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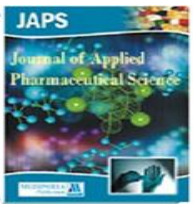

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Use of plant diversity in household and rituals by tribal people of Dhenkanal district, Odisha, India

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ABSTRACT

This study documents traditional knowledge of plants used as household appliances and rituals by tribal's of Dhenkanal district, Odisha, India**.** It is primarily based on field surveys carried out in villages, where dwellers provided information on plant species used as household materials and rituals. The plant parts, viz. leaf, bark, stem wood and whole plant were used for above purpose. The species used as comprise 21 families for household and 11 families for rituals. The most important families were Arecaceae, Euphorbiaceae, Poaceae and Fabaceae. These plant resources were used for preparation of broom, mat, basket, measuring device of grains, insecticide to store grains etc. and rituals like marriage, worshiping different trees, Sun God, mother Earth, Goddess Banadurga, Daluani Devata and Jangal Devata.

Key words: Dhenkanal; Odisha, Rituals, Traditional knowledge, Tribal's

INTRODUCTION

Odisha, one of the states of eastern India, has vast genetic resources amid complex cultural diversity. The adaptation of the various human groups to the rich biological resources has generated invaluable local knowledge systems that include extensive information on plant uses in general, household and ritual useful species in particular. Indigenous people and other small scale societies were exemplary conservationists gained widespread currency in popular media as well as in academic circles (Smith and Wishnie 2000).This indigenous conservationism has often been attributed to a spiritual respect for, and a practical understanding of the natural world (Vecsey 1980,Martinez 1996,Berkes 1999).Even though, much progress has been made in exchanges; however awareness of the interrelationship between culture and environment is still in its infancy. Yet cultures shape the environment. Sustainable natural resource management is driven by the beliefs and behaviors of the human communities, and local cultures are strengthened by their intimate associations to the natural environment. In fact the association of tribal people of Odisha with ecosystem management is interwoven in symbiotic network. The tribal affinity to forests of Odisha has been very high in terms of source of living, way of life and cultural moorings. The tribal people were using various recipes traditionally from generation to generation. Some of them have been in recorded form and some are not. Worldwide, ten thousands of species of higher plants and several hundred lower plants are currently used by human beings for a wide variety of purposes such as, households, rituals, food, fuel, fiber, medicine, oil, spices, as forage and fodder for domesticated animals (Heywood, 1992). But due to entrance of market economy, urbanization, industrialization and pollution, forests are disappearing faster than any other biome in the world. The most affected part in this process was plants which is most sensitive and delicate in the

Fig.1. Map of the study site.

environment of forest. In this context Ethnobotanists can play a very useful role in returning such disappearing knowledge to local communities. In this way, local ethnobotanical knowledge can be conserved as part of living cultural-ecological systems, helping to maintain a sense of pride in local cultural knowledge and practice and reinforcing links between communities and the environment, so essential for conservation (Gary and Martin, 1995).Review of patent literature revealed that much work has been done on the ethnomedicinal aspect in different parts of Odisha (Subudhi et al 1992; Choudhury et al 1993;Pandey and Rout 2006; Rout and Pandey 2007; Pattanaik et al 2008; Rout et al. 2009a,b Panda 2010),reports from plants used as household and rituals are nil. Therefore, there is an urgent necessity to document traditional knowledge, focusing on the maintenance of this important cultural practice. The present study has been designed to report the uses of plants as household and ritual purpose on the basis of field surveys and taxonomic identification of plants. The objective of this study is to motivate the people to come forward for the utilization, cultivation and preservation of traditional plants.

MATERIALS AND METHODS

Study Area

The Dhenkanal district (Fig.1) is situated in the central part of the Odisha (20^0 29' to 21^0 11' N and 85^0 58' to 86^0 2' E) and covers an area of 4452 sqKm with a population of 1067001(2001 Census). Most of this district is covered with dense forest and a long range of hills, which are home of wild elephant and tigers. The District is the centre of a religious movement called 'Mahima Dharma' which over the last century has spread throughout the India. Majority of the people lives in villages (91.29%) and agriculture is taken as their main occupation. Twenty six tribal communities viz. Sabara, Saora, Juanga, Saunti, Santal, Pendia, Paraja, Oraon, Munda, Mirdha, Matia, Mankidi, Mahali, Lodha, Koya, Kora, Kolha, Kishan, Kandha, Haria, Ho, Gand, Dharua, Binjhal, Bhumij and Bhuyan are glorifying the district. As per 2001 census, the tribal population of the district was 136501, which constitutes 12.79% of the total population of the district. They depend solely on their surrounding plants for more of their requirements from food to medicines.

The climate of the district is warm and humid. Three distinct seasons are felt during the year. Rainy season (mid June till October), winter (mid October to February) and summer (March to mid June). The annual rainfall is varying from 1420 mm to 1450 mm. The average temperature ranges from 37°C to19°C. Hills, serene environment of dense forest, picturesque river valleys and mountain peaks with ancient shrines are further characteristic features of the district.

The study was carried out in 15 villages in Kamahhyanagar sub-division of Dhenkanal district. The villages have been selected taking the following criteria into account (i) The villages are situated in the vicinity of the forest which harbours rich biodiversity (ii) The villages are chiefly inhabited by the tribes (iii) The traditional household and ritual system of the tribes is mostly based on the plants available in the locality (iv) The villages are situated in the mountainous terrain of the district i.e. not well communicated with the district head quarter.

In Kamahhyanagar sub-division of Dhenkanal district plants used as household and rituals form an integral part of the local culture, and information about plants and their uses are passed from generation to generation through oral folk lore, primarily amongst the elderly; they are natural retainers of traditional knowledge in their respective communities. The field study was carried out from November 2007 to December 2009, and information on the use of household and ritual plants was obtained through structured questionnaires, complemented by free interviews and informal conversations (Huntington 2000). The interviews were individually carried out and, during the first contacts with the local population, "native specialists" were identified, in other words, people who consider themselves, and are considered by the community as having exceptional knowledge about the use of plants. 123 (51 men and 72 women) were interviewed. Among these interviewees, 10% were aged 21-40 years, 40% were 61 years old or more and half of the sample (50%) were in the 41-60 age range. Surveys were conducted in different villages of Kamakhyanagar sub-division. Collections are valuable because they serve as voucher specimens, records of the plants that are known by community and function as specimens for systematic identification (Martin 1995). A voucher specimen facilitates the identification of the species encountered during the research and permits colleagues to review the results of the study (Jain and Rao1977; Jain 1987). Knowledgeable persons, experienced and aged persons, local healers of the villages were consulted for recording local name; parts of plants used as households. Personal interviews and group discussions with local inhabitants revealed some very valuable and specific information about the plants, which were further authenticated by crosschecking. In addition to crosschecking and recording folk names of plants through collecting voucher specimens, it is important to crosscheck information with different people and compare the results from different methods (Cunningham 2001). Interviews with people out of the village, pastures or forests were conducted on a systematic

Table 1. List of plants used for household by tribal people of Dhenkanal district.

Sl. No	Local Name	Botanical Name	Family	Parts used	Household Use
1	Bajramuli	*Sida cordifolia* (L.)	Malvaceae	Whole plant	Making broom to sweep outside.
2	Baunsa	*Bambusa stricta* (Retz.)	Poaceae	Stem, young branch	Frail mating, basket making bamboo cylinders to keep secret money and ornaments.
3	Khajuri	*Phoenix acaulis* (Roxb.)	Arecaceae	Leaf	Making of broom and mats.
4	Bena	*Veti*veria zizaniodes (L.)	Poaceae	Leaf ,root	Mat, scented cooling mats.
5	Tala	*Borassus flabellifer* (L.)	Arecaceae	Leaf lamina ,petiole	Grass mat making and binding material for thatching and frailing.
6	Beruhna	*Cyperus aloecuroides* (Rottb Descr)	Cyperaceae	Leaf	Making mat.
7	Panasi	*Pollinidium angustifolium*(Trin.)	Poaceae	Stem	Hanging rope shelf ,small bedstead.
8	Sisu	*Dalbergia sisoo* (Roxb.)	Fabaceae	Wood	Making of door, furniture & measuring device of grains.
9	Suama	*Tecoma undulate* (L.)	Bignoniaceae	Stem	Making of anvil in husking pedal & fishing creel.
10	Kumbhi	*Careya arborea* (Roxb.)	Lecythidaceae	Bark	Clothing.
11	Daru haladi	*Barberis asiatica* (Roxb.)	Barberidaceae	Root	Holy wood used as sandalwood.
12	Bhuinkurumi	*Ipomoea reniformis* (Roxb.)	Convolvulaceae	Stem	Making of large cylindrical basket to store grain and granary.
13	Moi	*Linne coromandelica*(Houtt.)	Anacardiaceae	Wood	Making of yoke.
14	Nalita	*Corchorus capsularis* (L.)	Tiliaceae	Bark	Rope.
15	Dhaura	*Anogeissus latifolia* (Roxb.)	Combretaceae	Stem	Handle of hatchet.
16	Panasa	*Artocarpus heterophyllus* (Lam.)	Moraceae	Wood	Churning stick.
17	Ghurudu	*Gardenia ganmifora* (L.)	Rubiaceae	Wood	Making of churning stick, granary and thatching.
18	Gambhari	*Gmeli*na arborea (Roxb.)	Verbenaceae	Stem	Making of yoke.
19	Lodha	*Symplocos* racemosa (Roxb.)	Oleaceae	Wood	Used in sacrificial fire.
20	Siali	*Bauhinia vahlii* (Wight & Arn.)	Caesalpiniaceae	Leaf ,stem	Making of dishes by sewing leaves and long mats.
21	Begunia	*Vitex negundo* (L.)	Verbenaceae	Leaf	Insecticide for seeds and grains.
22	Mahula	*Bassia latifolia* (Roxb.)	Sapotaceae	Seed and stem	Oil preparation wooden pot for cattle to eat.
23	Kia	*Pandanus fascicularis* (Lam.)	Pandanaceae	Stem made into paste	Bundling of fuel sticks, fencing.
24	Limba	*Melia azardirachta* (L.)	Meliaceae	Petiole of leaf and young stem	In sewing leaf dishes tooth brush.
26	Kaincha	*Abrus precatorious* (L.)	Fabaceae	Fruit , stem	Making of basket with cover, large tray of weaver work.
27	Amari	*Ipomoea fistulosa* (Mart.)	Convolvulaceae	Whole plant	For fencing.
28	Bheru	*Swieterta chloroxylon* (Roxb.)	Rutaceae	Leaf ,stem	Vegetable stick ladle.

basis to know more details about species, their management and distribution. The consulted literatures during field time for identification of species were Haines (1921-25), Kirtikar &Basu (1991) and Brahmam (1994-1996). The plants collected are listed here with their botanical names followed by family name, their local names in Oriya and the parts used for household and ritual purpose.

RESULTS AND DISCUSSION

Mainstay of tribal people of Kamakhyanagar is forest produces. Except for a few commodities like salt and cloth, the tribal's fully depend on the surrounding forest for their livelihood. They are very expertise in utilizing different plants both wild as well as cultivated for their livelihood. A total of 28 species belonging to twenty one families with their household plant parts have been listed in Table 1.It is observed that out of the several parts leave, stem and wood which are plentily available almost in all seasons of the year are used for various household appliances. They use different plant species for household materials like broom, mat, basket, measuring device of grains, insecticide to store grains etc. Maximum number of species represents the family such as Poaceae, Fabaceae and Arecaceae. Species of these families significantly contribute to the tropical deciduous forest flora of Indian sub-continent (Haines 1961). Thus the tribal people living in and around the forest have developed indigenous knowledge of utilizing these widely distributed plants for different household materials. Table 2 represents 15 plant species belonging to 11 families exhibiting ritual property. The religion of tribal community is the resultant of traditions and beliefs that have come down to them from antiquity. The traditional use of plants for various occasions is strictly based on folklore. For instance, the selection of bride in Juang tribes is based on rituals. There is no horoscope system. The priests are called as Nagansa. For selection of a girl for marriage, priest with other tribes of the village select a clean and sacred place. They keep one white variety of paddy (*Oryza sativa)* above two paddies in the name of proposed girls in different sets. The sets are then covered by a measuring unit (gouni made from straw of *Oryza sativa*) to prevent wind. The lower portion of gouni touching the ground is sealed by mud to prevent the entry of ants or insects inside. After 7days it is uncovered. If the paddy kept above is found fall down the girl representing the set is regarded lucky for the house and selected for marriage. There are other rituals like worshiping different trees, Sun God, mother Earth, Goddess Banadurga, Daluani Devata and Jangal Devata. Use of plants as rituals have also been observed in different parts of the country (Schultes and Hoffman 1979, Yadav et al, 1996, Ghate 1998, Mahato and Sahu 2008))

It can be concluded that Dhenkal district is rich in wide variety of plants and the tribal people are not only familiar with the

Table 2. **List of plants used as rituals by tribal people of Dhenkanal District.**

Sl. No	Local Name	Botanical Name	Family	Parts used	Rituals
1	Sajana pati malanga	*Dalbergia lanceolaria* (L.)	Fabaceae	Leaf, stem	Worshiping for propitiation of planet
2	Khirakoli	*Carissa spinarum* (L.)	Apocynaceae	Whole plant	Worshipped for welfare of family
3	Debadaru	*Polyalthia longifolia* (Thw.)	Annonaceae	Wood	Used for sacrificial fire
4	Ari(khaira)	*Acacia catechu*(wild)	Mimosaceae	Whole plant	Used in worship for family welfare
5	Kochila malanga	*Viscum monocium* (Roxb)	Loranthaceae	Leaf	Kept for success in every work
6	Kendu	*Diospyrosa melanoxylon*(Roxb.)	Ebenaceae	Wood	Used to avoid evil soul
7	Baruna	*Crataeva nurvala* (Buch.)	Capparaceae	Whole plant	Worshipped for welfare of family
8	Amla	*Emblica officinalis (Gaertn.)*	Euphorbiaceae	Whole plant	Worshipped for welfare of family
9	Anlei	*Crossandra infundibuliformis* (L.)	Euphorbiaceae	Flower	Used during worshiping of Forest Goddess
10	Dimiri	*Ficus hispida*(L.f)	Moraceae	Whole plant	Worshiping for propitiation of planet
11	Valia	*Semecarpus anacardium* (L.f)	Anacardiaceae	Seed	Kept for success in every work
12	Sahada	*Streblus asper*(Lour.)	Moraceae	Whole plant	Worshipped as a sacred plant
13	Malanga	*Scurrula parasitica* (Linn.)	Loranthaceae	Leaf	Worshiping for propitiation of planet
14	Ostha	*Ficus religiosa*(L.)	Moraceae	Whole plant	To propitiate against planet Saturn
15	Aswagandha	*Withania somnifera* (L.)	Solanaceae	Root	To prevent evil eye of others

knowledge of plant species in their ecosystem, but also understand the ecological interactions for the various components of their resources. Their socio cultural activities, housing and ritual practices reflect the interdependency and harmony with the biodiversity of the surrounding. The present study on the traditional knowledge of the tribals would help in wider dissemination of this knowledge for long term conservation of a sustainable livelihood for the tribes.

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