

# Medicinal plants used as antidotes in northern part of Bastar district of Chhattisgarh.

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## Abstract

The present study has been done on the traditional knowledge of the plants, widely used as Antidotes amongst the local peoples of north Bastar region of Chhattisgarh. The survey was conducted in north Bastar region of the Chhattisgarh state and information was collected from people about the plants used as Antidote against the treatment of Snake/Scorpion bite. The study revealed total of 29 species of plants belonging to 20 families widely used as antidote in northern part of Bastar. The plants species were documented on the basis of their phytochemicals and use in Antidote. Maximum of (03) species were belong to the family Asclepiadaceae and (02) each to family Fabaceae, Acanthaceae and Liliaceae. 75.86 % of the observed plants were found to be propagated by their seeds while, 6.89 % by rhizome, 10.34% by stem cutting and 3.44 % each by other plant parts like tuber and bulb. Study also revealed that plants yielding antidotes are propagated and conserved by the local people of northern region of Bastar as they are vital in treatment of snake/scorpion bite.

**Keywords:** Antidots, Medicinal plants, Plant diversity.

## INTRODUCTION

Bastar is one of the tribal districts located in the southern part of the Chhattisgarh state at the height of 2000 MSL. In Chhattisgarh state, Bastar district is found to surround by Kanker district in north, Maharashtra state in the west, Dantewada district in the south and Odisha state in the east. The total forest area of Bastar is 7112 sq km, which is more than the 75% of total area of the district. Out of the total population 70% are tribals like Gonds, Abujhmaria, Dandmaria, Muriya, doriya, Bhatra and Halba etc.

All the tribals have their dependence on forest resource for health security and livelihood; therefore, they have rich knowledge of plants and its utilization. As the area is covered by rich and dense forest associated with rich plant diversity hence snakes and scorpion biting cases are quite common and tribals have their own method of treatment by using plant resource. This knowledge is transferred from one generation to another by oral discussion (Samy and Ignacimuthu, 1998, 2000). Rich traditional knowledge of medicinal plants amongst local people was studied by (Harsha *et. al.*, 2002, 2003 and Parinitha *et. al.*, 2005). Medicinal plants specially used for snake bite was recorded by (Martz, 1992).

Plants used as antidotes are found in the local forest and it is effective against the snake/scorpion biting as it has remarkable capacity to neutralize the action of venom. Root of *Gymnema sylvestris* and whole plant parts of *Andrographis paniculata* are

recorded as Antidotes by Russell, 1980. Many flavonoides, Glycosides derived from plants are valuable chemical compounds for Antidotes (Gujral and Dhawan, 1956).

A variety of the plant species are found to be suitable for use as antidotes in India (Nadkarni, 1976, Alam and Gomes, 2003). These plants are used by tribals either independently as crude drugs or in combination with other plants, however in both the ways it is effective against the venoms of snake and scorpion. This knowledge of tribals is gradually vanishing; hence an attempt has been made in this work to record such knowledge for future generation.

## MATERIALS AND METHODS

The study was conducted in 15 villages of northern area of Bastar district and information was collected with the help of questionnaire and personal interview with the tribals, folk healers and Baigas. The documentation of information was done under 8 headings. Plants were identified by following The flora of British India Vol. I-VII by Hooker (1872, 1879), Cooke (1967), Panigrahi and Murti (1989) and Gamble (1935). Conservation practices of tribals was also observed and recorded during the study.

The local peoples /Baigas provide the local name, parts used and the utility mode of the medicinal plants as antidotes. Other scientific details like their Botanical name, Family, Habit, Phytochemicals and Propagation etc. are noticed following literatures such as flora/Encyclopaedia like De. L. C. (2005), Sharma R. (2003), Tivedi P. C. (2006) and Pullaiah, T. (2006).

## RESULTS AND DISCUSSION

In present study 29 plants belonging to 20 families used by tribals as antidotes was recorded. The maximum number of plants (03) yielding antidotes belonging to family Fabaceae and Asclepiadaceae, while 02 plants each was belonging to family

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Acanthaceae, Rutaceae, Liliaceae, Aristolochiaceae, Rubiaceae and the other families recorded 01 plant each. Plant parts like root, rhizome, stem, leaf, flower, fruit, resin, gum, bark were found to be used for the treatment of snake and scorpion bite. The root of 12 plants, leaves of 07 plants, stem and whole plant parts of 03 plants, rhizome of 02 plants and bulb, flower, latex, tuber, gum of 01 plant each was found to be used as antidote.

The different plant parts contain different type of phytochemicals like Tanin, Saponin, Oleonic acid, Alkaloids, Sulphur, Terpenoids, Flavonoids, Mannitol, Glycosides, oil, Urosolic acid, Pyrrolidin, steroids and Formic acids, however, the largely used

methods were preparation of powder, paste and decoction. The common way of using drug was either applying powder or paste over the place of snake and scorpion bite or oral consumption of decoction. (Table-1). The antidote yielding 75.86 % plants were found to be propagated by seeds, 10.34% by stem cutting, 6.89% by rhizome and 3.44 % each by tubers and bulb (Table-2).

Due to easier availability of plants and its effectiveness as antidotes against the snake and scorpion bite, tribals successfully employ this method of treatment and also propagate the plants for their conservation.

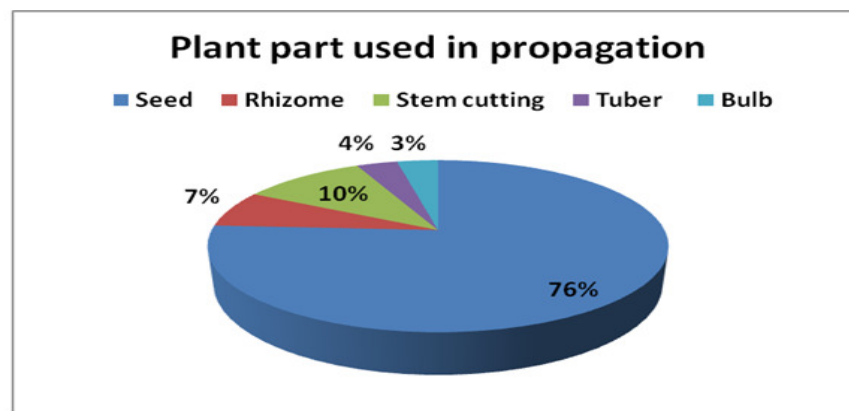
Table 1. Plants used by Tribals as Antidotes against the snake/scorpion biting in Northern region of Bastar district in Chhattisgarh.

S. No.	Botanical Name	Common Name	Family	Habit	Part Used	Phytochemical content	Mode of Utilization	Mode of Propagation
1.	<i>Acacia nilotica (Lam) Willd.</i>	Bambul	Fabaceae	Tree	Leaf	Tannins	Leaf and areca nut with betel leaf paste is applied over the biting area.	Seed
2.	<i>Achyranthus aspera L.</i>	Chirchita	Amaranthaceae	Herb	Leaf, Stem, Root	Saponins and Oleonic acid	Root extract is applied over the spot and also taken orally.	Seed
3.	<i>Acorus calamus L.</i>	Sweet flag	Araceae	Herb	Rhizome	Alkaloids	Paste of rhizome is applied over the spot.	Rhizome
4.	<i>Adathoda vasaka Nees.</i>	Adusa	Acanthaceae	Shrub	Root	Alkaloids	The root paste along with goat milk is given orally.	Stem cutting
5.	<i>Aegle marmelos (L.) Correa</i>	Bael	Rutaceae	Tree	Root bark	Alkaloids	Water Decoction is given orally.	Seed
6.	<i>Allium cepa L.</i>	Onion	Liliaceae	Herb	Bulb	Sulfur compounds	Paste is applied over the spot	Bulb
7.	<i>Andrographis paniculata (Burm.f.) Wallich ex Nees</i>	Bhuineem	Acanthaceae	Herb	Whole plant	Terpenoids	Decoction is taken orally, Paste is applied over the spot	Seed
8.	<i>Aristolochia indica L.</i>	Komum, Indian Birthwort,	Aristolocaceae	Tree	Root	Terpenoids	Fresh root extract along with pepper is applied over the spot.	Seed
9.	<i>Azadirachta indica A. Juss.</i>	Neem	Meliaceae	Tree	Flower	Flavonoids	Decoction is taken orally and paste is applied over the spot	Seed
10.	<i>Calotropis gigantea (L.)</i>	Milk Weed	Asclepiadaceae	Shrub	Plant latex	Flavonoids	Plant latex is grinded with asafoetida and applied over the spot.	Seed
11.	<i>Canthium parviflorum Lam.</i>	Kirma	Rubiaceae	Tree	Root	Mannitol	The root extract is taken along with goat milk.	Seed
12.	<i>Aristolochia indica L.</i>	Indian Birthwort	Aristolocaceae	Tree	Root	Alkaloids, Terpenoids	Paste is applied over the spot.	Seed
13.	<i>Cassia alata L.</i>	Senna	Fabaceae	Herb	Leaf	Flavonoids	Paste is applied over the spot.	Seed
14.	<i>Curcuma longa L</i>	Haldi	Zingiberaceae	Herb	Rhizome	Alkaloids	Paste is applied over the spot.	Rhizome
15.	<i>Gloriosa superba L.</i>	Kalihari	Liliaceae	Herb	Tuber	Alkaloids	Paste is applied over the spot.	Tuber, Seed
16.	<i>Hemidesmus indicus (L.) Schult.</i>	Anantamul	Asclepiadaceae	Herb	Root	Glycosides	Decoction is taken orally.	Stem cutting
17.	<i>Mimosa pudica L.</i>	Lajvanti	Fabaceae	Herb	Whole plant	Alkaloids	Paste is applied over the spot.	Seed
18.	<i>Moringa oleifera Lam</i>	Munga	Moringaceae	Tree	Gum, Bark	Glycosides	Gum extract is applied on the affected area.	Seed
19.	<i>Ocimum sanctum L. Lamiaceae</i>	Tulsi	Lamiaceae	Herb	Leaf	Oil, Ursolic acid,	Juice is taken orally.	Seed
20.	<i>Ophiorrhiza mungos L.</i>	Sarhati	Rubiaceae	Tree	Root	Tannin	Paste of Root extract with powder of gulaganji (white) is made applied over the spot and also given orally.	Seed
21.	<i>Punica granatum L.</i>	Anar	Punicaceae	Shrub	Whole plant	Flavonoids Tannins,	Paste is applied over the spot.	Seed
22.	<i>Rauvolfia serpentina (L.)</i>	Sarggandha	Apocynaceae	Herb	Root	Alkaloids	Paste is applied over the spot.	Seed
23.	<i>Syzygium cumini (L.) Skeels</i>	Jamun	Myrtaceae	Tree	Stem bark	Tannins	Decoction is taken orally.	Seed
24.	<i>Tinospora cordiafolia (Willd.) Hook.</i>	Giloye	Menispermeaceae	Shrub	Leaf	Pyrrolidine, Bitter compounds,	Leaf juice along with garlic paste is applied over the spot and also taken orally.	Seed/ Stem cutting
25.	<i>Terminalia arjuna (DC) W &amp; A</i>	Arjun	Combretaceae	Tree	Stem Bark	Tannins, Arjunic acid,	Paste on spot	Seed

26.	<i>Todalia asiatica</i> (L.) Lam	Kadu	Rutaceae	Tree	Leaf	Alkaloids	Paste is applied over the spot.	Seed
27.	<i>Azima tetraacantha</i> Lam.	Menasu Uppi mullu	Salvadoraceae	Tree	Leaf	Alkaloids	Leaf paste along with garlic and pepper is given orally.	Seed
28.	<i>Tylophora indica</i> (Burm f.) Merrill.		Asclepiadaceae	Tree	Root	Tannins	Root extract with pepper and garlic or onion juice is taken orally.	Seed
29.	<i>Urtica dioica</i> L.	Stinging nettle	Urticaceae	Herb	Root	Steroids, Flavonoids, Formic acid,	Root extract along with cow urine, pepper and garlic is applied over the spot.	Seed

Table 2. Propagation methods of the plants used as antidote for snake/ scorpion bite by tribals in north Bastar in Chhattisgarh.

S. No.	Plant part used in propagation	No. of Plant species	Percentage
1.	Seed	22	75.86
2.	Rhizome	02	6.89
3.	Stem cutting	03	10.34
4.	Tuber	01	3.44
5.	Bulb	01	3.44



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