, M., 1996. The flora of Orissa, Vol. IV. Regional Research Laboratory (RRL), CSIR, Bhubaneswar.
- Saxena, H.O., Brahmam, M. and Dutta, P. K., 1981. Ethnobotanical studies in Orissa. In: S.K. Jain (ed.) Glimpses of Indian Ethnobotany. Oxford & IBH, New Delhi, pp. 232 – 244.
- Saxena, H.O., Brahmam, M. and Dutta, P. K., 1988. Ethnobotanical studies in Simili Pahar forests of Mayurbhanj district, Orissa. *Bull. Bot. Surv. India* 30: 83 – 89.
- Saxena, H.O. and Dutta, P.K., 1975. Studies on Ethnobotany of Orissa. *Bull. Bot. Surv. India* 17: 124 -131.
- Tribedi, G.N., Kayal, R.N. and Chaudhury, Rai H.N., 1982. Some Medicinal Plants of Mayurbhanj (Orissa). *Bull. Bot. Surv. India*. 24: 119 – 120.
- Varghese, E.S.V.D., 1996. Applied Ethnobotany: A case study among the Kharias of Central India. Deep Publication, New Delhi.

