ABSTRACT

The field survey for documentation of Ethno-medicinal plants of different villages of dang’s district was carried out during October-2015 to April-2016. Study mainly interviewed 10 traditional healers of different villages like Borigavtha, Jhawda, Galkund, Bhapkhal, Ranpada, Nanapada, Sakarpatal and Bardipada. Almost about 85 different plant species were used as medicine for querying different diseases like Stomach pain, Fracture, Fever, Skin disease, Ulcer, Vomiting, Wounds, and Diabetes and for Cattle diseases. Roots and Bark was used in higher amount as a part used for medicine

Key words: Ethno-medicinal plants, Tribe Healers, Dang’s.
Introduction

Ethno-botany is the study of how people of a particular culture and region make use of indigenous plants. Ethno-botany has its roots in botany, the study of plants. Botany, in turn, originated in part from an interest in finding plants to help fight illness. In fact, medicine and botany have always had close ties. India is one among the 12 mega diversity countries having 3 out of 25 hot spots. The 17, 000 sq km long strip of forest along the seaward side of the Western Ghats is enriched with 4050 plant sp. The tribals in the Gujarat state use about 750 medicinal important and 450 economically important plant species. The Dangs forest falls on the extreme northern part of Western Ghats. The Dangs is a tribal district, with the Bhil, Konkani (kunvi), Varli, Kotwalia, Kathodi and Gamit being the major tribal groups. The Bhils have historically been residing in the Dangs whereas the other tribes came to the Dangs in search of a livelihood. The district comprises of 311 villages and one taluka. The total population of the Dangs as per 2001 census is 186,729, divided in 36,498 households. The villages are small in size. The average population of the villages is 600 persons and the village consists on an average of 117 households. The Dangs district bordering Maharastra state is covered with high hills and rich forests. The Dangs is the southernmost district in Gujarat, which starts from the rugged mountain chains of the Sahyadri range of the Western Ghats in the southwest and descends on the western side of extending undulating tract. Dangs district is situated between the parallels of latitude 2033'40" and 21 5'10" and the meridians of longitude 73 27' 58" and 73 56' 36". The district is bounded in the North by Vyara and Songadh Taluka of Surat district of Gujarat and Navapur Taluka of Dhulia district of Maharastra; on the east by Sakri taluka of Navsari District of Maharastra and on the West by Vansda taluka of Navsari district and Vyara of Surat district of Gujarat State. As is well known in tribal communities across the world, the forests form an integral part of our lives. The Dangitribals of the Dangs district of south Gujarat have a tradition of medicine-men who are known as ‘bhagats’ who use forest plants in treating the illness of their community. Some studies have been done to document the plants used by the Dang tribal living...
in the Saputara and Purna forests also the Waghai forests of Dangs district. The area covered by the present study covers more than 20 villages. These villages were also chosen as the medicine men (bhagats) of these villages were well-known in the entire area. Many researches have been carried out in the South Gujarat like (Kokni et al. 2016), (D’Cruz 2002), (Shah GL 1978), (Navaroja RD and Kanchana M 2012), (Kumar et al., 2002), (Kumar et al., 2004), (Santapau H 1954) etc.

Materials and methods

After choosing the topic for the project, a number of books on ethnobotany were referred so as to give some basic idea as to how the project was to be carried out. Information was obtained about: What is Ethno-botany, methods of research, how to do field work and what kind of information should be collected. The structure of the project work was then drawn up. One task was to identify various ‘Bhagats’ through different contacts. Before meeting them a set of questions had to be drawn up.

The questions were as follows:

1. Name and Village of the Bhagat.
2. The local name of the medicinal plants.
3. The diseases for which the plants are used.
4. Which part of the plant is used?
5. Preparation of ethno medicine.

Dang district of South Gujarat was chosen as the study area which was then regularly visited every month for 10 days. The questions were asked and a lot of data was collected along with some of the available plants. The discussions with the bhagats were completely done in the local language or in their own languages. Details were written in the Kokni language and then translated into Gujarati and then into English. 10 Bhagats were interviewed.
Results and Discussion

Table 1: List of Ethno-medicinal plants with family, common name, useful part and disease used.

| No. | Scientific Name                  | Family   | Common Name     | Useful Parts | Disease            |
|-----|---------------------------------|----------|-----------------|--------------|--------------------|
| 1   | *Panicum montanum* **Roxb.**    | Poaceae  | Tokarband       | Roots        | Stomach pain       |
| 2   | *Acacia catechuoides* **Roxb.** Benth. | Mimosaceae | Khair           | Bark         | Wounds             |
| 3   | *Millettia racemosa* **Roxb.** Benth. | Fabaceae | Vela bivla      | Whole Plant  | Kidney stone       |
| 4   | *Calotropis procera* **(Ait.) R.Br.** | Asclepiadaceae | Rui             | Roots        | Malaria            |
| 5   | *Grewia hirsuta* **Vahl, Symb. Bot.** | Tiliaceae | Dhamanghas      | Roots        | Acidity            |
| 6   | *Lantana camara* **Linn.**      | Verbenaceae | Sabhardudhel i  | Leaves, roots | Indigestion        |
| 7   | *Securinega obovata* **(Willd.) Almeida** | Euphorbiaceae | Pichrud        | Roots and seeds | Constipation      |
| 8   | *Urenalobata* **Linn.**         | Malvaceae | Ranbhiindi      | Seeds        | Heart problems     |
| 9   | *Punicagranatum* **L**          | Punicaceae | Dadam           | Fruits       | Increasing eye sight |
| 10  | *Clerodendrunmultiflorum* **(Burm.f .) O. Kutze.** | Verbenaceae | Arni            | Roots        | Eye problems       |
| 11  | *Ervatamiadiaricata* **(Linn.) Burkill, Rec. Bot. Surv. Ind.** | Apocynaceae | Tagri           | Leaf, Root  | Teeth problems     |
| No. | Species                      | Family       | Part(s)           | Use(s)                  |
|-----|------------------------------|--------------|-------------------|-------------------------|
| 12  | *Santalum album* Linn.       | Santalaceae  | Handan wood       | Headache, fever         |
| 13  | *Cryptostegia grandiflora* R. Br. | Periploceae  | Damvel roots      | Asthma                  |
| 14  | *Jasminum flexile* Vahl, Symb. Bot. | Oleaceae     | Chameli flowers, leaf, roots | Ulcer and vomiting |
| 15  | *Mimosa pudica* Linn.       | Mimosaceae   | Lagare root       | Scorpion bite           |
| 16  | *Withania somnifera* (Linn.) Dunal in DC. | Solanaceae  | Asoda root        | Cough                   |
| 17  | *Buchananiacochinchinensis* (Lour.) Almeida | Anacardiaceae | Charoli leaves    | Skin diseases           |
| 18  | *Musa paradisiaca* Linn.    | Musaceae     | Keli trunk sap    | Snake bite              |
| 19  | *Ricinus communis* Linn.    | Euphorbiaceae| Eranda oil        | Stomach problems        |
| 20  | *Euphorbia tirucalli*       | Euphorbiaceae| Kharsani whole plant | Acidity                |
| 21  | *Rivea hypocrateriformis* (Desv.) Choisy, Mem. Soc. Phys. Geneve | Convolvulaceae | Fangvel whole plant | Anthelmintic            |
| 22  | *Vachellia ferruginea* (DC.) Santosh Yadav & Rashmi Sharma | Mimosaceae   | Kati wood, bark   | Asthma                  |
| 23  | *Sphaeranthus indicus* Linn. | Asteraceae [Compositae] | Gorakhmundi bark | Swelling of the neck    |
| 24  | *Citrus limon* (Linn.) Burm. f. | Rutaceae     | Limbu fruit       | Digestion               |
| 25  | *Catharanthus roseus* (Linn.) G. | Apocynaceae  | Barmasi root, flowers | High blood              |
| No. | Name | Family | Part(s) | Use |
|-----|------|--------|---------|-----|
| 26  | *Cymbopogon citratus* (DC.) Stapf in Bull. | Poaceae | Lili cha | Leaf | Reliving stress |
| 27  | *Amorphophallus campanulatus* (Roxb.) Blume ex Decne | Araceae | Janglisuran | Tuber | Dysentery |
| 28  | *Holarrhena pubescens* (Buch.-Ham.) Wall. ex G. Don, Gen. Syst. | Apocynaceae | Kudi | Bark, Leaf | Dysentery |
| 29  | *Curcuma longa* L. | Zingiberaceae | Halad | Rhizome | Cough |
| 30  | *Alstonia scholaris* (Linn.) R.Br. in Mem. | Apocynaceae | Sapteparni | Bark | Snake bite |
| 31  | *Careya arborea* Roxb. | Lecythidaceae | Kumbai | Root | Small children who can’t walk |
| 32  | *Gliricidia sepium* (Jacq.) Kunth ex Walp. | Fabaceae | Nalsoti | Leaves | Jaundice |
| 33  | *Celosia argentea* Linn. | Amaranthaceae | Kurdu | Leaves | Leprosy |
| 34  | *Myristica fragrans* Houtt. | Myristicaceae | Jaifal | Fruit | Leprosy |
| 35  | *Ougenia ooejinensis* (Roxb.) Hochrest, Bull. | Fabaceae [Papilionaceae] | Taan | Whole plant | Baldness in lady |
| 36  | *Mitragyna parvifolia* Roxb. | Rubiaceae | Kalam | Bark | Kidney stone |
| 37  | *Anacardium occidentale* | Anacardiaceae | Kaju | Seed | Brain tonic |
| 38  | *Melina arborea* Roxb. | Verbenaceae | Shivan | Bark | Joints pain |
| 39  | *Bauhinia malabarica* Roxb. | Caesalpiniaceae | Sengal | Leaves | Scorpion bite |
| No. | Species Name                  | Family          | Part of Plant | Condition                        |
|-----|------------------------------|-----------------|---------------|----------------------------------|
| 40  | **Cucubita maxima** Linn.     | Cucurbitaceae   | Kolu          | Anterior part of plants          |
|     |                              |                 |               | Throat pain                      |
| 41  | **Euphorbia antiquorum** Linn. | Euphorbiaceae   | Sabar         | Whole plant                      |
|     |                              |                 |               | Asthma                           |
| 42  | Ipomea aquatic               |                 | Borgat        | Stick                            |
|     |                              |                 |               | Wounds of cattle                 |
| 43  | **Wrightia tinctoria** R.Br.  | Apocynaceae     | Kudai         | Bark                             |
|     |                              |                 |               | cattle disease                    |
| 44  | **Cocculus hirsutus**        | Menispermaceae  | Zalmani       | Roots                            |
|     |                              |                 |               | Fever                            |
| 45  | **Ziziphus mauritiana** Lamk. | Rhamnaceae      | Bor           | Bark                             |
|     |                              |                 |               | Cough                            |
| 46  | **Sterculia urens**          | Sterculiaceae   | Kuhndol       | Roots                            |
|     |                              |                 |               | Fracture                         |
| 47  | **Ocimum tenuiflorum** Linn.  | Lamiaceae       | Tulsi         | Leaves                           |
|     |                              |                 |               | Asthma                           |
| 48  | **Dioscorea bulbifera** L.    | Dioscoriaceae   | Diggi         | Whole plant                      |
|     |                              |                 |               | Skin diseases                    |
| 49  | Ipomea aquatic               | Convolvulaceae  | Nafate        | Leaves                           |
|     |                              |                 |               | Appendix                         |
| 50  | **Coriandrum sativum**       | Apiaceae        | Dhana         | Seeds                            |
|     |                              |                 |               | Leprosy                          |
| 51  | **Terminalia bellerica** Gaertn. | Combretaceae   | Behda         | Bark                             |
|     |                              |                 |               | Paralysis                        |
| 52  | **Tectona grandis** L.f.     | Verbenaceae     | Saag          | Seeds                            |
|     |                              |                 |               | Kidney stone                     |
| 53  | **Phyllanthus emblica** Linn. | Euphorbiaceae   | Avala         | Fruit                            |
|     |                              |                 |               | Gastric problem                  |
| 54  | **Eleusine coracana** (L.) Gaertn. | Poaceae     | Lagli         | Seeds                            |
|     |                              |                 |               | Diabetes                         |
| 55  | **Ailanthus excelsa** Roxb.  | Simaroubaceae   | Bhuthjhad     | Bark, Leaves                     |
|     |                              |                 |               | Stomach pain, Fever              |
| 56  | **Eucalyptus globulus** Labill. | Myrtaceae      | Nilgiri       | Bark                             |
|     |                              |                 |               | Wounds                           |
| 57  | **Careya arborea** Roxb.     | Lecythidaceae   | Kumbae        | Bark                             |
|     |                              |                 |               | Stomach pain                     |
| 58  | **Bridelia spinosa** (Roxb.) Willd. | Phyllanthaceae | Asan          | Bark                             |
|     |                              |                 |               | Stomach pain                     |
| 59  | **Garugapinnata**            |                 | Madul         | Bark                             |
|     |                              |                 |               | Joint pain and acidity           |
| 60  | **Abelmoschus manihot** (L.) Medik | Malvaceae    | Ranbhendi     | Root                             |
|     |                              |                 |               | control periodic cycle of        |
| No. | Plant Name                  | Family      | Part Used   | Disease          |
|-----|-----------------------------|-------------|-------------|------------------|
| 61  | Somedaefibrifoga            | Mimosaceae  | Bark        | Stomach pain     |
| 62  | Albiziaodoratissima(Linn.f.)| Mimosaceae  | Dhorsiris   | Wounds in cattle |
| 63  | Cassia tora Linn.           | Fabaceae    | Taruta      | scorpion bite    |
| 64  | Celosia argentea L.         | Amananthaceae| Kurdu      | Itching          |
| 65  | Woodfordiafruticosa(Linn.)  | Lythraceae  | Dhaiti      | Wounds           |
| 66  | Wrightiatinctoria R.Br.     | Apocynaceae | Dudhkudi    | diarrohea        |
| 67  | Phoenix dactylifera L.      | Palmae      | Khajuria    | Scorpion bite    |
| 68  | Erythrina variegata Linn.   | Fabaceae    | Pangara     | Cough            |
| 69  | Pongamiapinnata(L.) Pierre. | Fabaceae    | Karanj      | Wounds           |
| 70  | Pithecellobium dulce (Roxb.)| Mimosaceae  | Elichich    | Diarrohea        |
| 71  | Morindacitrifolia L.        | Rubiaceae   | Aali        | Swelling         |
| 72  | Momordica charantia Descourt. | Cucurbitaceae | Karela     | Diabetes         |
| 73  | Ficushenghalensis L.        | Moraceae    | Vad         | Tooth ache       |
| 74  | Sidacordata (Burm.f.) Boiss in Blumea, | Malvaceae | Chickne     | Birth problem    |

The total of 74 plant species was used for different diseases. The traditional healers used all plant species for different diseases. All the plant species were identified up to species level from flora of Gujarat by G.L. Shah.
Graph.1: Graph showing 6 major diseases according to the number of plants species

Among 74 plant species 6 different plant species were used for each three diseases like Stomach pain, wound in cattle’s and Body pain similarly 5 different plants species were used for each two diseases like wounds and asthma followed by these there were 4 different plant species used for each six disease. There were many diseases in which only one plant species was used as medicine like skin disease, ulcer, vomiting, jaundice, heart problems etc.

Graph.2: Graph showing 5 high number of plants parts used for various diseases
Root and Bark were used for more than 25-30 diseases. This was given as dosage by making a paste or by boiling in water etc.

**Conclusion**

The study covers 20 villages of Dang district in which 74 plant species belonging to 40 families were used for medicinal purposes by Adivasis. From the point of view of diseases [Table-1 and Graph-1], the maximum number of plants were used to treat Stomach pain, and Wounds Cattle disease. This was followed by fracture, fever, skin diseases, ulcers, vomiting, wounds, treatments for diabetes, etc. Significantly, 42 different diseases were treated by the 74 different plant species. Root and Bark was the highest part used as medicine which is mentioned in [Graph-2].

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