CHAPTER: IV

Materials and Methods
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The methodology adopted for the present study includes literature survey, field survey, data collection, and plant specimen collection, preparation of herbarium materials, photo documentation, preliminary ethnopharmacological studies and presentation of the data.

4.1 Literature Survey

Literature screening can be categorized into botanical and nonbotanical lines. Various floras, publications on economic botany, relevant journals etc. were consulted. Books and journals in the field of Anthropology, Sociology and Ethnology, Historical accounts, folk literature Government reports, census publications, gazetteers etc., were the non-botanical works screened. Literature pertaining to study area and people, vegetation and flora was surveyed to gain preliminary knowledge for the work. Review of literature on Ethnobotany and ethnopharmacology was carried out to interpret and analyses the data collected from the area. All the available literature regarding ethnobotany and ethnopharmacology published or unpublished were collected and description were prepared accordingly. For comparison of Ethnobotanic uses, Dictionary of Indian Folk Medicine and Ethnobotany (Jain, 1991), Wild Relatives of Crop Plants in India (Arora, 1951), and Useful Plants of India (Ambasta, 1986) were used.

4.2 Field survey

To get a broad overview of the utilization of medicinal and wild edible plants and the cultural context of their uses, anthropological methods were applied (Bernard, 1988; Martin, 1995). An open-ended semi-structured interview with a rather simple questionnaire was employed to elicit information regarding the vernacular names in their local dialect or region, specific uses, associated folklore (John K Joseph & Antony, 2008). To collect first hand information on new sources of drugs, foods and folk, knowledge regarding conservation of biodiversity, intensive ethnobotanical explorations were conducted in selected villages of Kasaragod district of Kerala State and ethnobotanical and non ethnobotanical information. Ethnomedicinal information include tribal name, parts used, method of preparation, detailed application, dosage and administration of plants used for various ailments were gathered.
Gramapanchayats were selected, where the tribal pockets were abundant in number for documentation. They are Madhur, Karadukka, Badiyadka, Kumbla, Manjeswaram, Mangalpady, Vorkady, Meencha, Paivalike, Puthige, Pullur Periya, Kodom Belur, Kallar, Panathady, Bedadka, West Eleri and East Eleri.

4.3 Data collection

Repeated field visits were conducted to the settlements of Koraga and Mavilan tribal communities of 17 Gramapanchayats of Kasaragod district of Kerala state. Almost 100 informants or tribal healers were interviewed from both Koraga and Mavilan tribes. The tribal informants were with age group of 40 - 90. From the ethnobotanical survey it was noticed that the persons between the age group of 50-90 are more familiar with medicinal plants for curing diseases. Data collected through careful interaction with the tribes especially through personal interviews (Plate 1 D) and group discussions (Plate 1A & Plate 7 F). It helped to document the socio-cultural and economic aspects, present and past way of life and the method of preparation, administration and conservation of the plants. Collected data were cross checked with other elderly people to ensure the specificity. Interaction was made in local language with the help of tribal promoters, during data collection. Data sheets and questioners (Appendix 1 & 2) were used for data collection which includes, collection number, name and age of informant, place, local name of plants, botanic name, family and specificity in collecting useful parts, detailed method of drug preparation, specificity of dosage and administration.

4.4 Consent form

A brief discussion was made with the informants at each tribal settlements, prior to ethnobotanical data collection to aware them on the importance of the present study and to get their consent and explain them that their co-operation is a valuable contribution to the successful documentation and this is done for future and further study. Before collecting the information about medicinal plants used by the tribal communities for curing various ailments, obtained the duly filled consent (Appendix 3 & Plate 1 B) form from the informants/traditional knowledge holders. The consent form includes name, address, age, sex, occupation educational qualification, signature of the informant, date and place of the survey, summary of the information and name and signature of ethno-botanical expert.
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A. In a discussion with Mavilan tribes at Panathady colony
B. Obtaining consent form
C. A group photo at Kumbala
D. Interviewing valiya Maani at Panathur
E. Documentation of data regarding basket making at Badiyadukka colony
F. Processing of collected specimens
4.5 Herbarium preparation

Herbarium specimens were collected from the study area and identified with the help of standard floras (Hooker, 1892 - 1897; Gamble & Fischer, 1915 - 1936; Manilal & Sivarajan, 1982; Mathew, 1982; Ramachandran & Nair, 1988; Gopalakrishna Bhat, 2003; Anil Kumar et al., 2005). Specimens were processed by wet method (Jain and Rao, 1977) made into herbarium for future reference and deposited in to Herbarium of JNTBGRI (TBGT). During field visits the photographs were taken on the tribal settlements, study area, informants, and plant parts for further reference and identification.

4.6 Quantification study

During the field survey the information on quantification of medicinal plants were also collected. It includes, plant parts collected, its quantity, collecting time, processing of collected materials etc. These data were cross checked with available source, State level investigation of the medicinal plants by Sasidharan and Muraleedharan (2000).

4.7 Ethnopharmacological study

The methodology of ethnopharmacological studies of selected two species includes collection of plant material, preparation of the plant extract and experiment in animals. The animal experiment includes two methods they are carbon tetrachloride (CCl₄) – induced hepatotoxicity studies (Bishayee et al., 1995) and Paracetamol-induced hepatotoxicity studies (Anubha Singh & Handa, 1995). Detailed methodology is given in chapter IX.

4.9 Presentation of the Data/ enumeration

The plants species are enumerated and presented in family wise in alphabetic order. Angiospermic and non angiospermic plants are enumerated separately. The species ID number is given continuously in family wise in alphabetic order. Medicinal plant species are categorized as single drugs and combination drugs. The species ID is given in the poly herbal formulations table for referring description and other plant details. In single drug enumeration given the Latin name first followed by vernacular name, specimen examined, distribution of the plant, habitat, description, ailments, and plant parts used, method of preparation and mode of administration and dosage. Combination drugs are given in a small table having botanical name, family, vernacular name, parts used, ailments and species ID number. The non
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A. Raman, Mavilan informant explains the method of preparation of drug by demonstrating the medicinal plant
B. Jaya, Koraga informant collecting medicinal plants
C. On the way to Kammady tribal settlement
D. Koraga worship place at Vorkady
E. Multi grade learning centre at Kolathukkad settlement
F. A Mavilan settlement at Nattakkallu
ethnomedicinal plants and their information are also given in enumeration I. It includes cultivated/wild edible plants, plants used for basket making, for fire woods, fodder and miscellaneous use. A detailed description about preparation, administration and application of the drugs are also given. Ethnobotanical data collected from Koraga and Mavilan tribes are presented in the enumeration given abbreviations separately ('K' for Koraga and 'M' for Mavilan). Ethnopharmacology of selected plant species given in chapter IX.