ETHNOMEDICINAL PLANT RESOURCES OF SIMILIPAL BIOSPHERE RESERVE, ORISSA, INDIA

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On a global scale, the current dependence on traditional medicine system remains high, with a majority of world's population still dependent on medicinal plants to fulfill most of their healthcare needs. It is estimated that about 64% of the total global population depend on traditional medicines (Parnworth, 1994; Sridiga, 1994). Nearly 8000 species of plants have been recognized as of ethno-botanical importance (Anon., 1994). Medical ethnobotany deals with the nature and application of plants used in traditional medical systems and it involves the identification of plants used in traditional remedies, and sometimes includes investigations into folk systems of classifying medicinal plants. This paper deals with the study of ethnomedicinal plant resources of the Similipal Biosphere Reserve.

The Similipal Biosphere Reserve lies between 20°17' to 22°10'N and 85°57' to 86°47'E and is situated in the central part of district Mayurbhanj of Orissa, with an area of 5569 km². The forest area is quite rich in plant wealth with 1076 species of flowering plants (Saxena & Brahman, 1989). Similipal is inhabited by a number of aboriginal tribes. The chief ones among them are Santals, Gonds, Koils, Bhumia, Bhayans, Bathudi, Kharia, Mankadias, Sonris and Marvans. The tribes utilize a number of medicinal plants available in the forest, which are effective in the treatment of many diseases. The rich forest flora and vast tribal population in the reserve have attracted a number of workers for ethnomedical studies in the past (Saxena, et al., 1988; Pandey et al., 2000, 2002; Pandey & Rout, 2003; Rout, 2005).

The study was carried out in 35 villages of buffer and core areas of the Similipal Biosphere Reserve during 2003-2004. The local tribal baidas (doctors) and tribal old man were interviewed to record different plants used for various remedies. Regarding the common diseases the respondents informed about the frequent occurrence of malaria with other diseases like dysentery, snakebite, jaundice, cold fever, skin disease, earache, tuberculosis, headache and colic. The collected plant species were identified with the help of floras (Haines, 1921-25; Saxena & Brahman, 1994-96). To ascertain the use of these medicinal plants, the earlier published scientific literature sources referred to were Jain (1991), Kirikar and Basu (1991), Ambasta et al. (1992), Chopra et al. (1996), besides many other books and articles published in different journals. The medicinal plants collected are listed here with their botanical names followed by family name and their local names in Oriya.

Ethnomedicinal observations:

Malaria
Nyctanthes arbor-tristis L. (Olacaceae), 'Gangasulik' 250g leaves boiled with 5/4 liter of water till it becomes 100ml and mixed with leaf juice of Ocimum tenuiflorum. This decoction is mixed with 50ml of honey and prescribed for three days.

Rauvolfia serpentina (L.) Benth. ex Kurz (Apocynaceae), 'Patagandu'
Juice extracted from leaves mixed with the juice of Andrographis paniculata and Azadirachta indica and drunk with honey for seven days continuously to cure malaria.

Snakebites
Rauvolfia serpentina
Juice extracted from leaves taken twice a day for three days. 15g roots along with root of Cassia tor and bark of Holarrhena pubescens paste applied twice a day for two days.

Calotropis gigantea (L.) All. (Asclepiadaceae), 'Arka'
Latex is applied on the bitten area thrice a day for two to three days.

Cassia fistula L. (Caesalpiniaceae), 'Sonar'
Bark is prepared into pastes and applied on the bitten area two to three times a day for two to three days.

Decoction of mixture containing roots along with equal quantity of roots of Stereospermum chelonoides, latex of Calotropis gigantea and stem juice of Musa paradisiaca mixed with pepper given twice a day for two to three days for relief from snakebite.

Jaundice
Lawsonia inermis L. (Lythraceae), 'Marujadi'
Roots mixed with flowers of Curcuma aromatica made into paste and given orally once a day for seven days.

15g leaf juice of Lawsonia inermis with 5g of pepper given internally once a day for 20 days.

Roots of the plant, leaf juice of Abutilon pereirum along with three seeds of pepper and rice given orally to the patient twice a day for one week.

Cocculus grandis (L.) Volgt. (Cucurbitaceae), 'Bantundur'
Fresh root juice along with leaves of Kaliachoe pinzeta and sugar ground with water and taken twice a day for four to five days to cure jaundice.

Oxylum indicum (L.) Kurz (Bignoniaceae), 'Phen phena'
50ml leaf juice prescribed to be taken orally thrice a day for three to four days to cure jaundice.

Dysentery
Kalanchee pinnata (Lam.) Pers. (Crassulaceae), 'Aaspoor'
25ml of fresh root juice given orally three times a day for three days to cure dysentery. Leaves with bark juice of Shorea robusta given Internally.

Hibiscus rosasinensis L. (Malvaceae), 'Mander'
Twigs and sugar made into a paste as a remedy for dysentery.

Indigofera tinctoria Rottl. (Fabaceae), 'Garra'
Flowers and roots mixed and ground into paste with water and given to cure dysentery.

Roots with bark juice of Cernea arbores given as a remedy for blood dysentery.

Clustacea urutaca Burm. f. (Rutaceae), 'Agnihat'
Roots with equal quantity of leaves of Cernea arbores and Terminalia arista mixed into water and given orally twice a day for two to three days.

Roots mixed with the barks of Holarrhena pubescens, Anchusla latiflora and Petrosia marstum and prepared as pills: One pill taken orally on empty stomach for three days.

Curcuma angustifolia Roxb., (Zingiberaceae), 'Peleas'
Roots and sugar mixed with large quantities of water and given twice a day for three to four days to cure dysentery.

Spondias pinnata (L. f.) Kurz (Anacardiaceae), 'Ambeda'
Bark juice with fruit of Mazus paradisiaca given in dysentery.

Equal quantities of bark juice of Spondias pinnata and Syzygium cumini generally prescribed for dysentery.
Pterocarpus marsupium Roxb. (Fabaceae), 'Plassa'
Powdered bark mixed with Schleichera oleosa and taken with cold water for treatment of dysentery.
Achyranthes aspera L. (Amaranthaceae), 'Asamanage'
25g of root juice with 50g of sugar in water taken twice a day until relief from dysentery.

Cold fever
Phyllanthus fraternus Webster (Euphorbiaceae), 'Bhuianta'
Decoction of 5g of fresh and clean roots mixed with a glass of unboiled cows milk taken twice a day for three days.
Schleichera oleosa (Lour.) Oken. (Sapindaceae), 'Kusuma'
One teaspoon oil of Schleichera oleosa mixed with garlic heated and massaged on body for five minutes to cure cold fever.
Ocinum tenuiflorum L. (Lamiaceae), 'Tulsi'
5g of leaves with two pepper seeds mixed with hot water and given in the morning and evening for three to five days. Fresh leaves of Ocinum tenuiflorum along with ginger and honey made into pills. This pill taken orally twice a day for one or two days.

Ear ache
Coelasia grandis (L.) Voigt (Cucurbitaceae), 'Bokunduri'
Leaves crushed and the juice applied directly to the ear.
Schleichera oleosa
Approximately 15-20ml oil heated with two to four pieces of garlic and after five minutes one or two drops dropped into the ear.
Shorea robusta Gaertn. Fruct. (Dipterocarpaceae), 'Saf'
Filtered stem juice directly used for relief from earache.
Vandea tessallata (Roxb.) G. Don (Oxalidaceae), 'Malanga'
Two to three drops of warmed leaf juice put in the ear once a day for two to three days.

Scabies
Vitex negundo L. (Verbenaceae), 'Begunia'
Seven teaspoons of juice extracted from leaves and barks of Strychnos nuxvomica applied like ointment on the affected part.
Aloe vera L. (Liliaceae), 'Gheeikant'
The fresh leaf juice applied on the affected area once a day during morning hours until the white patches disappear.

Phyllanthus fraternus
Juice extracted from leaves and consumed in the morning and evening for 5-10 days.
Andrographis paniculata (Burm. f.) Wallch ex Nees (Acanthaceae), 'Bhun neem'
Juice extracted from leaf mixed with root juice of Rauvolfia serpentina and Nictanthes arboristis and given to patients suffering from scabies.

Tuberculosis
Solanum surattense Burm.f. (Solanaceae), 'Bhagebaliya'
Paste of fruits mixed with pepper and ghee of cow given for seven days for remedy for tuberculosis.
Celastrus paniculatus Willd. (Celastraceae), 'Pengu'
Three to four drops of seed oil taken with one teaspoonful of water once a day on empty stomach for one month.

Head ache
Elephantopus scaber L. (Asteraceae), 'Mayurchullu'
The entire plant is cooked with rice and eaten to cure migraine. An entire root tied over forehead to get relief from headache.
Holarrhena pubescens (Buch.-Ham.) Wallch ex G. Don (Apocynaceae), 'Kuluchu'
Decoction of roots with garlic and mustard made into paste and applied externally as an ointment to cure headache.

Colic pain
Rauvolfia serpentina
Extracted juice of roots given two to three times once a day for two to three days to cure colic pain.

Seeds are powdered, mixed with equal quantity powder of seeds of Terminalia bertiaca and Terminalia chebula and added to a large quantity of water. A spoonful of it taken twice or thrice a day.

The study reveals that the inhabitants of Similipal area have vast knowledge about ethnomedicinal uses of plants growing in their vicinity. The tribal inhabitants like Kharia, Mankadia, Bhumij, Santals, Gonds, Kols and Mahalis dominate in Similipal. These tribes live in deep forests with their own community and use a large number of plants for their medicine. Literature studies revealed that little work has been done on different ethno-botanical aspects in Similipal. Therefore, there is an urgent need for documentation of their knowledge on priority basis. The tribes are not interested to share their knowledge with others. However, after developing intimacy with some of the medicine men and other traditional healers, some information on medicinal uses has been collected and is presented in this paper. Twenty-seven species were to be used in different ways to cure these ailments. These include plants whose medicinal importance has not been recorded and reported so far, or about which new information on medicinal uses and mode of administration has been obtained. The observation revealed that the tribes used stem and bark as the most common crude drug in their preparations to cure different diseases. Although the information given by tribes of Similipal is not comparable to the modern medicine, their efficacy is claimed to be high.

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