International Journal of Innovative Research in Science and Engineering
Vol. No.3, Issue 01, January 2017
www.ijirse.com
ISSN (O) 2454-9665
ISSN (P) 2454-0663

DOCUMENTATION OF TRADITIONAL MEDICINAL PLANTS USED BY GARO TRIBE IN DIMORIA TRIBAL BELT OF ASSAM

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ABSTRACT

Garo Tribe in Dimoria Tribal Belt region of Assam use a wide range of medicinal and aromatic plants. Many of the plants are used by the local people for treating their ailments which are available in their locality. It requires proper identification, plantation and conservation of such plants. Therefore, an attempt has been made to study medicinal plants used by Garo tribe in the region. The survey was based on the information collected from the 20 families in selective sampling of the village with traditional tools like questionnaire and diagnostic interview with local people. Plant species were classified into different life forms, part used and for different ailments. The study involved 25 plant species belonging to 23 families of Angiosperms.

Keywords- Medicinal plants, Garo tribe, Dimoria Tribal Belt, conservation.

I. INTRODUCTION

Medicinal and Aromatic plants are important for human health. These plants based medicines are consumed in all civilizations. It is believed that the herbal medicine can give good effect to body without causing side effects to human's health. Besides, the usage of medicinal plants has been increasing as an important role that can support the economic system. The Medicinal and Aromatic plants for health are used as herbal treatments and therapies that can be new habits for culture. World Health Organisation (WHO) has defined medicinal plants as plants that contain properties or compounds that can be used for therapeutic purposes or those that synthesize metabolites to produce useful drugs.

Handa, 1998 estimated that out of about 15,000 species of higher plants in India, medicinal uses have been attributed to 1500 species. Traditional medicine have significant contribution to primary health care, and some modern drugs have been developed from them (Vedavathy, 2003). People of India and China are popular users of traditional medicines as they are considered to be safe, effective and inexpensive (Katewa *et al.*, 2004). Tribal people possess Traditional Ecological knowledge (TEK) received from their ancestors which is linked with geography, ecological and cultural factors (Gesler, 1992; Wiley, 2002). Traditional folk medicines, mainly based on plants, occupy a significant position today, especially in the developing countries, where modern health care service is limited.

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Tribal rural societies of Assam have been practising folk medicines since time immemorial (Prakash *et al.* 2008). Forests are the main biological resource areas from where reportedly 80% of the medicinal plants are collected by the rural communities of the state. Some of the important studies on the use of medicinal plants by Garo tribes were done by Alom *et al*., 2011; Singh *et al*., 2014 and Sharma *et al.*, 2104. It requires proper identification, plantation and conservation of the plants. An explorative work was done on medicinal plants use by Garo tribe in Dimoria Tribal Belt of Assam. The main aim of the study is to identify and document traditional medicinal plants used among rural Garo tribe in Dimoria Tribal Belt of Assam.

II. MATERIALS AND METHODS

2.1 Study area

The Dimoria Tribal Development Block is situated in the south eastern part of the Kamrup district of Assam and on the south bank of the river Brahmaputra. It is bounded by Meghalaya on the south, by Morigaon district on the North East, and by greater Guwahati city on the West upto Jorabat Amerigog. The block consists of twelve gaon panchayats, viz. Kamarkuchi, Barkhat, Baruabari, Sonapur, Digaru, Nartap, Tetelia, Hahara, Khetri, Maloibari, Dhupguri and Topatali with a total number of 144 villages. The Dimoria Developmental Block occupies an area of 26164 ha. with a population of 176987 (according to 2011 census). The present boundary of Dimoria lies between $26^0$0’ N and $26^0$14’0” N latitudes, and $91^0$51’0” E and $92^0$10’0” E longitudes. The climate of this region is extensively and heavily influenced by the monsoon climate. The area falls under sub-tropical monsoon climate. The average annual temperature is 27^0C and the average annual rainfall is about 200 cm. So, rainfall is abundant and widespread. Forest type of Dimoria block are semi evergreen and mixed deciduous with the presence of occasional sub- tropical broad- leafed forest. The geographical area of the Dimoria T.D Block is 261.64km2 of which, which an area of 16.58 km2 is under forest. The forests are very rich in timber and other forest products. Of these the Sal (*Shorea robusta*) and Gomari (*Gmelina arborea*) are worth mentioning. Other principal trees are Nahar (*Mesua ferrea*), Poma (*Cedrela toona),* Simalu (*Bombax malabaricum*), etc.

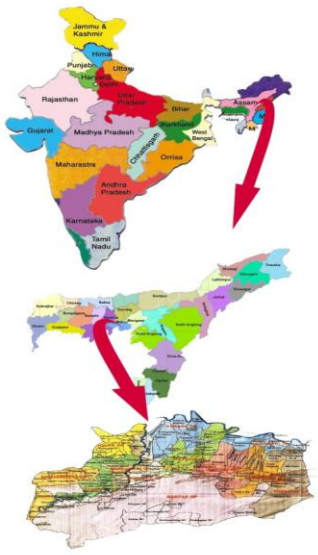

Figure 1: Location of Dimoria Development Block

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www.ijirse.com
ISSN (O) 2454-9665
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Figure 2: Google Earth Map of the studied area

2.1 Methodology

The survey was undertaken through semi-structured questionnaire and diagnostic interview with local people during July 2015 for generating the required information on the available medicinal plants. Senabor village was selected based on the concentration of Garo tribe. The survey was based on the information collected from the 20 families in selective sampling of the village.

III. RESULTS AND DISCUSSION

The documentation of medicinal plants used by Garo tribe in Dimoria Tribal Belt of Assam covers some of the important medicinal plants with regard to their use which is shown in the table below:

Table-1: Medicinal plant species used by the Garo tribe in Dimoria Tribal Belt of Assam

S. No.	Name of plant species and Family	Vernacular name	Part used	Application
1.	*Andrographis paniculata* L. (Acanthaceae)	Chirota	Whole Plant (Root to Leaf)	50 to 100 ml of soaked water is drunk in empty stomach for some times as liver tonic and stomach inflammation.
2.	*Cinnamomum tamala* L. (Lauraceae)	Tezpat	Bark, leaves	Regular drinking of cup of tea control heart disease.
3.	*Jatropha gossypifolia* L. (Euphorbiaceae)	Vodora	Stem and Stem Latex	Latex is used in wound as ointment and stem is used for tooth brush.

ISSN (O) 2454-9665
ISSN (P) 2454-0663

S. No.	Name of plant species and Family	Vernacular name	Part used	Application
4.	*Bryophyllum pinnatum* (Lam.) Oken. (Crassulaceae)	Pate goja	Leaf	Half cup of juice is taken in empty stomach for 3-7 days for urinary disorder and stomach problem.
5.	*Curcuma domestica* L. (Zingiberaceae)	Halodhi	Rhizome	Paste is used in bone pain and also used in skin as cosmetics. Two teaspoon of fresh juice is eaten with honey in empty stomach regularly in stomach disorder.
6.	*Punica granatum* L. (Punicaceae)	Dalim	Leaf and fruit	¼ cup of leaves juice is given 2 to 3 times in a day for the treatment of dysentery.
7.	*Hibiscus fragrans* Roxb. (Malvaceae)	Rakta Jaba	Leaf, flower	Semi-permeable paste is directly applied on hair twice in a day to make hair silky and flower part is eaten for liver problem.
8.	*Amorphophallus paeoniifolius* L. (Rutaceae)	Oal Kasu	Tubers, leaf	It is taken as curry, tubers as well as leaves for the body pain.
9.	*Murraya koenigii* (L.) Spreng (Rutaceae)	Narasingha	Leaf, plant, stem	10 grams leaves juice is well mixed with drinking water and drink daily 5-7 days for Stomach pain and for digestive problems.
10.	*Scoparia dulcis* L. (Plantaginaceae)	Ban dhaniya	Leaf	Leaves paste or juice is taken daily early in the morning in empty stomach for digestive problem.
11.	*Moringa oleifera* L. (Moringaceae)	Sajina	Leaf with soft stem, roots, fruit, flower, seeds	Fruit, flower and leaves are taken daily twice as curry for joint pain, high blood pressure and digestive problem.
12.	*Ayapana triplinervis* L. (Asteraceae)	Bishalyakarani	Leaf	Boiled water is used to wash the particular organ for joint pain during a week.
13.	*Psidium guajava* L. (Myrtaceae)	Madhuriaam	Newly opening Leaf	Two teaspoon leaves juice is eaten 2 to 3 times in a day for the treatment of blood dysentery.

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ISSN (P) 2454-0663

S. No.	Name of plant species and Family	Vernacular name	Part used	Application
14.	*Mentha arvensis* L. (Lamiaceae)	Padina	Stem, leaf	Two teaspoon of juice is mixed with honey and taken for flatulence, and for digestion of food.
15.	*Carica papaya* L. (Caricaceae)	Amita	Unripe or ripe Fruits	Juice is eaten daily early in the morning in the empty Stomach for digestive and liver problem.
16.	*Averrhoa carambola* L. (Oxalidaceae)	Kordoi	Fruits, bark	Fresh fruits are cut into small pieces to make curry with fish and taken for high blood pressure, and for digestive tonic, eye-cleaner and fever.
17.	*Houttuynia cordata* L. (Saururaceae)	Masunduri	Whole Plant	200-250 grams juice is taken for amoebic dysentery, especially after child birth.
18.	*Dioscorea alata* L. (Dioscoriaceae)	Kath Alu	Tubers	Tubers are taken daily for gonorrhoea, fever, anti-fungal properties.
19.	*Dioscorea bulbifera* L. (Dioscoriaceae)	Gach Alu	Tubers	First time tuber is boiled with water in a certain temperature and ready to make as curry for in leprosy, piles and gonorrhoea.
20.	*Tamarindus indica* L. (Fabaceae)	Tetali	Fruits, leaf, seed, flowers.	It is used to make curry with fish for high blood pressure and for stomach disorder, skin cleaner and yellow fever.
21.	*Piper nigrum* L. (Piperaceae)	Jaluk	Seed	Mouth air is blowed in eye in eye infection for three times.
22.	*Ocimum tenuiflorum* L. (Lamiaceae)	Kola Tulashi	Whole Plant	Two teaspoon of mixing juice is eaten three times in a day for the treatment of cough. Juice is used in nose for the treatment of nose bleeding.
23.	*Melia azedarach* L. (Meliaceae)	Ghora neem.	Leaf	Use daily before bathing (paste) or at the time of bathing.
24.	*Dillenia indica* L. (Dilleniaceae)	Outenga	Fruit	Jelly is used for hair shampoo as Cosmetics.
25.	*Cucurbita pepo* L.	Komora	Seed, Fruit, Leaves	Seed paste is added with Amla juice

ISSN (O) 2454-9665
ISSN (P) 2454-0663

S. No.	Name of plant species and Family	Vernacular name	Part used	Application
	(Cucurbitaceae)			and taken directly early in the morning in empty stomach for 7-15 days regularly for the Gastric problem.

The study involved 25 plant species belonging to 23 families of angiosperms. Trees are the main sources of medicines followed by herbs, climbers and shrubs (figure-3). The study showed that almost all plant parts are used as medicine. The most used plant parts for curing diseases are leaves, barks and stems followed by fruits, seeds, flowers, and rhizomes (figure-4).The common mode of use are fresh juice, paste, extracts, dry powder and decoction. Maximum number of plants are used for curing ailments like stomach disease (dysentery, diarrhoea and gastric problem), followed by skin problems, body pain and gonorrhoea/piles, etc (figure5).

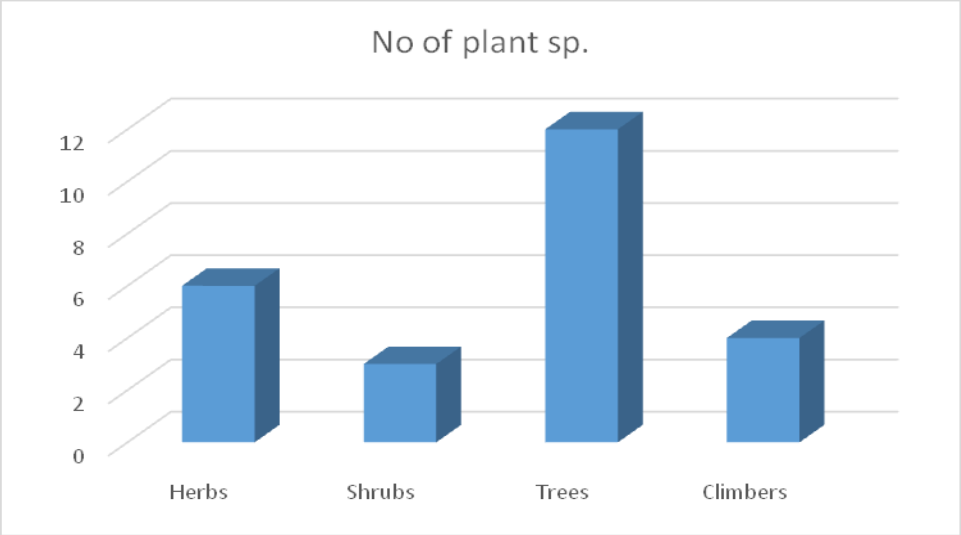

Fig 3: Bar diagram showing different life forms.

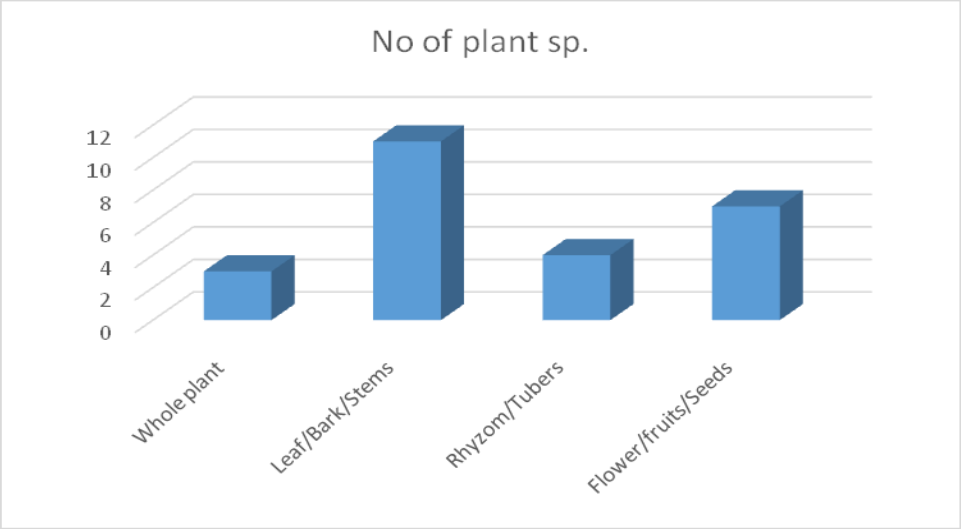

Fig 4: Bar diagram showing plants parts used for medicine.

ISSN (O) 2454-9665
ISSN (P) 2454-0663

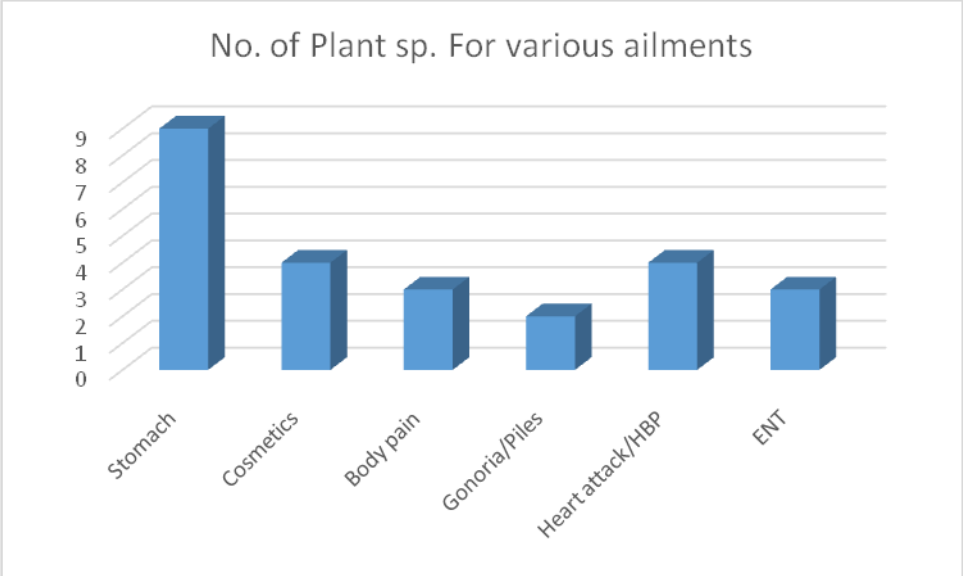

Fig 5: Bar diagram showing numbers of plant species for various ailments.

IV. CONCLUSION

Garo tribe in Dimoria Tribal Belt have good knowledge of traditional uses of plants as medicines. Such knowledge is important for conservation as well as from economic point of view. The people collect the plants from the wild for their health care needs and also for their livelihood. Further in-depth studies need to be taken up to identify and document all the medicinal plant species in the region.

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