



**ETHNOBOTANICAL STUDY BASED ON SURGUJA DISTRICT WITH SPECIAL REFERENCE
TO PLANTS USED BY URAON TRIBE IN SCORPION STING AND SNAKE BITE AND THEIR
TREATMENT**

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ABSTRACT

An Ethnobotanical survey was conducted in the Surguja district of Chhattisgarh, India, during the year 2011. Study was done in 10 villages of Surguja district involves various steps like field study in which 300 questionnaire was filled by the people of Uraon tribe and personal interview was conducted with 30 people in each village which included 15 male and 15 female people. Plant specimens were collected during the survey for the preparation of herbarium and identification of plants was done by following the flora of Haines and Hooker. In the present study 22 plant species belonging to 14 families were recorded, found to be used by Uraon tribe in Surguja district for the treatment of scorpion sting and snake bite. The method of drug preparation, drug administration and cost per episode was also recorded during the survey. The results of the study revealed that people of Uraon tribes have rich knowledge of plants and are using the plants for their health security like in treatment of scorpion sting and snake bite.

KEYWORDS: Ethnobotany, scorpion sting and snake bite, Medicinal plants, Uraon tribe.

1. INTRODUCTION

Surguja district which lies in the northern part of Chhattisgarh state is biodiversity rich area, dominated by tribal communities. Borders of Uttar Pradesh, Jharkhand, Orissa, and Madhya Pradesh states are adjoining to the district. The district has over extension between southeastern parts of Vindhya-Chal-Baghelkhand region of peninsular India. Surguja lies between 23°37'25" to 24°06'17" north latitude and 81°03'40" to 84°4'40" east longitude. The land area of Surguja is 16359 sq Km. the major tribes of Surguja region are the major tribes of Surguja region are Nagesiya, Baiga, Kanwar, Panika, Korwa and Uraon. Uraon is one of the dominating populations amongst all tribes found in Surguja. The tribal's are 55.4% of the total population. The total forest area in the region is 18,188.44 sq km which constitute 44% of the total area of the district. The tropical deciduous type of forest is found in Surguja district. In recent years, there has been renewed interest in the treatment against different diseases using herbal drugs as they are generally non-toxic and World Health Organization (WHO) has also recommended the evaluation of the effectiveness of the plants in condition where safe modern drugs are not available. Ethnobotany, the interaction between plants and people involves traditional use of medicinal plants by indigenous communities and management of plant diversity by the

aboriginals (Ishtiaq et al., 2007). Traditional herbal medicine is readily available in rural areas for the treatment of snakebite. Application of the plant or its sap onto the bite area, chewing leaves and bark or drinking plant extracts or decoctions are some procedures intended to counteract snake venom activity. Plants are used either single or in combination, as antidotes for snake envenomation by rural populations in India and in many parts of the world (Perumal Samy R et. 2008). Traditional people of Seshachalam hills, Andhra Pradesh, India use this plant with pepper and garlic against snakebite (Reddy et.al. 2009). In most of the societies the medical system coexists with several traditional systems. These traditional medical systems are generally based on the uses of natural and local products which are commonly related to the people's perspective on the world and life (Toledo BA et. al. 2009). Several ethnobotanical reports indicate the plant as a potent anti snake venomous (Rahmatullah, M et. al. 2010). Its use against snakebite with another traditional anti snakebite plant *Rauvolfia serpentina* has been reported in a review (Dey et.al. 2010) indicating certain plants' increased effectiveness when administered in combination (Dey et.al. 2010).

2. MATERIALS AND METHODS

The survey was carried out by following Jain and Singh (1997). Interviewees were chosen without distinction of gender after seeking the consent from each respondent. People of Uraon tribe from all age groups, except children below 18 years were interviewed for their knowledge about the uses of plant in treatment of diabetes. The random sampling technique was used and a total of 300 questionnaires (30 in each village which included 15 male and 15 female) were filled during the survey. Information regarding the vernacular name, habit of the plant and plant parts used in drug preparation for treatment of diabetes was recorded. Informants were asked to name the plant and to reveal the uses of the respective species in treatment of diabetes. Informants often accompanied with investigators collected the plant material from the field which is used in drug preparation. In cases of illiterate informants, photographs and fresh plant specimens from the field were presented to them and questionnaires were filled from their responses. Information was also recorded about the medicinal use of plant, plant parts used, diseases treated, modes of drug

preparation and administration. The cost of treatment / episode was also noted. Friendly chats were also made with teenagers, youngsters and school children of both genders of tribal people. Participatory and group interaction approach was used for further cross check of data. Surveys were also made in the wilderness along altitudinal transects reaching timber line zones, surrounding natural habitats and the agricultural areas of villages. The help of local people was taken for the collection of plants growing in the area. Plant species were identified by using Flora of Haines (1998) and Hooke (1872). The gathered field information was analyzed to draw an ethnomedicinal use of plants by Uraon tribe of Surguja district in treatment of scorpion sting and snake bite.

3. RESULTS

Ethnobotanical survey was carried out in the 10 villages of Surguja district of Chhattisgarh. A total of 22 plant species belonging to 14 families were found to be effectively used for treating scorpion sting and snake bite by the tribal people of Surguja district (Table-1).

Table 1: Plants Used By Uraon Tribe of Surguja District of Chhattisgarh for The Treatment of Scorpion Sting And Snake Bite.

S.N.	BOTANICAL NAME	COMMON NAME	FAMILY	HABIT	PART USE	MODE OF PREPARATION AND USE
1.	<i>Helicteres isora, Linn.</i>	Attain	Sterculiaceae	Shrub	Root	The <i>Xanthium strumarium</i> and <i>Helicteres isora</i> roots are grinded to prepare paste. The paste is then applied twice daily for a period of 3 days as an antidote against scorpion sting and snake bite to get relief. The total cost of treatment is Rs 30/- episode.
2.	<i>Xanthium strumarium, Linn.</i>	Gokhuru	Compositae	Shrub	Root	
3.	<i>Tylophora indica, Burm.f. Merr</i>	Antamul	Asclepiadaceae	Herb	Root	The <i>Ziziphus oenoplia</i> , and <i>Tylophora indica</i> roots are grinded and the paste prepared is applied two to three times daily up to two days as an antidote against scorpion sting and snake bite to get relief. The total cost of treatment is Rs 38/- episode.
4.	<i>Ziziphus oenoplia, Linn. Mill.</i>	Makoi	Ramnaceae	Shrub	Root	
5.	<i>Chloroxylon swietenia, DC.</i>	Bhirra	Rutaceae	Tree	Root	The roots are pounded with water and 1 cup of decoction prepared is taken once a day for two days as an antidote against scorpion sting and snake bite to get relief. The total cost of treatment is Rs 35/- episode.
6.	<i>Balanites aegyptiaca, Linn. Delile.</i>	Hingloj	Balanitaceae	Tree	Root	1-2 spoons of root powder in one cup of water is taken once a day as an antidote against scorpion sting and snake bite to get relief. The total cost of treatment is Rs 35/- episode.
7.	<i>Aristolochia indica, Linn.</i>	Iswarmula	Aristolochiaceae	Climber	Root	The <i>Aristolochia indica</i> and <i>Wrightia tinctoria</i> roots are grinded and the paste is prepared. It is applied once a day as an antidote against snake bite and scorpion sting to get relief. The total cost of treatment is Rs 45/- episode.
8.	<i>Wrightia tinctoria, Roxb. R.Br</i>	Safed korea	Apocynaceae	Tree	Root	

1.	<i>Vetiveria zizanioides</i> , Linn.	Orai	Poaceae	Grass	Root	The roots are grinded with water and the paste prepared is applied thrice daily for a period of three days as an antidote against snakebite and scorpion sting to get relief. The total cost of treatment is Rs 45/- episode
2.	<i>Cordia dichotoma</i> , G.Forst	Lasoda	Fabaceae	Climber	Root	The root is grinded with water and decoction is prepared. Half cup of this decoction is taken 4-5 times daily for 2-3 days as an antidote against snakebite and scorpion sting to get relief. The total cost of treatment is Rs 45/- episode.
3.	<i>Madhuca longifolia</i> , var <i>latifolia</i> Roxb. Chev.	Mahua	Sapotaceae	Tree	Root	One teaspoon of bark powder is taken with half cup of water twice daily up to four days as an antidote against snakebite and scorpion sting to get relief. The total cost of the treatment is Rs 48/- episode.
4.	<i>Ocimum sanctum</i> , Linn	Tulshi	Labiatae	Herb	Root	The roots are grinded and mixed with ghee. The mixture is then applied after every five minutes for 8-10 times till the black spot of snakebite vanishes and to get relief. The total cost of treatment is Rs 48/- episode.
5.	<i>Stereospermum suaveolens</i> Roxb. DC.	Garand	Bignoniaceae	Tree	Root	The roots are grinded and mixed with ghee. It is then applied twice daily for three days as an antidote against snake bite and scorpion sting to get relief. The total cost of treatment is Rs 42/- episode.
6.	<i>Cissampelos pareira</i> , Linn	Phan	Menispermaceae	Climber	Root	The roots are pounded with water and the paste obtained is applied twice daily up to three days as an antidote against snakebite and scorpion sting to get relief. The total cost of treatment is Rs 65/- episode
7.	<i>Vetiveria zizanioides</i> , Linn.	Orai	Poaceae	Grass	Root	The roots are grinded with water and the paste prepared is applied thrice daily for a period of three days as an antidote against snakebite and scorpion sting to get relief. The total cost of treatment is Rs 45/- episode
8.	<i>Cordia dichotoma</i> , G.Forst	Lasoda	Fabaceae	Climber	Root	The root is grinded with water and decoction is prepared. Half cup of this decoction is taken 4-5 times daily for 2-3 days as an antidote against snakebite and scorpion sting to get relief. The total cost of treatment is Rs 45/- episode.
9.	<i>Madhuca longifolia</i> , Roxb.	Mahua	Sapotaceae	Tree	Root	One teaspoon of bark powder is taken with half cup of water twice daily up to four days as an antidote against snakebite and scorpion sting to get relief. The total cost of the treatment is Rs 48/- episode.
10.	<i>Ocimum sanctum</i> , Linn	Tulshi	Labiatae	Herb	Root	The roots are grinded and mixed with ghee. The mixture is then applied after every five minutes for 8-10 times till the black spot of snakebite vanishes and to get relief. The total cost of treatment is Rs 48/- episode.
11.	<i>Stereospermum suaveolens</i> Roxb. DC.	Garand	Bignoniaceae	Tree	Root	The roots are grinded and mixed with ghee. It is then applied twice daily for three days as an antidote against snake bite and scorpion sting to get relief. The total cost of treatment is Rs 42/- episode.
12.	<i>Cissampelo spareira</i> , Linn	Phan	Menispermaceae	Climber	Root	The roots are pounded with water and the paste obtained is applied twice daily up to three days as an antidote against snakebite and scorpion sting to get relief. The total cost of treatment is Rs 65/- episode
13.	<i>Vetiveria zizanioides</i> , Linn.	Orai	Poaceae	Grass	Root	The roots are grinded with water and the paste prepared is applied thrice daily for a period of three days as an antidote against snakebite and scorpion sting to get relief. The total cost of treatment is Rs 45/- episode
14.	<i>Cordia dichotoma</i> , G.Forst	Lasoda	Fabaceae	Climber	Root	The root is grinded with water and decoction is prepared. Half cup of this decoction is taken 4-5 times daily for 2-3 days as an antidote against snakebite and scorpion sting to get relief. The total cost of treatment is Rs 45/- episode.

4. DISCUSSION

The study of ethnomedical systems and plants as therapeutic agents is of importance in add resign health problems of traditional communities. The wealth of tribal knowledge on medicinal plants points to a great potential for research and the discovery of new drugs to fight diseases including scorpion sting and snake bite. Some of these plant derived medicines, however, offer potential for cost-effective management of scorpion sting and snake bite through dietary interventions, nutrient supplementation, and combination therapies with synthetic drugs in the short term, and as the sole medication from natural sources over the long term. Present findings are similar to the reporting's made by. Yang LC (1998) A study of an endothelin antagonist from a Chinese anti-snake venom medicinal herb. *Cardiovasc Pharmacol* in a similar study in Wang F, Yang L, Liu M, Lu M, Cheng Y, Jia H.(1997) A primary study on antagonizing effects of antisnake venom Chinese herbs on endothelin-1 and sarafotoxin 6b. *Zhongguo Zhong Yao Za Zhi* Rousseau B, Tateya I, Lim X, Munoz-del-Rio A, Bless DM (2006) Investigation of anti-hyaluronidase treatment on vocal fold wound healing. *Aiyeloja and Bello* (2006). Asuzu IU, Harvey AL(2003) reported only antisnake venom activities of *Parkia biglobosa* (Mimosaceae) stem bark extract. Machiah DK, Gowda (2006)reported by Purification of a post-synaptic neurotoxic phospholipase A2 from *Naja naja* venom and its inhibition by a glycoprotein from *Withania somnifera*. *Biochimie Machiah DK, Girish KS, Gowda TV* (2006) studied on A glycoprotein from a folk medicinal plant, *Withania somnifera*, inhibits hyaluronidase activity of snake venoms. *Comp Biochem Physiol C Toxicol* scorpion sting and snake bite study have been similar to the findings of workers like Ruppelt BM, Pereira EF, Goncalves LC, Pereira NA (1991), Abubakar MS, Sule MI, Pateh UU, Abdurahman EM, Haruna AK, Jahun BM (2000) Ushanandini S, Nagaraju S, Harish KK, Vedavathi M, Machiah DK, Kemparaju K, et al (2006) The results of present study indicated that Surguja region of Chhattisgarh is rich in biodiversity and people of Uraon tribe have rich knowledge of using plants and plant products for the.

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