

ETHNO-MEDICO-BOTANY OF GODHRA FOREST DIVISION OF PANCHMAHAL DISTRICT, GUJARAT STATE

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Introduction

India is extremely rich in its floristic wealth and native plant genetic resources. Owing to its remarkable floral diversity, India is considered as one of the twelve mega diversity countries of the world. At present the country's biodiversity is represented by about 81,250 recorded animal species and about 45,000 plant species which includes more than 8,000 species with well known medicinal values, a respectable part of biodiversity comprises the species which are found only in India. Ayurvedic material medica is a rich repository of herbals and the profounders of the system subscribed to the view that there is nothing which is not medicine in the universe. By corollary, it can be said that even all plants have medicinal virtue. The Compendia of Ayurveda and other indigenous system have not provided an exhaustive list of herbals, as one comes across a number of plants not mentioned, but put to use in different parts of country by local folk. This is much more prevalent among the tribals and in the communities placed at remote places not exposed to new development in medical lore. The state of Gujarat contributes to India's biodiversity in a big way. Despite its adverse geo climatic conditions, the state has a rich diversity of plants. The rich medicinal flora of Gujarat is revealed by a number of existing documents, the presence of a sizeable strength of Ayurvedic pharmaceutical and a very wide range of ethno-botanical practices particularly in the tribal belt of the state (Singh *et al.*, 2003).

Gujarat is known to have 4320 plant species among which 2205 are angiosperms. Recent studies done by Gujarat Ecological Education and Research Foundation, Gandhinagar (Gujarat state) have documented 1315 medicinal plant species among which 1308 species are angiosperms, the medicinal flora of the state therefore has about 60 % of its known angiosperms. The remaining seven species are non angiosperm species. Among 1308 angiosperms medicinal species, 1121 species are dicots while the rest 187 species are monocots. Out of 7 non angiosperms medicinal plant species, 5 are pteridophytes and two are gymnosperms. The present study is focused on angiospermic species only.

Previously, survey for medicinal plants and their uses for the individual division were carried out

in Chhotaudepur division, Vadodara district (Tyagi *et al.*, 2007) and Baria Forest Division, Dahod district. The response of tribals in both divisions was very positive and a lot of new information about many common wild plants were documented which were not reported in earlier reports. The present survey was done as a part of the study in the project "A survey of forest food and vegetable resources" carried out in Working Plan Circle, Vadodara, Gujarat. The main object of the study is to explore the plants in the forests which are used as a food source and to identify them.

The information about plants used as a source of folk medicine, fuel, fodder and non wood forest produce was also collected during study. The purpose of the survey is to generate awareness about such plants and encourage the tribals for their conservation.

Area of study

Godhra forest division consists of 1,10,029.9 ha. of forest area which lies between parallels of latitudes, 22°14' N and 23°28' N and meridians of longitudes 73°8' E and 74°29' E, from part of Panchmahal District of Gujarat State. According to the revised classification of forest type by Champion and Seth (1968), part of the forests lying in the north-east region fall under the type 5A/c1b-Dry teak forest. Among the valuable species, teak is the predominant. In general the Eastern areas have shallow sandy soils whereas the western areas have fertile soils. To the North-East of Godhra a rich medium black soil is seen. Climate is subtropical. The temperature ranges 8°C in winter to 46°C in summer. The average annual rainfall of the area varies from 400 mm. to 800 mm. Winds are generally light in post monsoon and winter; increase in strength during summer and monsoon.

Method of study

Survey was conducted in randomly selected 19 villages in Godhra Forest Division. Informations were also gathered from local people of the villages about the medicinal uses of plants available in the forest area by using systematic questionnaire. From the survey, a list of medicinal plants and their uses is prepared. The local name of the plants may vary so we had taken a representative from the village to the

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Table 1
List of Medicinal plants identified in Godhra Forest Division with their use.

Sr. No.	Local name	Botanical name	Family	Habit	Uses as Medicine
1	2	3	4	5	6
1	Chanothi	<i>Abrus precatorius</i> L.	Papilionaceae	Climber	Leaves : Mouth ulcer
2	Kanski	<i>Abutilon indicum</i> (L.) Sw.	Malvaceae	Herb	Leaves : Boils
3	Khair	<i>Acacia catechu</i> Willd.	Mimosaceae	Tree	Leaves : Wound healing, Stop bleeding, Bark: Toothache
4	Rendhani/Rinjhadhi	<i>Acacia leucophloea</i> (Roxb.) Willd.	Mimosaceae	Tree	Root : Dysentery, Bark & Stem: Fracture
5	Kharedi	<i>Acacia</i> sp.	Mimosaceae	Tree	Root: Neck ache
6	Ardusi	<i>Adhatoda vasica</i> (L.) Nees.	Acanthaceae	Shrub	Leaves : Cough, Bark : Restlessness owing to overeating
7	Sitaphal	<i>Annona squamosa</i> L.	Annonaceae	Tree	Leaves: Over drinking of liquor Seed: Ulcer (animal)
8	Darudi	<i>Argemone mexicana</i> L.	Papaveraceae	Herb	Whole plant: Eczema
9	Limdo	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Tree	Leaves: Fever, , Cough and cold, Bark & Leaves: Stop bleeding ,Wound healing
10	Asitro	<i>Bauhinia racemosa</i> Lam.	Caesalpiniaceae	Tree	Ripe fruit: Diarrhea
11	Lajamani	<i>Biophytum sensitivum</i> (L.) Dc.	Oxalidaceae	Herb	Root : Cough
12	Simdo	<i>Bombax ceiba</i> L.	Bombacaceae	Tree	Bark :Dysentery, Root : Erysipelas
13	Kamboi	<i>Breynia retusa</i> (Dennst.) Alst.	Euphorbiaceae	Shrub	Leaves : Fracture
14	Panfuti	<i>Bryophyllum peruvianum</i> L.	Crassulaceae	Herb	Leaves: Stone
15	Khakhar	<i>Butea monosperma</i> (Lam.) Taub.	Papilionaceae	Tree	Flower: Prickly heat, Leaves: Fracture, Root : Stomachache
16	Dholo Khakhar	<i>Butea monosperma</i> var. <i>Lutea</i> (Lam.) Taub.	Papilionaceae	Tree	Bark: Women disease (Gynech)
17	Akado	<i>Calotropis procera</i> (Ait.) R. Br.	Asclepiadaceae	Shrub	Latex :Wound, Swelling, Toothache, Inflammation Leaves : Stomachache
18	Awal	<i>Cassia auriculata</i> L.	Caesalpiniaceae	Shrub	Leaves: Fracture, Wound healing, Stop bleeding, Swelling, Root: Fracture
19	Garmalo	<i>Cassia fistula</i> L.	Caesalpiniaceae	Tree	Bark :Skin diseases
20	Jangli puvad/Mali yu puvad	<i>Cassia occidentalis</i> L.	Caesalpiniaceae	Herb	Leaves : Erysipelas
21	Puvadiyu	<i>Cassia tora</i> L.	Caesalpiniaceae	Herb	Leaves : Scorpio bite, Erysipelas, Sunstroke
22	Sandhavel	<i>Cissus quadrangularis</i> L.	Vitaceae	Climber	Whole plant: Fracture
23	Bijoru	<i>Citrus medica</i> Linn.	Rutaceae	Shrub	Fruit :Asthma
24	Tindora no velo	<i>Coccinia indica</i> W. & A.	Cucurbitaceae	Climber	Leaves: Skin disorder, abscess
25	Kachara, Kothamdu	<i>Cucumis callosus</i> (Rottl.) Cogn.	Cucurbitaceae	Climber	Fruit: Restlessness owing to overeating, Leaves : stomachache
26	Amarvel/N armuli	<i>Cuscuta chinensis</i> L.	Cuscutaceae	Climber	Whole plant: Swelling
27	Hadpasu	<i>Dalbergia paniculata</i> Roxb.	Papilionaceae	Tree	Bark :Chest pain
28	Dhaturo	<i>Datura innoxia</i> Mill.	Solanaceae	Herb	Leaves: pimple, acne
29	Sandedo	<i>Delonix elata</i> (L.) Gamble	Caesalpiniaceae	Tree	Bark :Eye ache

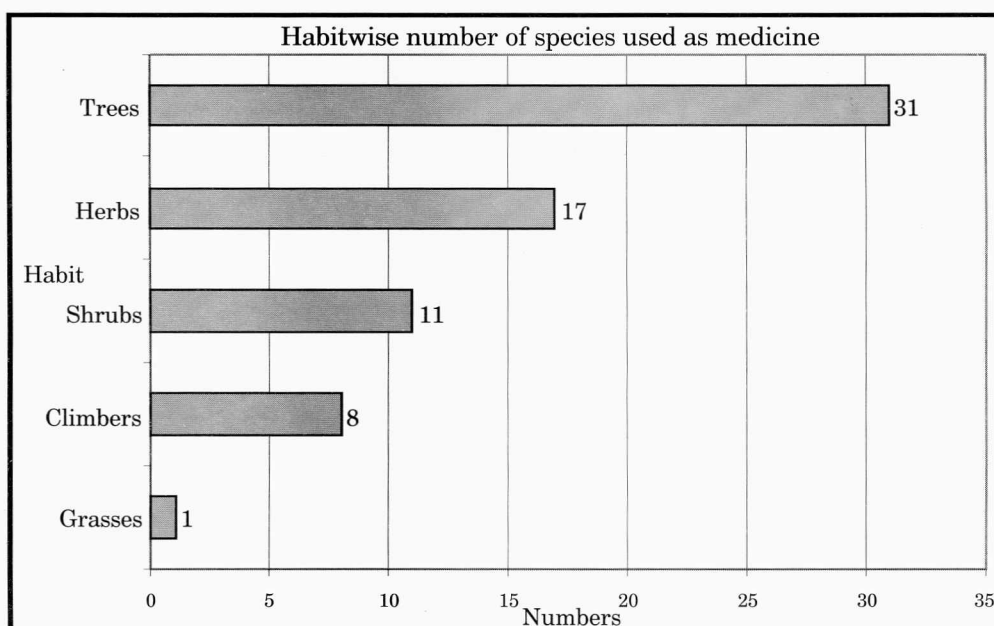
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1	2	3	4	5	6
30	Vans	<i>Dendrocalamus strictus</i> Nees	Poaceae	Tree	Bark & Stem Fracture , Stem :Wound healing , Stop bleeding
31	Dabhadu	<i>Desmostachya bipinnata</i> (L.) Stapf	Poaceae	Grass	Leaves : Scorpio bite
32	Timru	<i>Diospyros melanoxylon</i> Roxb.	Ebenaceae	Tree	Leaves & Fruit: Fracture, Bark: Eczema
33	Amla	<i>Emblica officinalis</i> Gaertn.	Euphorbiaceae	Tree	Leaves : Toothache
34	Navali	<i>Enicostema hyssopifolium</i> (Willd.) Verdoon	Gentianaceae	Herb	Leaves: Fever
35	Thor	<i>Euphorbia nivulia</i> Buch.-Ham.	Euphorbiaceae	Shrub	Latex : Wound and Stomachache, Nee ache
36	Pipal	<i>Ficus religiosa</i> L.	Moraceae	Tree	Leaves : Snakebite
37	Piper	<i>Ficus rumphii</i> Bl.	Moraceae	Tree	Bark : Boils
38	Radhaguri/ Vavadhiyu	<i>Gloriosa superba</i> L.	Liliaceae	Climber	Root : Bug infection to animal
39	Ganjeti	<i>Grewia tanax</i> (Forsk.) Fiori	Tiliaceae	Shrub	Root: Fracture
40	Dudhali no velo	<i>Hemidesmus indicus</i> (L.) Schult.	Periplocaceae	Climber	Root : Dysentery
41	Bhindi	<i>Hibiscus</i> sp.	Malvaceae	Shrub	Whole plant: Bug infection to animal
42	Kada	<i>Holarrhena antidysenterica</i> (Hyene ex Roth) Wall.	Apocynaceae	Shrub	Leaves: Fracture, Wound healing, Stop bleeding, Root: Fever, Seed: Diarrhea & Fever
43	Katasaliyo	<i>Hygrophila auriculata</i> (Schum.) Heine	Acanthaceae	Herb	Leaves: Skin diseases
44	Ratanjyot	<i>Jatropha curcas</i> L.	Euphorbiaceae	Shrub	Latex & Leaves :Wound healing, Stop bleeding, Latex & Stem: Toothache
45	Moyano	<i>Lannea coromandelica</i> (Houtt.) Herr.	Anacardiaceae	Tree	Leaves: Ear ache
46	Kadvadodi	<i>Leptadenia reticulata</i> (Retz.) W. & A.	Asclepiadaceae	Climber	Root ,Fruit & Bark : Cough and cold, Shoot : Headache & cold, Leaves: Fever
47	Kubi	<i>Leucas aspera</i> (Willd.) Spr.	Lamiaceae	Herb	Leaves: Migraine
48	Mahuda	<i>Madhuca indica</i> J. F. Gmel.	Sapotaceae	Tree	Flower :Cough, Bark latex :Achne
49	Ambo	<i>Mangifera indica</i> L.	Anacardiaceae	Tree	Bark :Dysentery, Latex : Toothache
50	Fendi	<i>Meyna laxiflora</i> Robyns	Rubiaceae	Tree	Root: Poisonous sting by animal
51	Aledi	<i>Morinda tomentosa</i> Heyne ex Roth.	Rubiaceae	Tree	Bark: Wound healing
52	Saragvo	<i>Moringa concanensis</i> Nimmo	Moringaceae	Tree	Bark : Throat tumor
53	Damaro	<i>Ocimum basilicum</i> L.	Lamiaceae	Herb	Leaves :Ear ache
54	Tulsi	<i>Ocimum sanctum</i> L.	Lamiaceae	Herb	Leaves: Fever and cold
55	Nagfen	<i>Pergularia daemia</i> (Forsk.) Chiov.	Asclepiadaceae	Herb	Leaves: Snake bite, fever
56	Divel	<i>Ricinus communis</i> L.	Euphorbiaceae	Shrub	Leaves: Stomachache
57	Bhotingadu	<i>Solanum xanthocarpum</i> Schrad.&Wendl.	Solanaceae	Herb	Fruit : Toothache
58	Zer kachula	<i>Strychnos potatorum</i> L.	Loganiaceae	Tree	Seed : Wound healing
59	Jambu	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Tree	Bark: Dysentery
60	Khati amli	<i>Tamarindus indica</i> L.	Caesalpiniaceae	Tree	Seed : Scorpio bite, Bark: Jaundice

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1	2	3	4	5	6
61	Ragat rohido	<i>Tecomella undulata</i> (Sw.) Seem.	Bignoniaceae	Tree	Bark : Internal injury, Skin diseases
62	Saag	<i>Tectona grandis</i> L. f.	Verbenaceae	Tree	Bark :Acidity, Leaves : Wound healing, Stop bleeding
63	Zeal/Zepti	<i>Tephrosia purpurea</i> (L.) Pers.	Papilionaceae	Herb	Whole plant: Bug infection to animal, Root: Dysentery and vomiting
64	Sadad	<i>Terminalia bellirica</i> (Gaerth.) Roxb.	Combrataceae	Tree	Bark : Poisonous bite
65	Thikhari	<i>Trianthema</i> <i>portulacastrum</i> L.	Aizoaceae	Herb	Root : Wound healing, Stop bleeding
66	Ganthiyu	<i>Tridax procumbens</i> L.	Asteraceae	Herb	Leaves : Wound healing, Stop bleeding
67	Bor	<i>Zizyphus mauritiana</i> Lam.	Rhamnaceae	Tree	Leaves : Conjunctivitis, Bark: Wound healing, Stop bleeding ,Tumor (on trunk): Fracture
68	Gathbor	<i>Zizyphus xylopyra</i> (Rotz.) Willd.	Rhamnaceae	Tree	Leaves : Stop bleeding

Fig. 1



forest area and plants were collected and identified with the help of floras and literature. (Gupta and Tandon, 2004; Hooker, 1872; Jain, 1991; Jain, 2004; Kirtikar and Basu, 1981; Singh *et al.*, 2003; Shah, 1978; Singh and Karthikeyan, 2000). Authors have preserved plant specimen in Herbaria in the office of Working Plan Circle, Vadodara.

Results and Discussion

In developing countries, the use of synthetic drugs is at its peak but majority of the people still rely upon traditional system of medicine for health care. Countries like India and China had their own well developed traditional system of medicines; 70% of the world population is still reported to be dependent

upon traditional system of medicines for their health care needs. This cumulative knowledge has been meticulously handed down generation through oral as well as codified traditions. In Godhra division major communities are Rathwa, Nayak, Baria, Patel, Bamaniya, Katara, Damor, Bhabhor, Pagi and Vanzara.

Although the forests of Godhra are rich in plant diversity and many important medicinal plants are there in the forest, some of these plants were commonly used in all the villages surveyed for same diseases, but there are some plants which are varied in their uses among villages. The description of some important plants with their preparation method and

dosage is given in Table 1.

Some other plant species were also used by tribals which is known by their local names as follows - Nagvel, Saagvan, Mithidodi, Vagda velo, Vaysar no velo, Nagtumdi no velo, Kandavelo/Marchivelo, Safed dungro, Khati velo, Khatamba no velo, Kamlasoti. These species could not be identified during the survey due to lack of specimen. These species may be identified in future studies. Plant species with different habit are used as medicine (Fig. 1). Plant parts like leaf, stem, roots, bark are used as medicine the details of which is given in Table 1 as well as in the description along with the ailments and procedure for usage.

The description of most commonly used plants in surveyed villages with their preparation method and dosage is given below. Some plants are used along with other plants and in some cases more than one part is used for one species.

Local name: Aankdo

Botanical name: *Calotropis procera* (Ait.) R. Br.

(1) Illness: Stomachache

Part used: Leaves

Preparation: Leaves are heated then tied up on Stomach

Dosage: Till it gets cure

(2) Illness: inflammation

Part used: Leaves

Preparation: Warm leaves with turmeric powder tied on effected area.

Dosage: Till it gets cure

Local name: Aledi

Botanical Name: *Morinda tomentosa* Heyne ex Roth.

Illness: Wound

Part used: Bark

Preparation: Bark is crushed and applied on wound.

Dosage: Till it gets cure

Local name: Amarvel / Narmuli

Botanical name: *Cuscuta chinensis* L.

Illness: Swelling

Part used: Whole plant

Preparation: Pant are crushed, boiled and applied on swelling

Dosage: Till it gets cure

Local name: Ambo and Ankado

Botanical Name: *Mangifera indica* L. and

Calotropis procera (Ait.) R. Br.

Illness: Toothache

Part used: Latex

Preparation: Latex is put on cotton and placed on affected teeth or gum.

Dosage: Till it gets cure.

Local name: Amla

Botanical Name: *Emblica officinalis* Gaertn.

Illness: Toothache

Part used: Leaves

Preparation: Leaves are crushed and juice is used as eardrops for

affected teeth or gum.

Dosage: Till it gets cure.

Local name: Ardusi

Botanical Name: *Adhatoda vasica* (L.) Nees.

Illness: Cough

Part used: Leaves

Preparation: The leaves are crushed and taken internally with water

Dosage: Once in a day, till it gets cure

Local name: Asitro

Botanical Name: *Bauhinia racemosa* Lam.

Illness: Diarrhea

Part used: Ripe fruit

Preparation: Fruit is grinded with water and juice is taken.

Dosage: Till it gets cure

Local name: Awal

Botanical Name: *Cassia auriculata* L.

Illness: Wound healing, Stop bleeding, Swelling

Part used: Leaves

Preparation: Leaves are crushed and paste is applied on wound or on swelling part of body

Dosage: Till it gets cure

Local name: Awal and Khakhar

Botanical Name: *Cassia auriculata* L. and *Butea monosperma* (Lam.) Taub.

Illness: Fracture (animal)

Part used: Leaves

Preparation: Leaves are crushed and applied on affected part

Dosage: Till it gets cure

Local name: Bhindi

Botanical name: *Hibiscus* sp.

Part used: Whole plant

Illness: Bug infection to animal

Preparation: Plant is tied on neck.

Dosage: Till it gets cure.

Local name: Bhotingdu

Botanical Name: *Solanum xanthocarpum* Schrad.&Wendl.

*Calotropis procera* (Ait.) R. Br.*Morinda tomentosa* Heyne ex Roth.*Emblica officinalis* Gaertn.*Bauhinia racemosa* Lam*Cassia auriculata* L.*Solanum xanthocarpum* Schrad. & Wendl.*Abrus precatorious* L.*Datura metel* Mill.*Butea monosperma* var. *lutea* (Lam.) Taub.*Hemidesmus indicus* (L.) Schult.*Tridax procumbens* L.*Cassia fistula* L.

*Zizyphus xylopyra* (Rotz.) Willd.*Holarrhena antidysenterica* (Hyene ex Roth) Wall.*Abutilon indicum* (L.) Sw.*Acacia catechu* Willd.*Butea monosperma* (Lam.) Taub.*Madhuca indica* J. F. Gmel.*Enicostema hyssopifolium* (Willd.) Verdoon*Tectona grandis* L. f.*Annona squamosa* L.*Euphorbia nivulia* Buch.-Ham*Diospyros melanoxylon* Roxb.*Gloriosa superba* L.

Illness: Toothache

Part used: Fruit

Preparation: Ripe fruit is applied on aching tooth

Dosage: Once in a day, till it gets cure

Local name: Bor

Botanical name: *Ziziphus mauritiana* Lam.

(1) Part used: Leaves

Illness: conjunctivitis

Preparation: Backside of leaves are taken and applied on infected area of eye.

Dosage: Till it gets cure (two to three times in a day).

(2) Part used: Tumor (on the trunk)

Illness: Fracture (animal)

Preparation: Tumor is crushed and decoction is given internally.

Dosage: Till it gets cure (Once in a day).

(3) Part used: Bark

Illness: Wound healing, Stop bleeding

Preparation: Bark is crushed and paste is applied on wound.

Dosage: Till it gets cure

Local name: Chanothi

Botanical Name: *Abrus precatorious* L.

Illness: Mouth ulcer

Part used: leaves

Preparation: Leaves are taken and chewed

Dosage: Till it gets cure

Local name: Dabhadu

Botanical Name: *Desmostachya bipinnata* (L.)

Stapf

Illness: Scorpio bite

Part used: leaves

Preparation: Leaves are crushed and paste is applied on affected area.

Dosage: Till it gets cure.

Local name: Damro

Botanical Name: *Ocimum basilicum* L.

Illness: Ear ache

Part used: Leaves

Preparation: Leaves are crushed and juice is used as eardrops.

Dosage: Till it gets cure.

Local name: Darudi

Botanical Name: *Argemone mexicana* L

Illness: Skin disease (*Kharajavu*)

Part used: Whole plant

Preparation: Whole plant and dry coconut fruit is

kept in earthen pot with little hole. When the pot is heated juice is drop out from pot which is applied on affected part.

Dosage: Till it gets cure

Local name: Dhatura

Botanical Name: *Datura metel* Mill.

Illness: pimple, acne

Part used: Leaves

Preparation: Leaves are crushed and heated, paste is applied on acne.

Dosage: Once in a day, till it gets cure

Local name: Dhodo khakhar

Botanical Name: *Butea monosperma* var. *lutea* (Lam.) Taub.

Illness: women disease (Gynech)

Part used: Bark

Preparation: Bark is grinded with water and taken with sugar as per taste during summer (High temperature).

Dosage: Till it gets cure.

Local name: Divel

Botanical name: *Ricinus communis* L.

Part used: Leaves

Illness: Stomachache

Preparation: Leaves are heated then tied up on Stomach

Dosage: Till it gets cure

Local name: Dudhali no velo

Botanical name: *Hemidesmus indicus* (L.) Schult.

Illness: Dysentery and vomiting

Part used: Whole plant

Preparation: Whole plant is crushed with water and juice is given internally.

Dosage: Till it gets cure (Half cup in the morning once in a day).

Local name: Fendi

Botanical Name: *Meyna laxiflora*

Robyns

Illness: Poisonous sting by animal

Part used: Roots

Preparation: Roots are crushed and paste is applied on bite.

Dosage: Till it gets cure.

Local name: Ganjeti or Ganjeti and Awal

Botanical name: *Grewia tanex* (Forsk.) Fiori and *Cassia auriculata* L.

Part used: Root

Illness: Fracture

Preparation: Roots are crushed and heated then

tied up on broken bones
Dosage: Till it gets cure

Local name: Ganthiyu / Kalu ganthiyu

Botanical Name: *Tridax procumbens* L.
Illness: Wound healing, Stop bleeding
Part used: Leaves
Preparation: Leaves are crushed and paste is applied on wound.
Dosage: Till it gets cure

Local name: Ganthiyu, Ratanjyot and Kada

Botanical name: *Tridax procumbens* L., *Jatropha curcas* L. and *Holarrhena antidysenterica* (Hyene ex Roth) Wall.
Illness: Wound healing, Stop bleeding
Part used: Leaves

Local name: Garmalo/Chamadiyo/Chamariyo

Botanical name: *Cassia fistula* L.
Part used: Bark
Illness: Skin diseases
Preparation: Bark is sock whole night in water. Then in the morning take that water around 250 ml given to goat.
Dosage: Till it gets cure. Only one time; in the morning

Local name: Ghatbor

Botanical Name: *Zizyphus xylopyra* (Rotz.) Willd.
Illness: bleeding
Part used: leaves
Preparation: Leaves are crushed and applied on affected area.
Dosage: Till it gets cure

Local name: Hadpasu

Botanical Name: *Dalbergia paniculata* Roxb.
Illness: Chest pain
Part used: Bark
Preparation: Bark is put in water for some time then decoction is taken internally.
Dosage: 1 tea spoon, once only
Caution: Not more than one tea spoon

Local name: Maliyu puvad/Jangli puvad

Botanical Name: *Cassia occidentalis* L.
Illness: **Ratva** (child)
Part used: Leaves
Preparation: Leaves are boiled in water and that water applied on whole body.
Dosage: Till it gets cure

Local name: Kothmadi (Kachara)

Botanical Name: *Cucumis callosus* (Rottl.) Cogn.
Illness: **Afaro** (animal) (Restlessness owing to overeating), stomachache
Part used: Fruit
Preparation: Fruit are crushed and given internally *Dal* or *Kadhi* or water.
Dosage: Till it gets cure

Local name: Kada and Awal

Botanical name: *Holarrhena antidysenterica* (Hyene ex Roth) Wall. and *Cassia auriculata* L.
Part used: Leaves
Illness: Fracture (animal)
Preparation: Leaves are crushed and heated then tied up on broken bones
Dosage: Till it gets cure

Local name: Kada

Botanical Name: *Holarrhena antidysenterica* (Hyene ex Roth) Wall.
(1) Illness: Fever
Part used: Root
Preparation: Root is boiled and decoction is given internally.
Dosage: Till it gets cure (half glass once in a day)
(2) Illness: Fever and diarrhea
Part used: Seeds
Preparation: Seeds are crushed to make pills.
Dosage: Two times a day till it gets cure

Local name: Kadva dodi

Botanical Name: *Leptadenia reticulata* (Retz.) W. & A.
(1) Illness: Cough and cold
Part used: Root or bark or Fruit
Preparation: Root or bark or fruit is crushed and paste is applied on Chest and head.
Dosage: Till it gets cure
(2) Illness: Headache and cough
Part used: Shoot
Preparation: Shoot is crushed and paste is taken internally as well as applied on head and neck.
Dosage: Till it gets cure
(3) Illness: Fever
Part used: Leaves
Preparation: Leaves are crushed and juice is given to small children.
Dosage: One tablespoon two times in a day till it gets cure

Local name: KamboiBotanical name: *Breynia retusa* (Dennst.) Alst.

Part used: Leaves

Illness: Fracture

Preparation: Leaves are crushed with water and given internally to animal.

Dosage: Till it gets cure (500 ml once in a day)

Local name KanskiBotanical Name : *Abutilon indicum* (L.) Sw.

Part used : Leaves

Illness : Boils

Preparation : Leaves are crushed and applied on boils

Dosage : Till it gets cure

Local name: KatasaliyoBotanical Name: *Hygrophila auriculata* (Schum.) Heine

Illness: Skin diseases

Part used: leaves

Preparation: Leaves are crushed and paste is applied on affected area.

Dosage: Till it gets cure

Local name: KhairBotanical Name: *Acacia catechu* Willd.

Illness: Wound healing, bleeding

Part used: Bark

Preparation: Bark is crushed and paste is applied on wound.

Dosage: Till it gets cure

Local name: KhakharBotanical Name: *Butea monosperma* (Lam.) Taub.

(1) Illness: Stomachache

Part used: Roots

Preparation: Roots are crushed with water and filtered.

Dosage: Two teaspoon juice is taken early in the morning till it gets cure.

(2) Illness: Fracture (animal)

Part used: Leaves

Preparation: Leaves are crushed and applied on affected part.

Dosage: Till it gets cure

Local name: KharediBotanical Name: *Acacia* sp.

Illness: Neck ache

Part used: Root

Preparation: Root are taken and tied on neck.

Dosage: Till it gets cure.

Local name: Khati ImliBotanical Name: *Tamarindus indica* L.

Illness: Jaundice (Piliyo)

Part used: Bark

Preparation: Bark is crushed with curd and paste is taken internally.

Dosage: Till it gets cure (two tea spoons thrice in a day)

Local name: KubiBotanical name: *Lucas asper* (Willd.) Spr.

Part used: Leaves

Illness: Migraine

Preparation: Leaves are crushed and juice is taken then little amount of salt is also mixed with juice afterward this juice is to smell opposite side of affected head.

Dosage: once in a day (only in the morning)

Local name: LajamniBotanical name: *Biophytum sensitivum* (L.) DC.

Part used: Root

Illness: Cough (Child)

Preparation: Root is chewed directly and it is also tided on neck.

Dosage: Till it gets cure

Local name: LimdoBotanical Name: *Azadirachta indica* A. Juss.

(1) Illness: fever

Part used: Leaves

Preparation: Leaves are crushed and juice is taken internally.

Dosage: Till it gets cure (one cup twice in a day)

(2) Illness: Wound healing, Stop bleeding

Part used: Bark

Preparation: Pest of bark is applied on wound

Dosage: Till it gets cure

Local name: MahudaBotanical name: *Madhuca indica* J. F. Gmel.

(1) Illness: Cough

Part used: beverage made from flowers

Preparation: beverage is applied on chest

Dosage: Till it gets cure

(2) Illness: Achne

Part used: Bark latex

Preparation: The latex of bark is applied on achne

Dosage: Till it gets cure

Local name: MoynoBotanical Name: *Lannea coromandelica* (Houtt.)

Herr.

Illness: Ear ache

Part used: Leaves

Preparation: Leaves are crushed and boiled with water, juice is used as eardrops.

Dosage: Till it gets cure.

Local name: Nagfen

Botanical Name: *Pergularia daemia* (Forsk.) Chiov

Illness: Snake bite, fever

Part used: Leaves

Preparation: Leaves are crushed, taken internally with water

Dosage: Once in a day, till it gets cure

Local name: Navali

Botanical Name: *Encostema hyssopifolium* (Willd.)

Verdoon

Illness: fever

Part used: Leaves

Preparation: Leaves are crushed and juice is taken internally.

Dosage: Till it gets cure (one tea spoon in a day (two days)

Local name: Panfuti

Botanical name: *Bryophyllum peruvianum* L.

Part used: Leaves

Illness: Stone

Preparation: One leaf chewed directly in the morning.

Dosage: Till it gets cure

Local name: Pipal

Botanical name: *Ficus religiosa* L.

Part used: Leaves

Illness: Snakebite

Preparation: Young leaves are crushed and one or two drops of juice are put in nasal.

Dosage: Till it gets cure

Local name: Piper

Botanical Name: *Ficus rumphii* Bl.

Illness: Boils (child)

Part used: Bark

Preparation: Bark is crushed and applied on affected area

Dosage: Till it gets cure

Local name: Puvadiyu / Kuvadiyu

Botanical Name: *Cassia tora* L.

(1) Illness: Scorpio bite

Part used: Leaves

Preparation: Leaves are crushed and paste is applied on bite.

Dosage: Till it gets cure

(2) Illness: Ratva

Part used: Leaves

Preparation: Leaves are crushed and paste is applied on body.

Dosage: Till it gets cure

(3) Illness: Sunstroke

Part used: Leaves

Preparation: Leaves are crushed and juice is applied on whole body and one to two drops is given to newborn baby.

Dosage: Till it gets cure

Local name: Ragat rohido

Botanical Name: *Tecomella undulata* (Sw.) Seem.

(1) Illness: Internal injury

Part used: Bark

Preparation: Bark is crushed and heated, applied on affected part and also decoction is taken internally with water

Dosage: One spoon once in a day, till it gets cure

(2) Part used: Bark

Illness: Skin diseases

Preparation: Bark is soaked whole night in water. Then in the morning take that water around 100 gm directly and also applied on the infected area.

Dosage: Till it gets cure. Only one time; in the morning (do not eat before taking this water)

Local name: Ratanjyot

Botanical Name: *Jatropha curcas* L.

(1) Illness: Wound healing, Stop bleeding

Part used: Latex

Preparation: Latex is applied on wound.

Dosage: Till it gets cure

(2) Illness: Toothache

Part used: Latex

Preparation: Latex is put on cotton and placed on affected teeth or gum.

Dosage: Till it gets cure.

Local name: Ratanjyot, Khair

Botanical name: *Jatropha curcas* L., *Holarrhena antidysenterica* (Hyene ex Roth) Wall.

Illness: Weak teeth

Part used: Young twig

Preparation: Young twig is chewed in the morning.

Dosage: Till it gets cure

Local name: Rendhani / Richchdi

Botanical name: *Acacia leucophloea* (Roxb.) Willd.

(1) Illness: Dysentery

Part used: Root

Preparation: Root is sock whole night in water. Then in the morning take that water around 100 gm directly.

Dosage: Till it gets cure. Only one time; in the morning (do not eat before taking this water)

(2) Illness: Fracture (animal)

Part used: stem and bark

Preparation: Stem and bark are crushed and applied on affected part.

Dosage: Till it gets cure

Local name: Sadad

Botanical Name: *Terminalia bellirica* (Gaerth.) Roxb.

Illness: Poisonous bite

Part used: Bark

Preparation: Bark is soaked in vessel and that water is given internally to affected person.

Dosage: Till it gets cure

Local name: Saag

Botanical name: *Tectona grandis* L. f.

(1) Part used: Bark

Illness: Acidity

Preparation: Bark is sock whole night in water. Then in the morning take that water (around 100 gm) with sugar directly.

Dosage: Till it gets cure. Only one time; in the morning (do not eat before taken this water)

(2) Illness: Wound healing, bleeding

Part used: Leaves

Preparation: Pest of leaves is applied on wound

Dosage: Till it gets cure

Local name: Sandesdo

Botanical Name: *Delonix elata* (L.) Gamble

Illness: Eye ache

Part used: Bark

Preparation: Bark is crushed and applied on eye (externally used only)

Dosage: Till it gets cure (once in a day)

Local name: Saragavo

Botanical Name: *Moringa oleifera* Nimmo

Illness: Neck tumor

Part used: Bark

Preparation: Bark is crushed and applied on tumor.

Dosage: Till it gets cure

Local name: Simdo, Ambo and Jambu

Botanical Name: *Bombax ceiba* L., *Mangifera indica* L. and *Syzygium cumini* (L.) Skeels

Illness: Dysentery

Part used: Bark

Preparation: Bark is socked in water for whole night and that water given the morning

Dosage: Till it gets cure (half cup a day (in morning))

Local name: Simlo

Botanical Name: *Bombax ceiba* L.

Illness: Erysipelas (*Ratva*)

Part used: Roots

Preparation: Roots are crushed and juice is applied on affected area and also taken internally.

Dosage: Till it gets cure.

Local name: Sitafal

Botanical name: *Annona squamosa* L.

(1) Part used: Leaves

Illness: over drinking of liquor

Preparation: Leaves are crushed and juice is taken internally.

Dosage: Till it gets cure (Two to four drops in day)

(2) Part used: Seed

Illness: Ulcer (animal)

Preparation: Seed are crushed and paste is applied on ulcer.

Dosage: Till it gets cure

Local name: Tindora no velo

Botanical Name: *Coccinia indica* W. & A.

Illness: Skin disorder, abscess

Part used: Leaves

Preparation: Leaves are crushed and paste is applied on affected part.

Dosage: Till it gets cure.

Local name: Thikhari

Botanical Name: *Trianthema portulacastrum* L.

Illness: Wound healing, bleeding

Part used: Root

Local name: Thor

Botanical name: *Euphorbia nivulia* Buch.-Ham.

(1) Illness: Wound and Stomachache

Part used: Latex

Preparation: Latex is directly applied on wound and stomach

Dosage: Till it gets cure

(2) Illness: Nee ache

Part used: Latex

Preparation: Latex is applied on nee.

Dosage: Till it gets cure

Local name: Timru

Botanical Name: *Diospyros melanoxylon* Roxb.

- (1) Illness: Skin disease Part used: Bark
Preparation: Bark is crushed and applied on affected area.
Dosage: Till it gets cure

- (2) Illness: **Fracture (Animal)**
Part used: Leaves
Preparation: Leaves is crushed and applied on affected area.
Dosage: Till it gets cure

Local name: Timru and Ghatbor

Botanical Name: *Diospyros melanoxylon* Roxb. and *Zizyphus xylopyra* (Rotz.) Willd.

Illness: Fracture (animal or human)

Part used: Ripe fruit of Timru and Leaves of Ghatbor

Preparation: Fruits and leaves are crushed and tied down with cloth on affected part.

Dosage: Till it gets cure

Local name: Tulsi

Botanical Name: *Ocimum sanctum* L.

Illness: fever and cold

Part used: Leaves

Preparation: Leaves are crushed and juice is taken internally.

Dosage: Till it gets cure (one cup twice in a day)

Local name: Vaans

Botanical Name: *Dendrocalamus strictus* Nees

- (1) Illness: Wound
Part used: Bark
Preparation: Bark is crushed and applied on wound
Dosage: Till it gets cure

- (2) Illness: Fracture
Part used: Stem
Preparation: Stem is cut in strips and tied on fracture part.
Dosage: Till it gets cure

- (3) Illness: Wound healing, bleeding
Part used: Stem

Preparation: Stem is burnt and ash is applied on wound.

Dosage: Till it gets cure

Local name: Vadhavadiyu / Radhagauri

Botanical Name: *Gloriosa superba* L.

Illness: Bug infection to animal

Part used: Root

Preparation: Root is crushed and put in to water and that water is given to animal

Dosage: Till it gets cure (twice in a day)

Local name: Zepti / Zeal

Botanical Name: *Tephrosia purpurea* (L.) Pers.

- (1) Illness: Dysentery and vomiting.

Part used: Root

Preparation: Root is crushed and paste is taken internally.

Dosage: Till it gets cure

- (2) Illness: Bug infection to animal

Part used: Whole plant

Preparation: Whole plant is crushed and applied on infected area.

Dosage: Till it gets cure

Local name: Zer kachula

Botanical Name: *Strychnos potatorum* L.

Illness: Wound healing (animal)

Part used: Seed

Preparation: Seeds are crushed and paste is applied on Wound.

Dosage: Till it gets cure

Conclusion

The overuse of whole plant, flower, fruit, and seed in certain species may endanger the very survival of the species in near future. It may be more severe in those species whose occurrence is already low and the demand in the area is high. Special efforts are required to develop safe harvesting practices. Simultaneously, the species has to be brought outside for commercial cultivation so as to reduce pressure on the species in its habitat of occurrence and its development.

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SUMMARY

Survey was conducted in randomly selected 19 villages in Godhra Forest Division. Informations were gathered from the local people of the villages about the medicinal uses of plants available in the forest area by using systematic questionnaire. The forests of Godhra are rich in plant diversity and many important medicinal plants are there in the forest. 68 identified plant species were reported to be used to treat an array of ailments by tribals of the division. Some of these plants are commonly used in all the surveyed villages for same diseases, but there are some plants which are varied in

their uses among villages. The medicinal plants commonly used by tribal are *Cassia auriculata*, *Cassia occidentalis*, *Holarrhena antidysenterica*, *Tecomella undulata*, *Tridax procumbens*, etc.

Keywords: Ethno-medico-botany, Godhra Forest Division, medicinal plants, *Cassia auriculata*, *Cassia occidentalis*, *Holarrhena antidysenterica*, *Tecomella undulata*, *Tridax procumbens*.

जिला पंचमहल, गुजरात राज्य के गोधरा वन मण्डल का जातीय औषध वनस्पति शास्त्र

जी. यादव्या, बिन्दिया ओझा व पारुल जोशी

सारांश

गोधरा वनमण्डल के यादृच्छया चुने गए 19 गांवों का सर्वेक्षण कार्य संचालित किया गया। विधिवत् बनाई प्रश्नावली उपयोग में ला वन क्षेत्र में मिलने वाले पेड़ पौधों के चिकित्सा उपयोगों की जानकारी स्थानीय गांव वालों से पूछ-पूछकर इकट्ठी की गई। गोधरा के वन पादप विविधता में सम्पन्न हैं और बहुत से महत्वपूर्ण औषधीय पादप उनमें पाए जाते हैं। यहां 68 ऐसी पादप जातियों को पहचाना गया जिन्हें इस मण्डल के आदिवासियों द्वारा भिन्न-भिन्न रोगों का उपचार करने के लिए उपयोग में लाया बताया गया है। इनमें से कुछ पादप ऐसे हैं जिन्हें आमतौर से सभी सर्वेक्षित गांवों में उसी रोग के उपचारार्थ उपयोग में लाया जाता है, किन्तु कुछ पादप ऐसे भी हैं जिन्हें इन गांवों में अलग-अलग बीमारियों में उपयोग किया जाता है। आदिवासियों द्वारा आमतौर से व्यवहृत पादप *कैसिया ओरिकुलाटा*, *कैसिया ऑक्सिडेलेसिस*, *होलारहेना अण्टिडायसेंट्रिका*, *टेकोमेल्ला अनड्युलाटा*, *ट्राइडेक्स प्रोकम्बेस* आदि हैं।

References

- Champion, H. G. and S. K. Seth (1968). *A revised survey of Forest types of India*. Government of India, Press, New Delhi.
- Gupta, A. K. and N. Tandon (2004). *Indian Medicinal Plants*, Vol. I-II, Indian Council of Medical Research, New Delhi.
- Hooker, J. D. (1872). *Flora of British India*, Vol I to VII. International Book Distributors, Dehradun.
- Jain, S.K. (1991). *Dictionary of Indian Folk Medicine and Ethnobotany*, Deep Publications, New Delhi.
- Jain, S. K. A. (2004). *Manual of Ethnobotany*, 2nd Edition, Scientific Publishers (India), Jodhpur.
- Kirtikar, K. R. and B.D. Basu (1981). *Indian Medicinal Plants*, Vol. I-III, 2nd reprint; Lalit Mohan Basu, Allahabad.
- Shah, G. L. (1978). *Flora of Gujarat State*, Vol. I & II. Sardar Patel University, Vallabh Vidyanagar.
- Singh, N. P. and S. Karthikeyan (2000). *Flora of Maharashtra State*, Vol I-III, Botanical Survey of India, Culcutta.
- Singh, M. P., J. L. Srivastava, and S.N. Pandey (2003). *Indigenous Medicinal Plants, Social Forestry and Tribals*, Daya Publishing House, Delhi.
- Tyagi, S. N., P.M. Joshi, B. D. Oza and H. N. Dalal (2007). Forest Resource Survey Chhotadepur Forest Division (Vadodara District) Series VII – *Medicinal Plants and their Traditional uses*, Forest Department, Gandhinagar.