

STUDY OF ETHNOMEDICINAL VALUES OF SOME SHRUBS IN ROURKELA STEEL CITY AND ITS SURROUNDINGS, SUNDARGARH, ODISHA

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ABSTRACT: During the survey it was found the total 30 numbers of shrubs in and around Rourkela which is locally available and used by the people of the villages. All the 30 dicot shrubs belong to 18 families. Among the shrubs studied, *Calotropis gigantea*, *Vitex negundo*, *Lawsonia inermis* were of highly medicinal values. The other remaining shrubs were also found with medicinal values for different diseases. Out of the 30 shrubs, most of the plants were used for cough, cold and fever. Then these shrubs are also used for malaria, dysentery, skin diseases, eye problems, and also for other diseases.

Key words: Ethanomedicine, Shurbs, Rourkela city

INTRODUCTION

Ethno-botany is the study of the relationship between plants and human. It includes the study of food, fibres, dyes, tans, useful and harmful plants, and even magico religious beliefs about plants (Jain, 1995). Ethnobiology must have been the first knowledge which the early man perhaps had acquired by sheer intuition, observation, experimentation and necessity for survival. The focus of the ethnobotany is on how plants have been are used, managed and perceived in human societies.

Study Area

Rourkela, in the north-eastern part of Odisha state is one of the major steel industrial centres of India and regarded as the industrial capital of the Odisha. Rourkela is located at Sundargarh district about 245 km from the shore line of Bay of Bengal. It is located at 20°12' North latitude and 84° 53' longitude, at the elevation about 219 meters above the mean sea level.

Methodology

The study was conducted in and around Rourkela during Aug 2011-Dec2011. It was selected based on the criteria such as familiarity (hometown) of researchers with the village and accessibility. The semi-structured interviews, focus group discussions, mainly on the following questions, and key informants surveys were carried out in order to collect information from local people. The feedback forms were analyzed to know the medicinal values of the shrubs available in and around Rourkela. In the present investigation made during 2011, 30 species belonging to 18 families have been collected from in and around Rourkela. Their medicinal values have been studied, which are given below.

RESULTS

The feedback forms were analyzed to know the medicinal values of the shrubs available in and around Rourkela. In the present investigation made during 2011, 30 species belonging to 18 families have been collected from in and around Rourkela. Their medicinal values have been studied, which are given below. (Table-1).

1. *Abutilon indicum* (L.) Sweet.

Family- Malvaceae (O) – Pedipedica

- i. Leaves with black peppers are grinded to make paste and the paste is taken orally to cure jaundice.
- ii. Root paste is used in jaundice and piles.
- iii. Plant paste with rice water is taken twice daily to cure dysentery.
- iv. 1 spoon of dry leaves for 1 month is taken daily 3 times for curing problems.

2. *Adhatoda vasica* L.

Family- Acanthaceae (O)- Basanga

- i. Leaf is boiled in water and the water is taken to cure rheumatism, cold, fever, malaria etc.
- ii. Plant decoction with honey is taken twice for 7 days for jaundice.
- iii. Root bark decoction with honey is taken orally to cure asthma.
- iv. Leaves are used to cure persistent cough.
- v. In skin diseases, the leaves juice is also used.

3. *Annona squamosa* Linn

Family- Annonaceae (O)-Ata

- i. Leaf paste is applied on the door to check entry of insects into house.
- ii. Dried leaf ash is used as shampoo to kill lice.
- iii. Leaf juice applied on itches and boils to kill worms.
- iv. Leaf juice is used as an antiseptic in animal wounds.
- v. Fresh leaf paste is slightly warmed and applied externally for early maturation of boils.

4. *Barleria prionitis* L

Family- Acanthaceae (O)-Daskaranta

- i. Leaf paste is used in cut and wounds.
- ii. Fresh leaves are chewed to cure toothache.
- iii. Fresh leaf paste with honey is taken to clear intestinal worm.

5. *Bauhinia vahlii* Wt.& Arn.

Family-Caesalpinaceae (O)- Sialipatra

- i. Roasted seed is eaten as proteaceous seed.
- ii. Root bark decoction is used for treating inflammation of liver.

6. *Caesalpinia pulcherrima*(L.) Swartz.

Family-Caesalpinaceae (O)-Radhachuda

- i. The decoction of fresh seeds is used as mouthwash which relieves pain in gums due to inflammation.

7. *Calotropis gigantea* R.Br.

Family-Asclepiadaceae (O)-Arakha

- i. The milky latex of the plant is applied to relieve pain due to migraine.
- ii. Dry flower with ghee is taken to cure asthma.
- iii. Plant latex is applied on forehead to get relief from migraine and headache.
- iv. Warmed leaves with oil are applied in inflamed parts of the body.
- v. Leaves ash with honey is used to cure asthma and bronchitis.

8. *Cassia occidentalis* L.

Family- Caesalpinaceae (O)-Kalachakunda

- i. Root and leaf paste is taken and applied in stomach pain and scorpion bite.
- ii. Seed decoction is used for whooping cough.
- iii. Leaf juice is used as purgative.
- iv. Leaf juice is also applied on skin diseases.

9. *Chenopodium album* L.

Family- Chenopodiaceae (O)-Bathuasaga

- i. The leaves are taken as vegetable.
- ii. The leaf is also used to cure piles.
- iii. It increases the power of the body.
- iv. The plant is also used for killing intestinal worms.
- v. Leaf also eaten by the heart patient to get relief from heart diseases.

10. *Cissus quadrangula* L

Family- Vitaceae (O)- Hadabhanga

- i. The stem paste is applied on bone crack and bone fracture.
- ii. Tender stems and crushed leaves with milk is given to infants in fever.

11. *Clerodendrum viscosum* Vert.

Family-Verbenaceae (O)-Kharkhari

- i. Fruit is taken internally and fruit paste applied externally in dog bite for 3 days.
- ii. Root with black pepper is used to cure mumps, mouth ulcers and angular stomatitis.

12. *Datura fastuosa* L.

Family- Solanaceae (O)- Dhaladudura

- i. Leaf paste is used for ear pains and hair loss.
- ii. Root is used to check abortion for pregnant lady.
- iii. Leaf juice is slightly warmed and the boiled juice is applied on the affected part during rheumatism.

13. *Desmodium gangeticum* (L.) DC

Family- Fabaceae (O)-Shalaparni

- i. Stem and bark paste is applied on the affected part for goiter remedy.
- ii. Plant paste is applied on the bone fracture for binding it.

14. *Dioscorea bulbifera* L

Family- Dioscoreaceae (O)-Pitakanda

- i. Paste of rhizome is taken internally for stomachache.
- ii. Root powder is applied externally in cases of hernia and hydrocele.
- iii. Tuber powder is applied on scorpion bite, wound.

15. *Gymnema sylvestre* (Retz)R.Br.ex Sch.

Family- Asclepiadaceae (O)-Gudamari

- i. Dried or fresh leaf taken orally to reduce sugar level.
- ii. Root paste is used in snake bite also.
- iii. Root or leaf juice is used in case of intestinal worm.

16. *Holarrhena pubescens* (Buch-Ham) Wallex G.Don.

Family-Apocynaceae (O)-Kerua

- i. The root paste is applied on snakebite to cure snake bite.
- ii. Water extract of bark is given to cure blood dysentery.
- iii. Root paste is applied on cut, wound, abscess and boils.

17. *Ixora pavetta* Andr.

Family- Rubiaceae (O)-Telakuri

- i. Stem bark extract is taken 2 spoons in jaundice for 9 days.

18. *Jatropha gossypolia* L.

Family- Euphorbiaceae (O)-Baigaba

- i. Stem is used as toothbrush in swollen gums and caries teeth.
- ii. Leaf paste applied to heal cut and wounds.
- iii. Stem twigs are used as toothbrush to cure toothache.

19. *Lantana camara* L.

Family- Verbenaceae (O)-Putus

- i. Fresh leaf juice is applied on fresh wounds immediately to effective stop bleeding.

20. *Lawsonia inermis* L.

Family- Lytharaceae (O)- Mehendi

- i. Leaf, bark and root paste is used for jaundice.
- ii. Leaf and bark paste is used for mouth ulcer and fever.
- iii. Root paste with black pepper is taken in empty stomach to cure jaundice.
- iv. Leaf paste is used for making strong and smooth of the hair.
- v. Leaf paste also used for killing lice and dandruff.

21. *Nyctanthes arbor-tristis* L

Family- Oleaceae (O)- Gangasiuli

- i. Leaf is used in dysentery and malarial fever.
- ii. Seed powder is rubbed on the teeth to cure bleeding gums.
- iii. Leaf boil is used in fever and headache.
- iv. Seed paste is applied over scalp in baldness.

22. *Paederia foetida* L

Family- Rubiaceae (O)- Prasaruni

- i. Leaf paste and root paste is used in joint pain and body ache.
- ii. Leaf paste is also taken for indigestion.
- iii. Root decoction with honey 4-5 times per a day to cure diarrhea and dysentery.
- iv. The leaf juice is taken for gastric problems.

23. *Plumbago zeylanica* L

Family- Plumbaginaceae (O)- Chitaparu

- i. Root is taken in diarrhea.
- ii. Root paste with black pepper is taken orally as an abortifacient.
- iii. Plant paste is used to heal wound and cuts.

24. *Rauolfia tetraphylla* L.

Family- Apocynaceae (O)- Patala garuda

- i. Root paste is fed to the victim slowly in snakebite root.
- ii. Root bark decoction is taken daily for control blood pressure.

25. *Ricinus communis* L.

Family- Euphorbiaceae (O)- Gaba

- i. Root paste and seed oil is used in rheumatism, burn and wound.
- ii. Seed oil with *Calotropis procera* leaf juice to cure bleeding piles and fissures.
- iii. Stem and bark decoction is used in rheumatism swellings and arthritis.
- iv. The seed oil with Aloe juice if used, it gives relief in piles.

26. *Sesbania grandiflora* (L.)Poir.

Family- Fabaceae (O)- Agasthi

- i. Leaf is used in skin lice.
- ii. Fresh root decoction is given twice a day for 3-4 days as an antifertility agent after menstrual over.
- iii. Flower juice is used to improve eye sight.
- iv. The flower juice or leaf juice if dropped in nostrils in case of migraine.

27. *Tinospora cordifolia* (Willd.)Hook.f.& Thoms

Family- Menispermaceae (O)- Guluchi

- i. Stem and leaf is used in malaria, vomiting, cough.
- ii. Stem powder with honey is taken twice daily to cure headache.
- iii. Stem juice is used for cure diabetes.
- iv. The boiled stem water is used to cure any type of fever.

28. *Vitex negundo* L.

Family- Verbenaceae (O)- Begunia

- Fresh leaf juice mixed in honey is taken on empty stomach in asthma.
- Fresh leaves are boiled in water till vaporization and the vapours are inhaled through mouth to reduce cough.
- Fresh leaf juice mixed in castor oil and applied on the head for relief from headache.
- Leaves are chewed to promote healing of ulcers in mouth.
- Root decoction is used twice daily in empty stomach to cure rheumatism.

29. *Withania somnifera* (L.)Dunal.

Family- Solanaceae (O) –Aswagandha

- Root paste is used in piles, cough, and fever.
- Root powder taken every morning to cure asthma.
- Leaf tea is taken for curing cold and cough.
- Dry root powder with cow's milk is taken orally for increasing the fertility in women for conception and also used in constipation.

18. *Woodfordia fruticosa* (L.)Kurz.

Family- Lytharaceae (O)- Dhatuki

- Stem and flower is used in unconsciousness.
- Flower paste with curd if taken it helps in diarrhea.
- The dried flower powder used in cut and wound.
- Leaf juice used as blood purifier.

Table-1: Medicinal values of plants

S.No	Scientific Name	Family	Local Name	Parts Used	Uses
1	<i>Abutilon indicum</i>	Malvaceae	Pedipedica	leaves. Root	Jaundice, dysentery
2	<i>Adhatoda vasica</i>	Acanthaceae	Basanga	leaves. Root,Bark	Cold, fever, malaria
3	<i>Annona squamosa</i>	Annonaceae	Ata	Leaves, Leaf ash	Lies. Worms
4	<i>Barleria prionitis</i>	Acanthaceae	Daskaranta	Leaf	Cut, wound, toothache
5	<i>Bauhinia vahli</i>	Caesalpiniaceae	Siali	Root,seed	Inflammation
6	<i>Caesalpinia pulcherima</i>	Caesalpiniaceae	Krushnachuda	Leaves	Gum inflammation
7	<i>Calotropis procera</i>	Asclepiadaceae	Arakha	Flower, milky latex	Asthma,migraine
8	<i>Cassia occidentalis</i>	Caesalpiniaceae	Kakachakunda	Leaves, Root, seeds	Whooping cough, skin diseases
9	<i>Chenopodium album</i>	Chenopodium	Bathuasaga	Leaves	Piles, intestinal worm, heart diseases
10	<i>Cissus quadrangular</i>	Vitaceae	Hadabhanga	Stem	Fever, bonefracture
11	<i>Clerodendrum viscosum</i>	Verbenaceae	Kharkhari	Root	Mouth ulcer,mumps
12	<i>Datura fastuosa</i>	Solanaceae	Dhaladudura	Leaves, Root	Earpain, hairloss, rheumatism.
13	<i>Desmodium gangeticum</i>	Fabaceae	Shalaparni	Stem,bark	Goiter,bone fracture
14	<i>Dioscorea bulbifera</i>	Dioscoreaceae	Pitakanda	Root	Stomacheache, wounds
15	<i>Gymnema sylvestre</i>	Asclepiadaceae	Gudamari	Leaves,Root	Sugar, intestinal worm
16	<i>Holarrhena pubescens</i>	Apocynaceae	Pitakeruan	Root	Snakebite, blood dysentery

Table-1 cont...

S.No	Scientific Name	Family	Local Name	Parts Used	Uses
17	<i>Ixora pavetta</i>	Rubiaceae	Kukurchalia	Stem,bark	Jaundice
18	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Baigaba	Stem, Leaves	Cut, wound, tooth brush
19	<i>Lantana camara</i>	Verbenaceae	Putus	Leaves	Bleeding
20	<i>Lawsonia inermis</i>	Lytharaceae	Manjuati	Leaves, bark, root	Jaundice, fever, lice
21	<i>Nyctanthes arbor tristis</i>	Oleaceae	Gangasiuli	Leaves, Stem, bark	Fever, Malaria
22	<i>Paederia foetida</i>	Rubiaceae	Prsaruni	Leaves, Root	Bodyache, gastric, dysentery
23	<i>Plumbago zeylanica</i>	Plumbaginaceae	Chitaparu	Root	Diarrhoea, cut , wounds
24	<i>Rauolfia tetraphylla</i>	Apocynaceae	Patalagaruda	Root	Snakebite, pressure, mental disorder
25	<i>Ricinus communis</i>	Euphorbiaceae	Gaba	Seeds, Root	Piles, Fissures
26	<i>Sesbania grandiflora</i>	Fabaceae	Agasthi	Leaves, Root, flowers	Migraine, Skin, lice
27	<i>Tinospora cordifolia</i>	Menispermaceae	Guluchi	Stem, Leaves	Malaria, vomiting
28	<i>Vitex negundo</i>	Verbenaceae	Begunia	Leaves, Root	Stomacheache, asthma, cough
29	<i>Withania somnifera</i>	Solanaceae	Aswagandha	Root, Leaves	Cold, Cough
30	<i>Woodfordia fruticosa</i>	Lytharaceae	Dhatuki	Flowers, leaves	Blood purifier, cut, wounds

DISCUSSION

During the survey it was found the total 30 numbers of shrubs in and around Rourkela which is locally available and used by the people of the villages. All the 30 dicot shrubs belong to 18 families. During the survey of the area it was resulted that the area is dominated by Euphorbiaceae and Caesalpiniaceae family with 3 numbers of shrubs each. Then the area is dominated with the families Acanthaceae, Asclepiadaceae, Solanaceae, Apocynaceae, Rubiaceae, Lytharaceae, Plumbaginaceae, Oleaceae, Menispermaceae, and Dioscoreaceae. Among the shrubs studied, *Calotropis gigantea*, *Vitex negundo*, *Lawsonia inermis* were of highly medicinal values. The other remaining shrubs were also found with medicinal values for different diseases. Out of the 30 shrubs, most of the plants were used for cough, cold and fever. Then these shrubs are also used for malaria, dysentery, skin diseases, eye problems, and also for other diseases.

CONCLUSION

Generally the shrubs are perennial. During the survey, it was found that most of the shrubs are common to the villagers and local people. It was found that most of the shrubs were found at forest sites. The shrubs are used by the villagers for their medicinal values and also for food, fodder, and fuel purposes. Due to biotic factors and industrialization these shrubs are growing and decreasing. During the study it was also found that, less number of people is known about the medicinal values of the shrubs and their traditional medicinal values. Due to less known about the shrubs, all should know about the medicinal values of these shrubs.

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