

Full Length Research Paper

Medicinal plants grown in and around Guskara used by local poor people for treating some common ailments

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An ethnobotanical survey was undertaken to collect information about some indigenous medicines used by the poor people in and around Guskara, a moffusil town in Burdwan district, West Bengal, India during the period 2004 and 2005. Information was gathered through questionnaire and personal interviews during field trips. The investigation revealed that, the poor villagers, mainly the tribals use many medicinal plants for treating different ailments. Among them, 20 plant species of different families are used to cure skin diseases, reptile bites, stomach ache, cough and cold and various gynaecological disorders. These plants are enumerated with their scientific names, vernacular names, parts used and medicinal importance. Further studies on chemical and pharmacological properties of these plants are needed to validate the claim. This study showed that many people in this area still continue to depend on these medicinal plants, at least for the primary healthcare. The traditional healers are dwindling in number and there is a grave danger of traditional knowledge disappearing soon, since the younger generation is not interested in carrying on this tradition. So the indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources. This study thus underlines the potentials of the ethnobotanical research and the need for the documentation of traditional knowledge of healing, pertaining to the use of some important but less known medicinal plants for the greater benefit of mankind.

Key words: Pharmacological actions, ethnomedicinal, traditional healers, gynaecological disorders.

INTRODUCTION

Since time immemorial, many medicinal plants are well known in this country. In the RIG-VEDA (4500 to 1000 B.C.) Aryans have mentioned about the healing properties of some herbs in the form of sonnets, which were often recited in religious rituals. Later on special faculty known as AYURVEDA dealt with human philosophy of health including utilization of medicinal plants for restoring normal physical fitness. Further advancement of this process was materialization of SUSRUTA-SAMHITA and CHARAKA- SAMHITA (1000 B.C.) which incorporates comprehensive chapters on the therapeutic use of various plant species.

Ancient ethnic communities around the world had learnt to utilize their neighborhood herbal flora for various curative as well as offensive purposes (Subramoniam and Pushpangadan, 1995). Due to lack of literacy, their knowledge on plants developed often at the cost of their

dear life through centuries old experience could not be perfectly documented and it had rather descended from one generation to another as a domestic cultural heritage. Documentation of traditional knowledge on ethno medicinal use of plants has been considered as a high priority (Anonymous, 1994; Hamil et al., 2000; Dutta and Dutta, 2005; Cox and Ballick, 1994; Badola and Aitken, 2003) to support the discoveries of drugs benefiting mankind.

India with her 35000 plant species which are widely used for medicinal purposes (reported in 2nd Global Summit on medicinal and aromatic plants, October 25th to 29th, 2004, New Delhi) and 550 tribal communities belonging to 160 linguistic groups inhabited in varied geographic and climatic zones with diversified plant species, varied culture, rich traditional knowledge system and wisdom possess an ethnobotanical emporia (Hamil et al., 2000; Pieroni, 2000). In India, various communities use over 50% of the plant species of any ecosystem in ethnomedicine and in general over 7500 species are utilized in primary health care by various tribes (Uniyal et

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al., 2006). The tribal communities are the sole custodian of the unique traditional knowledge system and wisdom about the ambient flora and fauna and the heritage of Ethno medicine. The people of modern societies are not aware of this rich knowledge system as the ethnic communities do not have their own scripts and written language. Ethno-medicinal explorations and simultaneous prioritization of pharmaceutically important plant species for conservation through *ex-situ* cultivation have been identified as vital aspects for the drug industry development (Uniyal et al., 2006; Badola and Pal, 2002; Dhar et al., 2002). As a result, the pharmacology, disease diagnosis and the information about prescriptions remain unclaimed. Except few works, in West Bengal, no comprehensive account on tribal knowledge system and wisdom on plant species, as the therapeutic agents, in the form of prescriptions for various human ailments have appeared so far. Keeping this in view, the present work has been done on the *Santhails* inhabiting the Guskara subdivision, a unique phytogeographical region of Burdwan district, West Bengal.

The present paper is an attempt to document and collect all these information available on ethno-medicinal uses of plants by different tribes for combating various ailments and these traditional knowledges pertaining to the use of some important but less known medicinal plants for the greater benefit of mankind. Species were identified using standard Floras and books (Kirtikar and Basu, 2001; Borthakur, 1997; Vasudeva and Shampru, 1997).

Efficacy of traditionally used plants

In India, the use of plants is a widespread practice and the persistence in the use of medicinal plants among people of urban and rural communities in Indian could be considered as evidence of their efficacy and there are very few experimental studies, which validate the therapeutic properties of these plants. Traditional medical treatment, supported mainly by the use of medical plants, represents the main alternative methods which has its mainly undocumented scientifically and is still communicated verbally from one generation to the next. Many leads for further investigation could be discovered.

In developing countries and particularly in Colombia, low income people such as farmers, people of small isolate villages and native communities use folk medicine for the treatment of common infections. These plants are ingested as decoctions, teas and juice preparations to treat respiratory infections (Anonymous, 1994). They are also made into a poultice and applied directly on the infected wounds or burns. When people from these remote communities get an infectious disease, they are usually treated by traditional healers and shamans because of their expertise in such procedures as making diagnoses, treating wounds, setting bones and making herbal medicines. Traditional healers claim that their

medicine is cheaper and more effective than modern medicine. Patients of these communities have a reduced risk to get infectious diseases from resistant pathogens than people from urban areas treated with traditional antibiotics. However, if they are treated in a hospital, the chance of contracting a nosocomial infection is increased (Cox and Ballick, 1994).

There are many medicinal plants that are useful in treatment of type 2 diabetes, but in the southwest, the mesquite plant (*Prosopis glandulosa*) and prodigiosa (*Brickellia grandiflora*) are found to be particularly effective in the stabilization of the blood glucose. These are not the only plants out there though. A short list of some of the plants is the following:

1. *Castela emory* (Simarubaceae)
2. *Ephedra* spp. (Ephedraceae)
3. *Krameria* spp. (Krameriaceae)
4. *Larrea divaricata* (Zygophyllaceae)
5. *Opuntia* spp. (Cactaceae)
6. *Peniocereus greggii* (Cacteaceae)
7. *Plantago* spp. (Plantagenaceae)
8. *Salvia columbariae* (Labiatae)
9. *Verbena gooddingii* (Verbenaceae)
10. *Cacalia decomposita* (Aster)

METHODOLOGY

Information was gathered, taking interview of the informants and as witness of the uses during the period of studies in the field. The informants were requested to accompany us in the field to detect the plants and their locations. Alternatively, a particular plant was picked up and queries made as to how it was useful for them. When discussion on one plant was over, a second plant was taken up and so on. It was also found that after understanding the genuine purpose of the study, the informants brought plants and narrated their uses. The tribal people are usually very unwilling to disclose their knowledge about the uses of the plants. Usually, they maintain secrecy about the use of certain medicine like, medicine of refractive diseases, diseases of women, contraceptive and herbs for causing abortion etc. They believe that the medicine will lose their healing power if many heads know about them. After establishing friendly relationship, questionnaires were made about plants and their uses. They understand that the authors were genuinely interested in their plants and they were glad to help. Emphasis was first given to make the inhabitants understand that the information would be preserved for the benefit of their next generations. Next, their neighbours would not be told about the information given in confidence, because each family often has their secret remedies given free to their friends but not sold to others. Once information on a particular plant was taken as reliable after repeated verification, its local name and uses were recorded. Details about the plant part utilized in preparation of the medicine, the ailments, dosage were recorded (Figures 1 to 8).

PRESCRIPTIONS AS REVEALED BY THE INVESTIGATION

The present investigation revealed that the *santhails* use so many plants for treating different ailments. Among

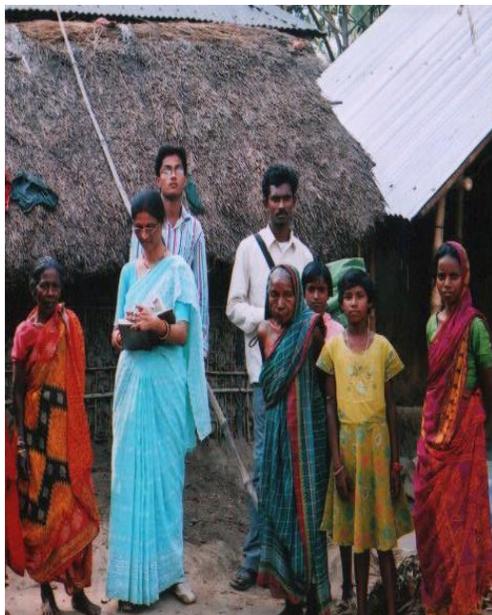


Figure 1. One of the two author's interview of a tribal family.



Figure 2. Conversation with a lady Informant.

them, 20 plants species of different families are used by the major portion of this community to cure skin diseases, reptile bites, stomachache, cough and cold and various gynaecological disorders. Surprisingly, for some particular ailments like bone fracture and dislocation, most of the inhabitants still prefer herbal use rather than the allopathic treatment, as they like to avoid undergoing

painful therapies of the later. Many natives still prefer and trust upon using traditional health care system as the excellent and much effective means to cure their ailments over allopathic drugs (Abebe and Ayehu, 1993; Addis et al., 2001; Teklehaymanot and Giday, 2007). The prescriptions of the 20 plant species used by the *santhals* are as follows:

1. *Argemone mexicana* Linn.

Family: Papaveraceae

Local name: Pili kateri (*Santhali*)

Use: The root-powder is mixed with sugar in 2:1 ratio and taken orally with water for the treatment of skin diseases specially leucoderma.

2. *Asparagus racemosus* Willd.

Family: Liliaceae

Local name: Naarbod (*Santhali*)

Use: The root-powder (10 gm) is continuously taken for 30 days in the morning in empty stomach to increase vigour and strength.

3. *Azadirachta indica* Juss.

Family: Meliaceae

Local name: Neem (*Santhali*)

Use: Seed-powder is applied for curing various skin diseases. Seed oil is used in rheumatism. Water extract of root bark (10 ml) is used against malarial fever. Decoction of dry fruits is used as tonic and stomachic. Tender twigs are used as tooth brush.

4. *Butea monosperma* (Lam.) Kuntze:

Family: Papilionaceae

Local name: Palas (*Santhali*)

Use: Dry seed-powder is applied for removing ring worm from the worm infested area. Petiole is directly chewed during heat in urination.

5. *Cassia tora* Linn.

Family: Caesalpiniaceae

Local name: Titi (*Santhali*)

Use: the powder of the dry seeds is mixed with 1 to 2 years old 'gurh' and seven small balls are prepared. Each ball is taken every morning with a glass of water in empty stomach for a week to cure asthma.

6. *Cuscuta reflexa* Roxb.

Family: Cuscutaceae

Local name: Amarbel (*Santhali*)

Use: The plant extract is directly applied on oil free hair half an hour before bath for a week to get rid of dandruff.

7. *Mangifera indica* Linn.

Family: Anacardiaceae

Local name: Aam (*Santhali*)

Use: The tender leaf decoction is used to cure eruptions of the tongue. Stem bark mixed with lime in 5:3 ratio is used against jaundice.



Figure 3. One of the two authors with a male informant.



Figure 4. The author with an informant in the field.

8. *Moringa oleifera* Lam.

Family: Moringaceae

Local name: Sajjan-sag (*Santhali*)

Use: 3 to 4 drops of leaf juice is applied thrice a day to cure eye diseases particularly conjunctivitis.

9. *Ocimum sanctum* Linn.

Family: Lamiaceae

Local name: Tulsi (*Santhali*)

Use: Leaf juice with honey and common salt in 5:2:1 ratio is used against cough and cold. Leaf paste mixed with lime and common salt (3:2:2 ratio) is applied against ringworm continuously for five days.

10. *Solanum indicum* Linn.

Family: Solanaceae

Local name: Jungli baigon (*Santhali*)

Use: The dry root-powder with black pepper (*Piper longum*) (5:2 ratio) against stomach pain.

11. *Annona squamosa* Linn.

Family: Annonaceae

Local name: Ata (*Santhali*)

Use: 5 g mixture of dried root-powder and black pepper (*Piper longum*) (3:1 ratio) is taken once in the morning in empty stomach for five days by the women for abortion up to 3 to 4 months of pregnancy.

12. *Boerhavia diffusa* L.

Family: Nyctaginaceae

Local name: Punarnava (*Santhali*)

Use: Decoction of the whole plant (15 ml) is given once a day in the morning for fifteen days for the treatment of leucorrhoea. Dried plant-powder is smoked as cigarette once a day for the treatment of asthma.

13. *Borassus flabellifer* L.

Family: Arecaceae

Local name: Tala (*Santhali*)

Use: Ash of male inflorescence (after burning of male inflorescence) with powder of black pepper (*Piper longum*) and cow milk in the ratio 2:1:1 is used by the women as contraceptive.

14. *Ficus hispida* Linn. f.

Family: Moraceae

Local name: Demburu (*Santhali*)

Use: Boiled green fruits with a pinch of common salt are given to mother as a galactagogue for better milk secretion.

15. *Heliotropium indicum* L.

Family: Boraginaceae

Local name: Hatisundha (*Santhali*)

Use: Decoction of root (10 ml) with 2 to 3 years old honey (2 ml) is given as vitamin for iron deficiency of woman during pregnancy period.

16. *Hibiscus rosa-sinensis* L.

Family: Malvaceae

Local name: Jaba-gacha (*Santhali*)

Use: Paste of stem bark (15 g) is given to woman continuously for five days in the morning for abortion up to 3 months of pregnancy. A mixture of pasty mass of flower buds with rust of iron and country liquor in the ratio



Figure 5. One of the two authors taking interview of another tribal family.



Figure 6. An informant.

3:2:2 ratio is given to woman during menstruation period as a contraceptive.

17. *Nelumbo nucifera* Gaertn.

Family: Nelumbonaceae

Local name: Padam (*Santhali*)

Use: Decoction of rhizomes of white flowered plant (pundi-salukid) about 15 ml taken by women in empty stomach continuously for fifteen days as a cure for white discharge.

18. *Phyla nodiflora* (L.) Greene

Family: Verbinaceae

Local name: Jalapipla (*Santhali*)

Use: Decoction of root (3 ml) with unboiled egg (2 mg) is taken by women to promote sexual desire.

19. *Strychnos nux-vomica* L.

Family: Loganiaceae

Local name: Gorumar (*Santhali*)

Use: Paste of stem (3 gm) with kusum (*Schleichera trijuga*) seed oil (1 ml) is prescribed twice a day after taking food for ten days continuously for the treatment of leucoderma.

20. *Tephrosia purpurea* (L.) Pers.

Family: Papilionaceae

Local name: Anuraida (*Santhali*)

Use: Decoction of leaf (5 ml) mixed with honey (2 ml) is given to women twice a day continuously for one month against post natal complications.

Conclusion

The present investigation revealed that the tribal use so many medicinal plants for treating different ailments. Among them, 20 plant species of 18 different families are used to cure various skin diseases, stomachache, cough and cold and different gynecological disorders. This study also revealed that a number of tribal people in this particular region still depend on these medicinal plants, at least for the primary health care. The traditional healers are dwindling in number and there is a grave of traditional knowledge disappearing soon, since the younger generation is not interested to carry on this tradition. Therefore, it is an appropriate time to document systematically traditional ethnomedicinal practices for conservation.

Introducing techniques of *ex-situ* cultivation of commercially viable species (Badola and Pal, 2002; Bharat and Hemant, 2008; Badola and Butola, 2004; Pei, 2001) would present a strong option of income generation to community people. Many natives still prefer and trust upon using traditional health care system as the excellent and much effective means to cure their ailments over allopathic drugs (Abebe and Ayehu, 1993; Addis et al., 2001; Teklehaymanot and Giday, 2007).

So the indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of



Figure 8. A tribal lady.



Figure 8. A tribal family with their mango garden.

for the documentation of the traditional knowledge of healings, pertaining to the use of some important but less known medicinal plants for the greater benefit of mankind.

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biological resources. This study thus underlines the potentiality of the ethnobotanical research and the need