



Preliminary Study of Ethno-Medicinal Plants Used to Cure Different Diseases in Dantiwada Region, Gujarat

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ABSTRACT

Popular knowledge of plants used by humans is based on thousands of years experience. Knowledge of plant use was widespread in ancient civilizations. Until the middle of the 19th century, plants were the main therapeutic agents used by humans, and even today their role in medicine is still relevant. In India, the use of plants for medicinal treatment dates back to 5000 years. It was officially recognized that 2500 plant species have medicinal value while over 6000 plants are estimated to be explored in traditional, folk and herbal medicine. Ethno-medicinal assessments of plants to manage human disorders in the study area were considered through a survey conducted among the primitive tribal community during 2011-2014 in Dantiwada region, Gujarat. First-hand information on ethno-medicinal recipes, dosage and their mode of administration etc., was gathered from herbal practitioners of tribal healers of Dantiwada region, Gujarat. In current study, the detailed botanical name, local uses, local names, preparation and administration for diseases treated were recorded for each species. A total of 25 used plants were described by the tribal healers in their medicinal formulations. These plant species were distributed into 17 families.

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1. Introduction

The term ethnobotany was first coined by an American botanist (Harshberger, 1895). Ethnobotany is the study of the relationship between published in a professional journal, usually in the country plants and people: From "ethno"- study of people and of the scientist. Nothing was communicated or returned to "botany"- study of plants. Ethnobotany is considered the cultural group in exchange for their participation in the branch of ethnobiology. Today there is an increasing desire to unravel the role of ethnobotanical studies in trapping the centuries old traditional folk knowledge as well as in searching new plant resources of food, drug etc. (Jain, 1987; Jain, 1991). The plant-based traditional medical systems continue to provide the primary health

care to more than three-quarters of the world's populace. India harbours about 15% (3000-3500) out of 20,000 medicinal plants of the world. About 90 % of these are found growing wild in different climatic regions of the country (Singh, 1997). In India alone, three traditional systems of medicine, namely Ayurveda, Siddha and Unani are distinguished (Gadgil, 1996; Jain, 1991; Kirtikar and Basu, 1982; Nadkarni, 1927). India has a rich wealth of medicinal plants and the potential to accept the challenge to meet the global demand for them. Ayurveda, Naturopathy, Unani, Siddha and folk medicine are the major healthcare systems in Indian society, which fully depend upon natural resources (Sen et al., 2011). India is good sources of medicinal plants. It has approximately

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7500 medicinal plant species are found. Important information of medicinal plants is also given in Rig-Veda. It is one of the oldest books on medicinal plants. Medicinal Plants and its parts are good sources of medicine even today it is the backbone of pharmaceutical companies.

The present study was aimed to document some traditional medicinal plants used by the local residents belonging to people of Dantiwada region of Banaskantha district for curing the different diseases.

2. Materials and Methods

The present work was carried out to provide a comprehensive account of ethno-medicinal plants used to cure different diseases in Dantiwada region, Gujarat. During the study, an extensive field survey of the medicinal plants was done during 2013-2014.

2.1. Study Area

Dantiwada region of Banaskantha district lies between 23 35' and 24 43' North latitude and 71 0' and 73 0' East longitude. Banaskantha district is forest area. Tribal and rural people are mainly farmers, with the tribals called Koli, Deviputra, Maldhari, Adivasi, etc. The tribal and rural people have used plants with a medicinal value.

2.2. Data collection and Documentation

Extensive field trips were organized for collecting the plant species and data. The method adopted for collection of data was about medicinal uses of plants in the treatment of various diseases. A questionnaire was prepared to gather data for this purpose, the collected plant specimens were identified by using flora and others standard literature (Saxton and Sedgwick, 1918; Patel, 1971; Sutaria, 1958; Shah, 1978) and voucher specimens herbarium were deposited in the Department of Botany, SPT Arts and Science College, Godhra, Gujarat, India.

The data on medicinal plants was recorded through interview, discussion and field observation with knowledgeable elder people using standard methods adopted by Jain and Goel (Jain and Goel, 1995). The information about plants and their local names, parts of plant used for preparation of drug and mode of administration in different diseases were documented in the field survey and it was confirmed by cross checking with respondents and also with the already

existing literature, such as a local flora and information on traditional medicinal use of plants was obtained through oral interviews. The ethnobotanical data for the present investigation are collected from tribal people, including local healers, elderly persons, vaidyas and local herbal drug sellers were interviewed to get the ethnobotanical information like local names of the plants and their uses against different ailments.

3. Results

During the survey plant and plant parts are used for medicine in Dantiwada region to treat different diseases have been explored. The present communication documents 25 plants species belonging to 17 Families 24 genera that are traditionally valued. Different plants part is used in different diseases (Table 1).

The number of plant species used by the tribe for curing some of the important and common diseases, some of them stomach, sterility, skin diseases, asthma, cough, cold, rheumatics pains, urinary trouble, diabetes, sexual debility and piles. The preparation of medicine is an art and is prepared in various forms like infusion, decoction, paste, powder, pill, syrup, juice, etc. For each species listed, correct botanical names followed by family, vernacular names, mode of administration and their medicinal uses are given.

4. Discussion

The present study indicates that the primary health care of the inhabitants is taking care of local tribal communities of Dantiwada region. Ethno medicinal research can provide a wealth of information regarding both past and present relationships between plants and the traditional societies. Traditional knowledge systems of these communities have been evolved over the years through the centuries and their skills and innovations based on their experiences. Such knowledge has been flowing from one generation to another. The growing disinterest in the use of the folk medicinal plants and its significance among the younger generation of the primitive tribals will lead to the disappearance of this practice. Educated younger generation of the primitive tribals should be encouraged by the Government to protect and cultivate these valuable herbal plants before they get lost due to the impact of modernization and urbanization and also due to deforestation.

Table 1. Enumeration of plants

Sr. No.	Botanical Name	Family	Vernacular Name	Mode of Administration
001	<i>Abrus precatorius</i> L.	Fabaceae	Chanothi	The fresh root juice or leaf juice mixed with some edible oil and then is applied on painful part to relieve pain and reduce swellings of rheumatism. Paste of leaves applied on head to prevent baldness. The fresh leaves are sweet and chewed for treatment of mouth ulcers.
002	<i>Adhatoda vasica</i> Nees.	Acanthaceae	Ardusi	Five leaves are taken with honey for three days. Powder of leaves is used as a febrifuge in fever of malaria. Crushed leaves with water given internally to the female on the post-delivery treatment. Poultice of leaves externally is used for fresh wound, on rheumatic joints and inflammatory swellings in neuralgia, headache and bleeding from the nose.
003	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	Bili	The bark powder is mixed with the juice of <i>Oroxylum indicum</i> and <i>Mangifera indica</i> (leaf) and fed to the labor pain patient. Seven leaves with 5 <i>Piper nigrum</i> - seed for seven days will be effective for worms and dysentery. Ripe fruit pulp is given twice a day for 2-3 days to improve digestive disorders.
004	<i>Allium sativum</i> L.	Liliaceae	Lasan	8-10 seeds are boiled in mustard oil, the oil is applied on the affected area. Paste of bulblet is applied on eczema, ringworm, ulcers, wounds, Juice of bulb is applied in skin troubles and a used as ear drops.
005	<i>Aloe barbadense</i> Mill.	Liliaceae	Kuvarpathu	The paste obtained from the fleshy leaves is applied externally over the legs of pregnant women for coolness. One teaspoonful of leaf juice is given twice a day for three days for curing headache. Inner fleshy part of leaf is applied on wounds due to burning.
006	<i>Andrographis paniculata</i> (Burm. F.) Wall	Acanthaceae	Lilu kariyatu	Paste prepared from the fresh leaves is orally administered once or twice a day for 3 to 5 days against gastric and bile troubles. 10-15 g of leaves are crushed with 2-3 pepper, extract given daily once for three days for cure jaundice.
007	<i>Annona squamosa</i> L.	Anonaceae	Sitaphal	Fresh leaf paste is slightly warmed and applied externally for early maturation of boils. Ripe fruit is bruised and mixed with salt is applied to malignant tumours to hasten suppuration. Seed powder mixed with gram powder is used as hair wash for lice killing.
008	<i>Asparagus racemosus</i> Willd.	Liliaceae	Satavari	Paste of root is mixed with seed powder of 'jira' (<i>Cuminum cyminum</i>) and given orally with warm water to cure cold fever. Powdered of root is employed in acidity, tuberculosis, peptic ulcers and burning micturition. Dried root powder is given internally with milk to the nourishing mother for milk production hence used as galactagogue. Root juice is mixed with honey and for dyspepsia.

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009	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Limdo	Leaves juice is taken orally once or twice a day for seven days for purification of blood and intestinal worms. Leaves Juice is also applied externally on skin suffering from various skin diseases like sores, blisters and skin diseases. About 20 g of bark is boiled in 1 liter of water. Bath with the boiled water will cure skin diseases.
010	<i>Citrullus colocynthis</i> (L.) Schrad.	Cucurbitaceae	Kadva Indravarna	Pulp of fruit is applied in vagina for abortion and to increase menses. Fruits are employed in jaundice, fever, dropsy, coughs, constipation, biliousness and bronchitis. Root decoction is given in rheumatism, jaundice and urinary troubles.
011	<i>Cocculus hirsutus</i> (L.) Diels.	Menispermaceae	Vevdi	Three teaspoons of leaf juice taken daily twice for until cure.in White leucorrhoea In Malaria, two teaspoons of leaf juice administered daily twice for three days. The juice of leaves is given internally cure for gonorrhoea. Crushed leaves with water & paste are kept on eyes to relieve the effect of heat in the eyes.
012	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Dharo	Whole plant is crushed and its juice is extracted. 3-4 drops of juice applied externally on nose. Infusion of the leaves is given orally check vomiting.
013	<i>Momordica charantia</i> L.	Cucurbitaceae	Karela	Leaf juice is taken in empty stomach for diabetes daily and fruit in meal for one month. Dried fruits powder is given orally on diabetes. Fresh juice of unripe fruits is given orally in piles.
014	<i>Mucuna prurita</i> Baker.	Fabaceae	Kuvech	Powder of seeds is mixed with honey or ghee and given orally to cure asthma Crush the seeds with water and apply on tumour Seed paste is applied on scorpion sting
015	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulsi	Leaf juice with honey is give n for 3-7 days f or cough and cold. 1:1 ratio of Tulasi leaf and Neem leaf paste is very effective for diabetes.
016	<i>Phyla nodiflora</i> (L.) Green.	Verbenaceae	Ratvelio	Infusion of the plant applied externally in small boils on the body 'ratava' hence its local name is 'ratvelio'. Decoction of plant is given in bleeding piles, calculi, indigestion and to women after delivery to prevent puerperal fever.
017	<i>Sphaeranthus indicus</i> L.	Asteraceae	Gorakh mundi	Shade dried plant at flowering stage is powdered and taken orally with Deshi ghee and honey for 38 days to develop sexual power. Root powder mixed in hot <i>Sesamum indicum</i> (Tal) oil is massaged on the male sex organ for perfect erection.
018	<i>Tamarindus indica</i> L.	Caesalpinaceae	Khati Amali	Paste is prepared from seeds and applied over the bitten area. Powder of stem bark mixed with cured and given early in the morning to cure bleeding piles.

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019	<i>Terminalia arjuna</i> (Roxb.) W. and A.	Combretaceae	Arjun sadad	Bark powder of this plant is mixed with juice of <i>Adhatoda vasica</i> and <i>Helicteres isora</i> and given to the patient twice a day for seven days curing to asthma.
020	<i>Terminalia chebula</i> Retz.	Combretaceae	Harde	Infusion of dried fruits is given as a drink in early morning for three days curing indigestion. One teaspoon full of fruit powder is given internally with warm water once daily before going to bed to cure chest pain.
021	<i>Trachyspermum ammi</i> (L.) Sperague	Apiaceae	Ajmo	Ajamo (<i>Trachyspermum ammi</i>), Suwa (<i>Anethum graveolens</i>) and sundh (<i>Zingiber officinale</i>) mixed and made a powder it is given orally with ghee and sugar to increase the milk production in mammary glands of nourishing mother. Seed mixed with seed of Tal (<i>Sesamum indicum</i>) and given urinary trouble.
022	<i>Trigonella foenum-graecum</i> L.	Fabaceae	Methi	One teaspoonful of seed powder is given twice a day for one month curing to diabetes.
023	<i>Vitex negundo</i> L.	Verbenaceae	Nagod	Two fistful of leaves boiled in water and the same is used as a bath water is used in Rheumatics pains, body pains, and postnatal complaint. One-teaspoon root powder along with milk is given daily to ladies suffering from menstrual disorders and to restore fertility.
024	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Ashwagandha	Decoction of root is mixed with milk and given orally to cure for sterility in human. Paste of root is mixed with cow urine and bandaged on boil for fast ripening and skin diseases. Leaves are chewed to cure asthma.
025	<i>Zizyphus mauritiana</i> Lam.	Rhamnaceae	Bor	Fresh tender leaf 5-7, black pepper seeds 2-3 (<i>Amonum aromaticum</i>), flower i.e. tip portion of (<i>Syzygium aromaticum</i>) and honey are mixed and taken orally in empty stomach twice a day for one week.

Observations that the improved awareness of conservation issues is needed. Proper documentation of traditional knowledge about the plants could be supportive in achievement of objectives. Local cultivation of medicinal plants and other economic species can play an important role in economic development of the area.

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References

- Gadgil, M., 1996. Documenting diversity: An experiment. *Current Science*, 70: 36-44.
- Harshberger, J. W., 1895. The purposes of ethnobotany-1. *Botanical Gazette*, 21: 146-154.
- Jain, S. K., 1987. A manual of ethnobotany, Scientific Publishers, Jodhpur, India.
- Jain, S. K., 1991. Dictionary of Indian Folk Medicine and Ethnobotany, Deep Publications, New-Delhi, India.
- Jain, S. K., Goel, A. K., 1995. A manual of Ethnobotany, Scientific Publishers, Jodhpur, India.
- Kirtikar, K. R., Basu, B. D., 1982. Indian Medicinal Plants, Bishan Singh MahendraPal Singh, Dehradun, India.
- Nadkarni, K. M., 1927. Indian Material Medica, Popular Book Depot, Bombay, India.
- Patel, R. I., 1971. Forest Flora of Gujarat State, first ed. Forest Department, Baroda, India.
- Saxton, W. T., Sedgwick, L. J., 1918. Plants of Northern, Gujarat, India.
- Sen, S. A., Chakraborty, R. A., De, B. B., 2011. Challenges and opportunities in the advancement of herbal medicine: India's position and role in a global context. *Journal of Herbal medicine*, 1: 65-75.
- Shah, G. L., 1978. Flora of Gujarat, S. P. University, Vallabh Vidhyanagar, Gujarat, India.
- Singh, H. B., 1997. Alternate source for some conventional drug Plants of Indian Subcontinent, Maheswari J, K., Scientific Publishers, Jodhpur, India.
- Sutaria, R. N., 1958. A text book of systemic botany, Khadayta Book Depot, Ahmedabad, India.