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ETHNOMEDICINAL PLANTS USED TO CURE SCORPION STING BY THE PEOPLE OF BARGARH DISTRICT IN ODISHA (INDIA)

Sunil Kumar Sen*[1], Mihir Ranjan Pattnaik[2], Lalit Mohan Behera[3]

1. Department of Botany, Panchayat College Bargarh: 768028, Odisha
2. Bargarh Range Office, Gandhi Chowk, Bargarh: 768028, Odisha
3. Ex-Reader in Botany, Modipara (Near Water Tank), Sambalpur: 768001, Odisha

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For Correspondence:

Dr. Sunil Kumar Sen

Department of Botany, Panchayat College Bargarh: 768028, Odisha

E-mail:

sunilsen06@rediffmail.com

ABSTRACT

Herbal medicines are used widely by the rural people, as they are readily available in the vicinity of their homes. A field survey was conducted in the rural areas of Bargarh district for studying the medicinal plants used by the local inhabitants. During the course of ethnobotanical exploration a number of plant species have been collected which are used for treatment of various ailments and diseases. The survey was carried out with the cooperation of local traditional healers. Insect bites are very common in the fringing forest villages. The present paper deals with the plant species which are used by the rural inhabitants to get relief from scorpion sting.

INTRODUCTION

Traditional medicine has a long history of serving people all over the world. Medicinal plants are the gift to mankind because they cure diseases without any side effects. Medicinal plants are an important element of indigenous medical systems in India as well as elsewhere. In recent years, the research on the use of traditional medicine has received considerable interest[1]. Nature has bestowed India with enormous wealth of medicinal flora. Moreover herbal medicines are used widely by the local people, as they are readily available in the vicinity of their homes.

Odisha (it was Orissa prior to 5th Nov, 2011) is an ancient land of temples and villages. It lies between 81° 24' and 87° 29' East and 17° 48' and 22° 34' North and is situated on the eastern cost of Indian peninsula. The diverse topography and variable climates along with sixty-two tribal communities provide immense opportunity for ethnobotanical explorations. In Odisha, there have been several contributions in the field of ethnomedicine[2-13].

Bargarh is one of the 30 districts of Odisha which came into existence on 1st April 1993. It lies between longitude 82° 39' and 83° 58' East and between latitude 20° 43' and 21° 41' North extending over an area of 5837 sq Km. The total population of the district is 13,45,601 out of which 12,42,101 are living in 1208 villages[14]. It also include the tribes like *Binjhal, Sahanra (Saora), Kondh, Gond, Munda, Kuli, Kalanga, Oran, Mirdha, Dharua, Kisan, Kharia,* and *Parja*. The total forest coverage of the district is 1216.13 sq Km. Majority of the tribes live in the forest villages and have their own socio-cultural systems, traditions and food practice[15].

The tribal and other rural people generally inhabit close to forest and mostly depend on forest and forest products for their day to day life. At times people suffer due to animals or insects bite/ scorpions sting. The tribal people have traditional knowledge of plants to kill or repel insects and cure themselves from insect bite[16-19]. In the present paper an attempt has been made to study the plant species used particularly for scorpion sting.

MATERIALS AND METHODS

Extensive field trips were conducted in some of the tribal dominated villages of Bargarh district during 2004-06 to collect plant materials and information on plant resources to prepare base line data. Information on ethnomedicinal plants used by the local tribals and other rural people for curing various diseases were collected through interview with traditional herbal medicine practitioners (*Vaidya*, *Kabiraj*) and experienced old men and women. Plant specimens collected during the survey were identified with the help of standard Flora books[20-22]. The identified plant

samples were critically analyzed in the light of information available in literatures[23-29]. The plant specimens collected during the survey are preserved in the herbarium of Botany Department, Panchayat College, Bargarh, Odisha.

RESULT AND DISCUSSION

The plants used for scorpion sting have been listed below in alphabetical order; each one with botanical name, family within parentheses, local name within inverted comma, locality and collection number, plant part(s) used and mode of administration.

1. ***Abelmoschus esculentus*** (L.) Moench (Malvaceae), 'Bhendi'

   Use: Ripe seed is crushed on a stone and is applied over the affected part.

2. ***Achyranthes aspera*** L. (Amaranthaceae), 'Kukurdanti', Nrusinghnath- 465

   Use: Root paste is applied on the affected part.

3. ***Artocarpus lakoocha*** Roxb. (Moraceae), 'Dahakdumer', Khandijharan- 360

   Use: Ripe fruit stalk is rubbed on a stone and the paste is applied on the affected part.

4. ***Calotropis procera*** (Aiton) Dryand. (Asclepiadaceae), 'Arakh', Beherapali-236

   Use: Milky latex is applied on the affected part. Equal amount milky latex of *Calotropis procera* (white variety) and *Allium sativum* bulb extract are mixed together and is applied on the affected part.

5. ***Carica papaya*** L. (Caricaceae) 'Amutmada', Beherapali-229

   Use: Milky latex is applied on the affected part.

6. ***Cissampelos pareira*** L. (Menispermaceae) 'Akanbindhi', Ramkhol-733

   Use: Leaf paste is crushed and applied on the affected part.

7. ***Desmodium triflorum*** (L.) DC. (Fabaceae) 'Jangli-methi', Ramkhol-729

   Use: Paste made from two and half leaf is applied on the affected part.

8. ***Lablab purpureus*** (L.) Sweet (Fabaceae), 'Semi', Ainlapali-298

   Use: Seed is rubbed on a stone with a little water and the paste is applied on the affected part.

9. ***Madhuca longifolia*** (Koenig ex L.) Macbr. (Sapotaceae) 'Mahul', Nrusinghnath-186

   Use: Bark paste is applied on the affected part.

10. ***Mangifera indica*** L. (Anacardiaceae) 'Aam', Ainlapali-105

    Use: Mango fruit and *Allium sativum* bulb crushed together and is applied on the affected part. Latex of Mango fruit stalk is also applied on the affected part.

11. ***Mimusops elengi*** L. (Sapotaceae) 'Baul', Khandijharan-598

Use: Seed paste is applied on the affected part.

12. ***Ocimum tenuiflorum*** L. (Lamiaceae) 'Tulsi', Nrusinghnath- 352

    Use: Equal amount of leaf paste and flower paste are mixed together and the paste (5 -10 gm) is taken once or twice daily.

13. ***Pergularia daemia*** (Forssk.) Chiov. (Apocynaceae) 'Uturdi', Ramkhol-719

    Use: Milky latex is applied frequently on the affected part.

14. ***Symphorema polyandrum*** Wight. (Lamiaceae) 'Badichang', Ramkhol-375

    Use: Seed paste obtained is applied on the affected part.

15. ***Sagitttaria trifolia*** Linn. (Alismataceae). 'Kukurjivi', Khandijharan-313

    Use: A leaf is crushed and poured into a piece of jaggery and is taken once daily during '*Harali parab*' (A festival observed during July. In this occasion the tribals worship all their agricultural implements by covering these with a white cloth and flowers.), which prevents from scorpion sting for one year. Oraons apply leaf paste on poisonous insect-sting (Pal and Jain, 1998).

16. ***Syzygium cumini*** (L.) Skeels (Myrtaceae) 'Jam', Samardhara- 441

    Use: Leaf paste is applied on the affected part.

17. ***Tinospora cordifolia*** (Willd.) Miers. (Menispermaceae) 'Gulchi', Ramkhol-232

    Use: Stem extract is applied on the affected part.

Table 1. List of Plant species with their part(s) utilized against scorpion sting

Sl.No.	Plannts Name	lx	lf	Sd	rt	st	bk	fr	fr s	lf + fl
1.	***Abelmoschus esculentus***			√						
2.	***Achyranthes aspera***				√					
3.	***Artocarpus lakoocha***								√	
4.	***Calotropis procera***	√√								
5.	***Carica papaya***	√								
6.	***Cissampelos pareira***		√							
7.	***Desmodium triflorum***		√							
8.	***Lablab purpureus***			√						
9.	***Madhuca longifolia***						√			
10.	***Mangifera indica***	√						√		
11.	***Mimusops elengi***			√						
12.	***Ocimum tenuiflorum***									√
13.	***Pergularia daemia***	√								
14.	***Symphorema polyandrum***			√						
15.	***Sagitttaria trifolia***		√							
16.	***Syzygium cumini***		√							
17.	***Tinospora cordifolia***					√				

Abbr: lx- latex, lf- leaf, sd- seed, rt- root, st- stem, bk- bark, fr- fruit, s- fruit stalk, fl- flower

The present data reveals that the tribals and rural people of this area have vast knowledge about medicinal uses of plants growing in their vicinity. The paper highlights on 17 plant species belonging to 13 families utilized by the tribes and other rural people of the district as remedy against scorpion sting. The extracts of the plant/ plant parts described are used in crude form. These crude herbal medicines are based mainly on traditional knowledge, rituals and beliefs. Out of 17 plant species, 19 prescriptions have been discussed in this paper. Further, out of 19 prescriptions reported, 18 are used to get relief from scorpion sting (17 species are utilized through external application and one species is taken orally) and one species is used for prevention (also taken orally). Again from these 19 prescriptions five are prepared from latex, four each from leaf paste and seed paste, one each from root paste, stem extract, bark paste, fruit (with bulb of *Allium sativum*), fruit stalk paste and one prescription is used from the combination of leaf and flower paste (Table-1). Percentage of plant parts used to cure and prevent scorpion sting are depicted in fig.1. So also percentage of plant parts used externally and internally and medicinal uses of different plant parts are shown in fig.2 and 3.

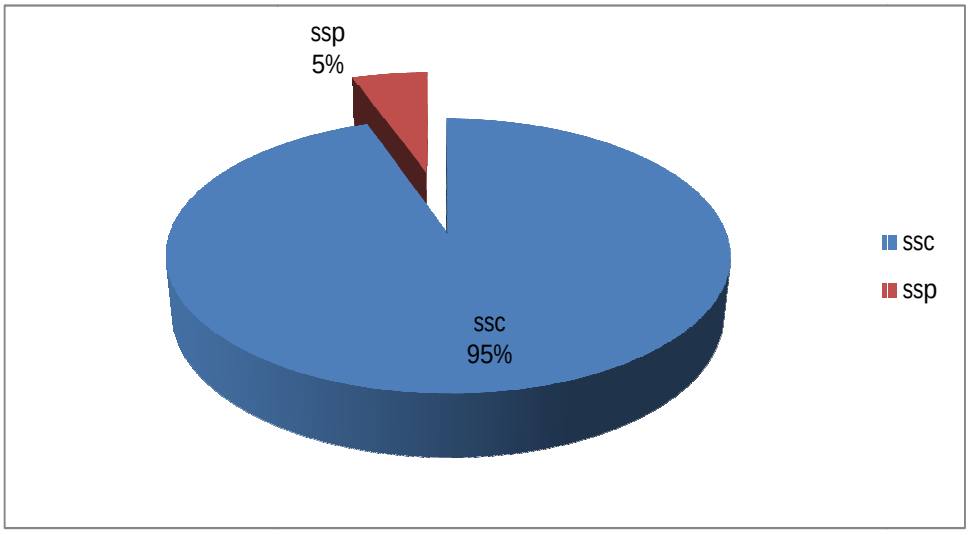

Fig.1- Percentage of plant parts used to cure and prevent scorpion sting (ssc-scorpion sting cure, ssp-scorpion sting prevention)

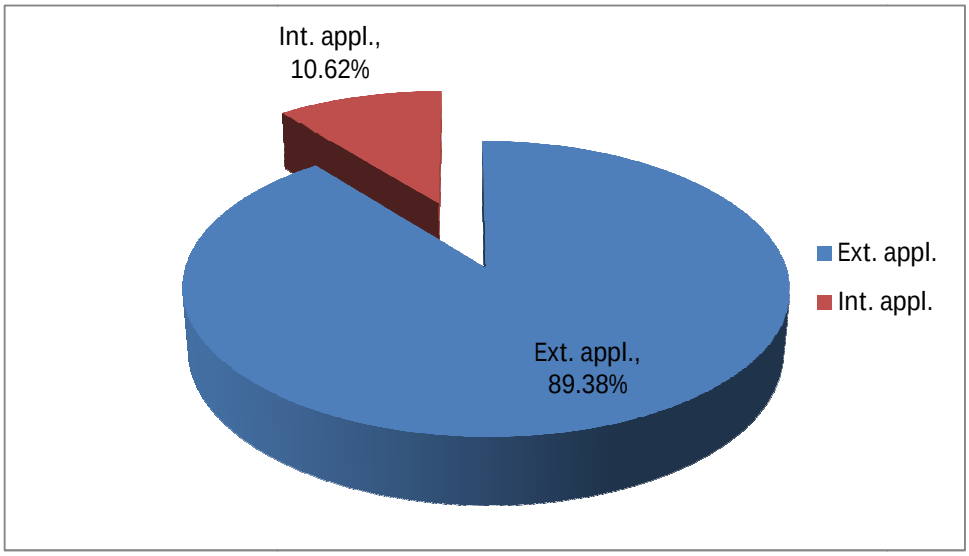

Fig.2- Percentage of plant parts use externally and internally (Ext.appl.-external application, Int. appl.- Internal application)

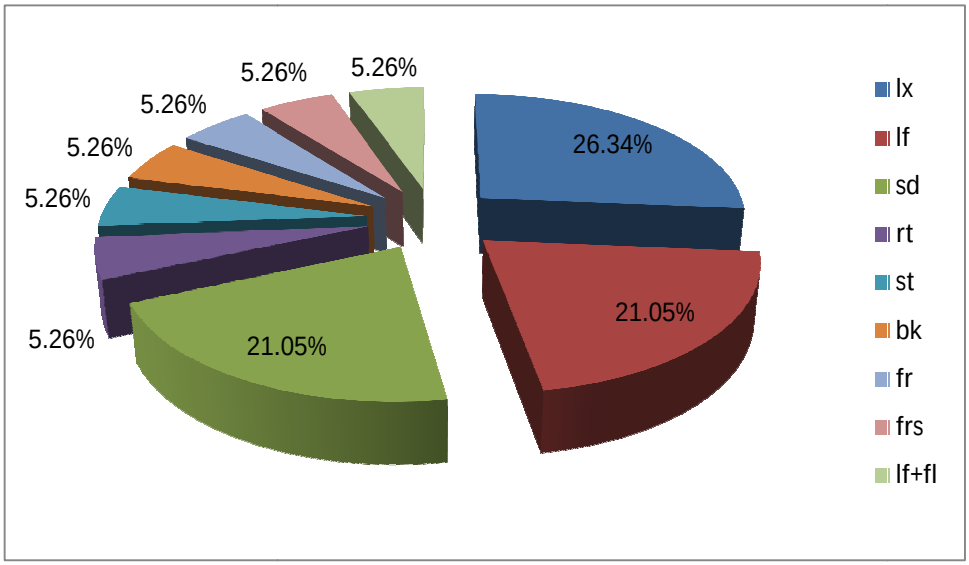

Fig.3- Medicinal uses of different plant parts

The tribes and other rural people are still utilizing a large number of plants for medicinal and other purposes. The ethnomedicinal uses of the plants reordered here for scorpion sting are reported for the first time from this area. However, plants like *Achyranthes aspera*, *Calotropis procera*, *Cissampelos pareira*, *Madhuca longifolia* and *Ocimum sanctum* are already reported. Leaf of *Achyranthes aspera*, latex of *Calotropis procera*, root of *Cissampelos pareira* and flower of *Madhuca longifolia* are reported to be utilized for scorpion sting[23]. Leaf of *Mangifera indica* and whole plant of *Ocimum tenuiflorum* are utilized for the purpose[26, 29].

CONCLUSION

Medicinal plants are the gift to mankind because they cure diseases without any side effects. Herbs have been playing a major role in curing various ailments and diseases from antiquity. Herbal medicines are used widely by the rural people, as they are readily available in the vicinity of their homes. The present investigation provides a base to draw the attention of scientists towards study of ethnomedicinally important plants for scorpion sting and other animal and insects bites. These ethnomedicinal plants are recommended for further pharmacological investigation for safe use by other people. There is also an urgent need for *in situ* and *ex situ* conservation for sustainable use of these plants.

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