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Ethnomedicinal practices of Kol tribes in Similipal Biosphere Reserve, Orissa, India

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Abstract

Similipal Biosphere Reserve (SBR) in Mayurbhanj district of Orissa is the most luxuriant forest and rich in medicinal plant resources. The forest area is dominated by a number of tribes such as Kol, Santal, Bhumij, Mankidias and Khadias who depends on the forest for their food to medicine. The present paper reports on ethnomedicinal uses of 32 potential medicinal plants belong to 24 families of medicinal plants used for ailment of various diseases like leucorrhoea, spermatorrhea, piles, sore throat, rheumatism, elephantiasis etc. by Kol tribe living in some villages situated in and around Similipal Biosphere Reserve.The botanical name, family name, vernacular name, parts used, method of preparation, usage, administration of the drugs are given.

Key words: Ethnomedicine, Kol tribes, medicinal plants, Similipal Biosphere Reserve,

Introduction

Throughout the world, plants have been in continuous use in one way or the other for the treatment of various ailments. In India, the sacred Vedas, which date back between 3500 B.C. and 800 B.C., give many references of medicinal plants. The indigenous traditional knowledge of medicinal plants of various ethnic communities, where it has been transmitted orally for centuries is fast disappearing from the face of the earth due to the advent of modern technology and transformation of traditional culture. The collection of information about natural flora, classification, management and use of plants by the people holds importance among the ethnobotanists.

Globally, about 85% of the traditional medicines used for primary healthcare are derived from plants. Herbal drugs obtained from plants are believed to be much safer; this has been proved in the treatment of various ailments (Mitalaya *et al*, 2003).Traditional medicine and ethnobotanical information play an important role in scientific research, particularly when the literature and field work data have been properly evaluated (Awadh, *et al*., 2004). The local people and researchers face the challenging task of not only documenting knowledge on plants, but also applying the results of their studies to biodiversity conservation and community developments, with a deep concern and reverence for the vast diversity of flora that our country enjoys, and with sense of realization about the invaluable therapeutic properties of this phytodiversity, the current research is undertaken. This work concentrates on potential ethnomedicinal value of plants and herbs commonly used by the tribals residing in and around Similipal Tiger Reserve of the area surveyed. The study area concentrates in and around the deep forest pockets of tribal villages which comes under Similipal Biosphere Reserve (SBR) located in Mayurbhanj Districts of Orissa, India (Fig.1). The area lies between 20° 17’ to 22° 34’ North latitude and 85° 40’ to 87° 10’ East longitude. In the reserve there are 4 villages inside the core area, 65 villages in the buffer and 1200 villages in the periphery. The human population in all being more than 4.5 lakhs. Among the total population tribal occupy 52% of it and 53 communities both aboriginal and migrated are found in the district glorifying the rich heritage of tribal culture. Among the tribes the chief ones among them are Santal, Kol, Bhomij, Bhuyan, Bathuri, Kharia, Gonds, Mankdias, Pauri-Bhuyan, Saharias, Mahalis and Sounti.Some of these tribes namely Kharias, Mankdias and Saharas are still in primitive state of living. They depend solely on their surrounding forests for most of their requirements from food to medicines. Ethnobotany of Similipal is known through the earlier works of Bal (1942), Mudgal and Pal (1980), Pandey and Rout, (2002), Pandey and Rout, (2006), Saxena and Dutta (1975), Saxena *et al*., (1988) and Yogunarasimhan and Dutta (1972).

Fig. 1. Similipal Biosphere Reserve

Methodology

Following the method of Jain and Goel (1995), the information regarding the usage of medicinal plants available in the local area for treating various ailments and diseases, was collected directly by contacting the elders, herbal doctors and the persons who have knowledge about these medicinal plants in the Similipal Tiger Reserve (Fig.2, 3 & 4). Regular visits were made from March 2007 to June 2007 to collect the data. The plant material was collected and carefully handled for identification by authenticated source. Most of the plant materials were preserved by making herbaria and all the voucher specimens were carefully numbered and deposited in the Wildlife & Conservation Biology

Department, North Orissa University. The medicinal value of each plant was enumerated in the following pattern: (a) Botanical names, (b) Family, (c) Vernacular Name in Oriya (Or.) and Kol (K.), (d) Parts used and e) Ethnomedicinal uses.

Fig. 2. Tribal healer with investigators

Fig.3. Identification of plant by healer.

Fig. 4. Discussion with tribal healer.

Results and Discussion

The ethnomedicinal uses of 32 plant species recorded from the Kol tribes of Similipal Biosphere Reserve are reported (Table 1). It is evident from the present study that the tribals are dependent on a variety of medicinal plants for treatment of various ailments. Some experienced tribals have shared their knowledge with the authors about the cure of
some important diseases like diarrhea, chronic dysentery, chronic constipation, piles, snakebite, rheumatism, diabetes, leucoderma of skin and urine infection. This information is being reported by us for the first time (not reported by earlier investigators i.e., Saxena *et al*.(1988) as well as Jain (1991).

Further the study shows that knowledge and usage of herbal medicine for the treatment of various ailments among Kol tribes is still a major part of their life and culture. In the present paper, first hand information on uses of 32 species under 24 families for different diseases collected from the different localities of Similipal Biosphere Reserve was presented. This information was also checked with available literature of Karuppusamy *et al*., (2001), Girach and Aminuddin, (1989) and Mishra *et al.*, (2001). The ethno-medicinal information provided in this study is new, as they have not been reported earlier. Thus, the information presented provides enough opportunities to study their active principles in terms of searching the modern drugs. Although these herbal remedies and their efficacy is claimed to be high detail clinical and experimental studies are needed for better utilization of ethno botanical knowledge.

It was learnt that the Koles tribes of SBR are either work as laborers or cultivate crops such as Paddy, Mandia, Jhoar and mostly depend on forest and the forest products to sustain their livelihood.

The tribals inherit rich traditional knowledge about the medicinal uses of flora investigated and apply this knowledge for making crude phytomedicines to cure infections a number of ailments from simple cold to other complicated diseases. Traditional knowledge forms the basis for origin of not only alternative medicine but also paved way to evolution of a gamut of new and novel modern medicines. But this knowledge is mostly unknown to scientific world and faces slow and natural death. It is paradoxical to see the modern world of late, focusing more on alternative medicine which has herbal base predominantly.

Table1. Ethnomedicinal uses of plants in Similipal Biosphere Reserve, Orissa.

S. No	**Botanical name, family and local names**	**Parts used**	**Ailments**	**Mode of preparation**
1	*Agave sisalana* Peer. ex Engl., Agavaceae, Sisal (Or.)	Leaves	Tongue infection	Leaf juice applied with honey on tongue.
2	*Alstonia scholaris* (L.) R. Brown, Apocynaceae, Chhatina (Or.)	Bark	Jaundice	Decoction of bark along with bark of *Piper triocum*, *Mangifera indica* and *Piper nigrum* (10-15 nos) taken twice a day for 3 days.
3	*Andrographis paniculata* (Burm.f.) Wall. ex Nees, Acanthaceae, Bhuineem (Or.)	Whole plant	Headache	Entire plant is made into paste and applied externally on forehead.
4	*Atylosia scarabaeoides* (L.) Benth., Fabaceae, Birhorre (K)	Root	Rheumatism	Roots are ground together with *Vitex negundo* (tender leaves), *Kaempferia rotunda* (root), *Clausena excavata* (root) and boiled in *Pongamia pinnata* oil and the oil is applied externally.

5	*Boerhavia diffusa* L Nyctaginaceae, Pueuni saga (Or.)	Whole plant	Leucorrhoea, Asthma	Decoction of plant is given once a day in the early morning for 15 days for the treatment Leucorrhoea and dried plant powder is smoked as cigarette once a day for treatment of asthma.
6	*Calendula officinalis* L., Asteraceae, Gendu (Or.)	Leaves	Cut	Leaves, upper layer of bamboo and lime are mixed together and form a paste and applied.
7	*Calotropis gigantea* (L.) W. T. Aiton, Asclepiadaceae, Patladhudha (Or.)	Root	Malaria	Approximate 4 inch each two pieces root is boiled in 400ml cow milk for 5-10 minutes and filtered juice is taken one teaspoon mixed with sugar for treatment of malaria and once in a month as preventive.
8	*Careya arborea* Roxb. Lecythidaceae, Kumbhi (Or.)	Bark	Piles	50gm stem bark is boiled with water and taken (1 glass) in empty stomach once a day for 7 days (Fig.5).
9	*Cassia fistula* L. Fabaceae, Sonari (Or.)	Leaves	Constipation	Half teaspoon juice extract is taken orally thrice a day.
10	*Catharanthus roseus* (L.) G. Don, Apocynaceae, Sadabihari (Or.)	Flower	Diabetes	Infusion of young leaves and flower is taken in morning daily.
11	*Cissampelos pareira* L. var *hirsute* (Buch. – Ham. ex DC) Forman, Menispermaceae, Pitusing (K.)	Root	Colic	Filtered root juice is taken with water (Fig. 6 & 7).

12	*Clausena excavate* Burm.f., Rutaceae, Agnijhal (Or.)	Root	Bodypain	Root is made into a paste and given internally. Roots are boiled and the water is taken against dysentery.
13	*Crotalaria spectabilis* Roth, Fabaceae, Jhunka (Or.)	Root	Dysentery	Juice extracted is given orally
14	*Curculigo orchioides* Gaertn, Hypoxidaceae, Talmuli (Or.)	Tuber	Snakebite	Tuber is made into paste and applied externally as an antidote.
15	*Curcuma amada* Roxb. Zingiberaceae, Amahaladi (Or)	Whole plant	Piles	Paste of 7 long peppers (*Piper longum*) mixed with 3 gm of plant paste each used twice for 3 days for the treatment of piles.
16	*Dalbergia latifolia* Roxb. Fabaceae, Sisso (Or.)	Oil	Eczema	Oil is applied externally to treat eczema.
17	*Desmodium gangeticum* (L.) DC. Fabaceae, Salaparni (Or)	Root	Fever	Decoction of root is taken in empty stomach once for 5 days to cure fever.
18	*Elephantopus scaber* L. Asteraceae, Talmuli (Or)	Root	Urine infection	Root paste is taken twice a day for a week for the treatment of pain during discharge of urine
19	*Gloriosa superba* L. Liliaceae, Panchangulia (Or.)	Tuber	Rheumatism	Paste is prepared and mixed with the paste of *Piper longum* and is administered once a day regularly for a month for cure of rheumatism.
20	*Hemidesmus indicus* (L) R. Br., Asclepiadiaceae, Guachemda (K.)	Root	Snakebite	Root is made into paste and applied on wounds soon after snakebite. Paste is given orally too.

21	*Kaempferia rotunda* L. Zingiberaceae, Bhuichampa (Or.)	Bulb	Ulcer	Along with root of *Swertia angustifolia* and honey made paste given orally twice a day till cure.
22	*Litsea glutinosa* (Lour.) C. B. Robinson, Lauraceae, Ledhachhali (Or.)	Bark	Wound	Paste is applied on wound to heal up faster.
23	*Nyctanthes arbor-tristis* L., Oleaceae, Chirat, Saparon(K.)	Leaves	Cough & cold	Young leaves of *Zingiber officinale*, *Piper triocum* (root) are taken together in equal quantities, boiled with water and taken twice a day for three days.
24	*Oroxylum indicum* (L.) Kurz, Bignoniaceae, Ringevenam (K.)	Bark	Appetite	One glassful decoction of bark is taken orally in the morning for 3 days to stimulate appetite.
25	*Pterocarpus marsupium* Roxb., Fabaceae, Piasal (Or.)	Bark	Blood dysentery	Paste is made with bark of above plant pounded with *Mangifera indica* (bark), *Shorea robusta* (bark) and *Spondias pinnata* (bark) of 2 inch size each and administered once in a day.
26	*Rauvolfia serpentina*, (L.) Benth. ex Kurz, Apocynaceae, Chhedabag (K.)	Root	Malaria	Roots are ground with roots of *Cissampelos pareira* in equal quantities with water and taken orally twice a day for 5 days.
27	*Scoparia dulcis* L. Scrophulariaceae, Chiranta (Ko)	Leaf	Sore throat	Decoction of leaf is taken twice continuously for a week for the treatment of sore throat.
28	*Sida acuta* Burm. f., Malvaceae, Ipipijon (K.)	Root	Conjuctives	Two drops of juice are put in the eye.

29	*Soymida febrifuga* (Roxb.) A. Juss, Meliaceae, Rohini (Or.)	Bark	Colic	Bark powder is mixed with fruits of *Terminalia chebula* in equal quantities with water is taken thrice a day.
30	*Withania somnifere* (L.) Dunal, Solanaceae, Ashwagandha (Or.)	Flower	Spermatorrhea	Decoction of flower is taken with honey once a day in empty stomach for one month for the treatment of spermatorrhea.
31	*Woodfordia fruticosa* (L.) Kurz. Lythraceae, Icha (K.)	Tender leaves	Dysentery	Juice is good for treating dysentery.
32	*Ziziphus rugosa* Lam. Rhamnaceae, Chunkoli (Or.)	Bark	Dyspepsia	Decoction is given orally

Fig. 5 (Top). *Careya arborea* flower.
Fig. 6 (Bottom Left). *Cissampelos periera* root.
Fig. 7 (Bottom Right). 'Bakhar' prepared from *C. periera*.

Conclusion

This study shows that knowledge and usage of herbal medicine for the treatment of various ailments among tribes is still a major part of their life and culture. In this study it is observed that they use some herbaceous plants as traditional medicine although many of these species are known as medicinal plants. The data collected show that majority of medicines are taken orally. Most of the reported preparations are drawn from a mixture of plants; single plant is used rarely. In other parts of the country, the use of mixtures of plant species in treating a particular ailment is fairly common. Generally, the people of the study area in SBR still have a strong belief in the efficacy and success of herbal medicines. The results of the present study provide evidence that medicinal plants continue to play an important role in the healthcare system of Kol tribal community of Similipal Biosphere Reserve, Orissa.

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References

Awadh, A., Ali, N., Al-rahwi1, K. and Lindequist, U. 2004. Some medicinal plants used in Yemeni herbal medicine to treat Malaria. *African Journal of Traditional Complementary and Alternative Medicines* 1, 72–76.

Bal, S.N. 1942. Useful plants in Mayurbhanj State in Orissa. *Rec. Bot. Surv. India* 6, 1-119

Girach, R.D. and Aminuddin 1989. Ethnopteridological notes on *Lygodium flexuosum* (Linn.) Sw. *Journal of Economic and Taxonomic Botany* 13, 255-257.

Jain, S.K. 1991. *Dictionary of Indian Folk Medicine and Ethnobotany.* Deep Publications, New Delhi. p. 135

Jain, S.K. and Goel A.K. 1995. *A Manual of Ethnobotany*, edited by Jain S K Scientific Publishers, Jodhpur.

Karuppusamy, S., Karmegam, N. and Rajasekaran, K.M. 2001. Enumeration, Ecology and

Ethnobotany of Ferns of Sirumalai hills, South India. *Journal of Economic and Taxonomic Botany* 25, 631-634.

Mishra, R.C., Panda, P.C. and Das, P. A., 2001. Taxonomic study of the ferns and ferns allies of Gandhamardan hills, Orissa. *Journal of Economic and Taxonomic Botany* 25, 577-590.

Mitalaya, K.D., Bhatt, D.C., Patel, N. K and Didia, S.K. 2003. Herbal remedies used for hair disorders by tribals and rural folk in Gujarat. *Indian Journal of Traditional Knowledge* 2, 389–392.

Mudgal, V. and Pal, D.C. 1980. Medicinal Plants used by tribals of Mayurbhanj (Orissa). *Bull. Bot. Surv. India*. 22, 59-62.

Pandey, A.K. and Rout, S.D. 2002. Medicinal Plants of Similipal Biosphere Reserve-Perspectives of Plant Biodiversity. pp 681-696 (ed. A.P. Das); Bishen Singh Mahendra Pal Singh, Dehra Dun.

Pandey, A.K. and Rout, S.D. 2006. Ethnobotanical uses of plants by tribals of Similipal Biosphere Reserve, Orissa. *Ethnobotany* 18, 102-106.

Saxena, H.O. and Dutta, P.K. 1975. Studies on the ethnobotany of Orissa. *Bull. Bot. Surv. India* 17, 124-131

Saxena, H.O., Brahmam, M. and Dutta, P.K. 1988. Ethnobotanical studies in Similipal Forests of Mayurbhanj District (Orissa). *Bull. Bot. Surv. India* 30, 83-89

Yoganarasimhan, S.N. and Dutta, P.K. 1972. Medicinal Plants of Orissa- a preliminary survey of Similipahar Forests, Mayurbhanj District, Orissa. *Nagarjun*.15:25-27.