

Ethnomedicinal Plants used in Different Seasons by Tribals of Asansol Raniganj Coalfield area of West Bengal, India

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ABSTRACT

Ethnomedicinal plants are very popular among the various tribal communities in India. An ethnomedicinal study was conducted in the Asansol-Raniganj coalfield area of West Bengal during the period 2012–2015. It was found that this area is rich in both mineral resources and ethnomedicinal plant resources. The specific use of the ethnomedicinal plant species and their use in different seasons were noted. The preference for ethnomedicine by the tribals of the Asansol-Raniganj coalfield area strengthens the importance of documentation of these ethnomedicinal plants.

Keywords: *Ethnomedicinal; Asansol; Raniganj; Seasons*

INTRODUCTION

Tribals in the Indian subcontinent have given great importance to their traditional healthcare system. The preservation of their ethnomedicinal knowledge is of great importance to the world. This acquired knowledge must be given proper recognition and these important natural resources should be properly conserved before they are lost from the ecosystem (Jain & De, 1964). The Asansol-Raniganj coalfield area is located in the western part of the Burdwan district of West Bengal. The Sanhtals are the most dominant tribe in this area in terms of population. Other tribes found in this area are Munda, Mali, Modikor, Ho, etc. These tribes have a rich ethnomedicinal knowledge which is passed from one generation to the next by means of oral communication. Ethnomedicinal knowledge plays a vital role in drug discovery (Dey & De, 2010). Therefore, it must be documented before it is lost from the society due to a lack of interest in the younger tribal population. The objective of the study was to systematically document the use of ethnomedicinal plants in different seasons by the tribals of the Asansol-Raniganj coalfield area of West Bengal.

METHODOLOGY

The Asansol Raniganj coalfield area is located in the Eastern coalfields. The study was done in the tribal localities of Sripur, Kalipahari Chanda, Nigha, Tirat, and Bansra of the Asansol Raniganj coalfield area from March 2012 to June 2015 in different seasons to collect the ethnomedicinal plants in their flowering condition. The data was gathered through oral communication with approximately twenty tribal medicinal practitioners and elderly people with expertise in ethnomedicinal knowledge, as suggested by Jain (1964), Martin (1995), and Maundu (1995). The tribal communities were repeatedly consulted so as to collect authentic data and no important information regarding these ethnomedicinal plants was missed. The plants used by the tribals were verified by the taxonomists and forest officers in the study area to avoid misidentification and kept for future reference. To collect the ethnomedicinal data in different seasons, the volunteers were also associated during the survey so that the language of the different tribal communities did not become a barrier in collecting the data in detail. The views of informants on Prior Informed Consent (PIC) and intellectual property rights (IPR) were taken on this ethnomedicinal knowledge. No conflict of interest was noted in this ethnobotanical study. All the safety measures were taken and the vital knowledge of the tribals about the ethnomedicinal plants was carefully documented.

RESULTS AND DISCUSSION

The Asansol-Raniganj coalfield area has a rich vegetation of medicinal plants and it is utilized by tribals and people working in collieries in different seasons. In this study, the usefulness of different ethnomedicinal plants towards curing various diseases was documented, which can be easily afforded by the common people. Poor economic conditions, religious faith, and lack of medical facilities in this area induce the people to utilize these plants of ethnomedicinal importance. The tribal medicinal practitioners have a rich knowledge of these ethnomedicinal plants, but the information given by them is verified by repeated consultations. There are chances of wrong identification of these ethnomedicinal plants due to the adoption of modern systems of medicine by the tribals of this area (Saha & Sahu, 2012). Individual and group interviews were conducted to get vital information about the use of ethnomedicinal plants in various seasons of the year. The use of various ethnomedicinal documents from various case studies of patients was correlated with the uses reported by other workers in different parts of India, such as Chakraborty and Bhattacharjee (2006) and Dey and De (2010) from east India; Maheshwari, Singh and Saha (1980) from north India; Kumar, Suman, and Dash, (2004) from central India; Jain, Jain, and Singh, (2009) from the north-west region; Jagtap *et al.*, (2009) and Jothi, Benniamin and Manickam (2008) from west India and Ramachandran and Nair(1981) and Ganesan, Venkateshan and Banumathy (2006) from southern India. Similar uses are noted in many ethnomedicinal plants in different parts of India. Table 1 shows the seasonal correlation of disease and ethnomedicinal plants used by tribals and other rural people in the Asansol-Raniganj coalfield area.

Table 1: Seasonal Correlation of Disease and Ethnomedicinal Plants

Disease	Name of the ethnomedicinal plant	Local Name	Family	Parts used	Time of Availability
1.Boils	Artocarpus lakoocha Roxb..	Dahua	Moraceae	Bark	August-March
	Euphorbia antiquarum L.	Tinshira	Euphorbiaceae	Leaf	Throughout the year
	Hibiscus syriacus L.	Sada joba	Malvaceae	Flowers	Throughout the year
	Tephrosia purpurea(L) Pers	Kulathia	Papilionaceae	Whole plant	April-October
2.Constipation	Cassia fistula L.	Nurnic	Caesalpiniaceae	Fruits/Leaves	April-August
	Ricinus communis L.	Rerhi	Euphorbiaceae	Bark, Roots, Seeds	March-September
	Syzygium cumini(L.) Skeels.	Jam	Myrtaceae	Fruit	April-September
3.Diarrhoea	Agele marmelos	Bel/ Sinjo	Rutaceae	Fruit	March-September
	Celosia argenteaL.var.cristata(l.)Kuntze	Morgajhuti	Amaranthaceae	Flowers	May-August
	Cassia fistula L.	Nurnic	Caesalpiniaceae	Leaves	April-August
	Cissampelos pareira L.	Telomalla	Menispermaceae	Root, Leaves	August-November
	Cyperus rotundus L.	Mothaghas	Cyperaceae	Tuber	Throughout the year
	Vernonia cinerea L.	Sonnraj	Asteraceae	Whole plant	July-November

Ethnomedicinal plants used by tribals

4. Dysentery	Boerhaavia diffusa(L.)Poir	Punarnaba	Nyctaginaceae	Roots	January- April
	Fleminga strobilifera L.W.T Aiton	Chorchabuk	Fabaceae	Root	October - December
	Helicteres isora L.	Atmora	Steruliaceae	Seeds, Fruit, Root	April- December
	Musa paradisiaca L.	Kela ba	Musaceae	Fruit	Throughout the year
	Urginea indica Kunth	Bir Payaj	Liliaceae	Bulbs	April- September
5. Jaundice	Achyranthes aspera L.	Chirchiti	Amaranthaceae	Stem	October- January
	Croton bonplandianum Baill.	Churchuri	Euphorbiaceae	Seeds	September- December
	Alangium salvifolium Lamarck	Akarkanta	Alangiaceae	Root, Bark	April-October
6. Indigestion	Allium sativum L..	Rasun	Lilaceae	Leaves and bulb	Throughout the year
	Calotropis gigantea L.R.Br	Akanda	Asclepiadaceae	Root	Throughout the year
	Semecarpus anacardium L.	Bhela	Anacardiaceae	Seeds	April-October
7. Stomach ache	Cajanus cajan L.	Arhar	Fabaceae	Leaf	Throughout the year
	Ficus racemosa L.	Lowa	Moraceae	Receptacles	March- September
	Boerhaavia diffusa(l.) nom .cons.	Punarnaba	Nyctaginaceae	Whole plant	April- October
	Vernonia cinerea L.	Sonnraj	Asteraceae	Whole plant	July- November
8. Vomit	Euphorbia hirta L.	Pusi toa	Euphorbiaceae	Whole plant	Throughout the yea
	Rubia cordifolia L.	Sajisthan	Rubiaceae	Root	August- December
9. Cough and Cold	Allium sativum L.	Rasun	Lilaceae	Leaves and bulb	Throughout the year
	Amaranthus viridis L.	Bon notey	Amaranthaceae	Leaf	December- April
	Bacopa monnieri L.	Brahmi	Scrophulariaceae	Leaves, stem, flower	July- September
	Bauhinia purpurea L.	Raktakanch an	Caesalpiniaceae	Root, leaf	September- November
	Brassica campestris L.	Turi/ Sarson	Cruciferae	Seed	November - April
	Chrozophora plicata A. Juss.	Pango nari	Euphorbiaceae	Root	February- August

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	<i>Euphorbia hirta</i> L.	Pusi toa	Euphorbiaceae	Whole plant	April-October
	<i>Euphorbia nerifolia</i> L.	Masa	Euphorbiaceae	Leaf	April-September
	<i>Glycyrrhiza glabra</i> L.	Ultat	Fabaceae	Root	Throughout the year
	<i>Madhuca longifolia</i> (J. Konig) J.F. Macbr	Mahua	Sapotaceae	Flower, fruit, seed	May - September
	<i>Hibiscus rosa sinensis</i> L.	Joba	Malvaceae	Petals	Throughout the year
	<i>Hibiscus syriacus</i> L.	Sada joba	Malvaceae	Seeds	Throughout the year
	<i>Urginea indica</i> Kunth	Bir Payaj	Liliaceae	Bulbs	April-September
10. Headache	<i>Achyranthes aspera</i> L.	Chirchiti	Amaranthaceae	Stem	October-January
	<i>Aloe vera</i> (L.)Burm.f.	Ghritkumari	Liliaceae	Leaf pulp	Throughout the year
	<i>Alstonia scholaris</i> R Br.	Chatnia	Apocynaceae	Bark	March - August
	<i>Cynodon dactylon</i> (L.) pers.	Dhurba	Poaceae	Whole plant	Throughout the year
	<i>Hibiscus syriacus</i> L.	Sada joba	Malvaceae	Seeds	Throughout the year
	<i>Vitex negundo</i> L.	Boan	Verbenaceae	Leaf	Throughout the year
11.Toothache	<i>Allium sativum</i> L.	Rasun	Liliaceae	Bulb	Throughout the year
	<i>Alstonia scholaris</i> R Br.	Chatnia	Apocynaceae	Latex	March - August
	<i>Cassia fistula</i> L.	Nurnic	Caesalpiniaceae	Leaves	April-August
	<i>Calotropis gigantea</i> L.R.Br	Akanda	Asclepiadaceae	Latex	Throughout the year
	<i>Euphorbia nerifolia</i> L.	Masa	Euphorbiaceae	Latex	April-September
	<i>Madhuca indica</i> Gmel.	Mahua	Sapotaceae	Root,bark	May - September
	<i>Solanum sisymbriifolium</i> Lamk.	Katari	Solanaceae	Fruits	June-September
12.Gout	<i>Clerodendrum viscosum</i> Vent.	Ghentu	Verbenaceae	Leaf	April-August
	<i>Euphorbia antiquorum</i> L.	Etkec	Euphorbiaceae	Stem,Leaf	Throughout the year
	<i>Piper longum</i> L.	Ralli	Piperaceae	Fruits, Root	June -October
	<i>Solanum nigrum</i> L.	Kakmachi	Solanaceae	Whole plant	April -October
	<i>Vitex negundo</i> L.	Boan	Verbenaceae	Leaf	Throughout the year

CONCLUSION

The ethnomedicobotanical study in the Asansol-Raniganj coalfield area was conducted with special emphasis on ethomedicinal plants to cure various ailments in different seasons. It was found that a well

developed ethnomedicinal system exists in the study area and this knowledge, which is an important part of the heritage and culture, needs to be scientifically documented before it is lost from the society. These herbal drugs prescribed by traditional medicinal practitioners should be administered at the proper time and dosage to achieve the desired effects. The discovery of the active compounds of these ethnomedicinal plants may help pharmacologists in drug development which can be easily afforded by the common man. Research on these plants must be encouraged to identify the active constituents that can be incorporated into modern drugs so that one can get the benefit of both traditional and modern practices for the welfare of mankind.

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