

Herbal remedies of diabetes and high blood pressure in Thoubal District of Manipur in North East India

O. Gangarani Devi^{*}, T. Chand Singh^{*}, O. Ibeton Devi^{*}, E. J. Singh^{**}, L. Dinendra Sharma^{***}, L. Binod Singh^{****},
Kh. Ujala Devi^{*****} and A. Shyam Singh^{*****}

^{*}Institutional Biotech Hub Waikhom Mani Girls' College, Thoubal Okram-795138, Manipur, India.

^{**}Post graduate Department of Botany, D.M. College of Science, Imphal, Manipur, India

^{***}Biotech-Hub Pravabati college, Mayang Imphal, Manipur

^{****}Biotech-Hub Mayai Lambi college, Manipur

^{*****}Biotech-Hub Presidency college, Senapati, Manipur

E-mail address of the corresponding author: ogd_9@yahoo.com

Abstract- The ethnic communities of Thoubal district in Manipur uses various plants for treating various diseases that are inherited from the forefathers through oral folklores. An attempt has been made to document the precious traditional knowledge about 69 plant species in treating diabetes and high blood pressure by different ethnic communities in the district.

Key words: ethnic communities, traditional knowledge, diabetes

INTRODUCTION- Thoubal district of Manipur in the North East India occupies the south eastern part of Manipur valley which is enclosed by Manipur Eastern and Western hills forming a large interment basin, presenting a flatland topography which has been formed by the alluvial deposits. It lies between 23°45'N and 24°45'N Latitudes and 93°45'E and 94°15'E Longitudes. Manipur offers immense scope for ethno-botanical studies since it is inhabited by numerous aboriginal tribes and regions happens to be the part of Indo-Burma Hot-spots of diversity. It possesses rich diversity of flora and a large number of economic and medicinal plants which forms an integral part of the culture of the ethnic communities [10].

In recent few years, there has been exponential growth of interest in the treatment against different diseases using herbal drugs as they are generally non-toxic and World Health Organization (WHO) has recommended the evaluation of effectiveness of plants in condition where we lack modern safe modern drugs [2]. According to a WHO estimate, more than 80% of the world's population relies on traditional medicinal practices for primary healthcare needs [9]. Over 75% of the world's population is depending on local health practitioners and traditional medicines for their primary needs. Traditional ethno-medicinal studies have in recent years received much attention due to their wide local acceptability and clues for new or lesser-known medicinal plants [14].

Medicinal plants have also been reported to be useful in diabetic worldwide and used empirically as antidiabetic and hyperlipidemic remedies [11, 13]. Diabetes mellitus is the most common metabolic disorder in the endocrine disorder. The rapidly increasing incidence of diabetes mellitus is becoming a serious threat to mankind's health in all parts of the world. World Health Organization(WHO) reported that diabetes mellitus is fast becoming pandemic [16] and estimated that about 30 million people suffered from diabetic in 1985 and number increased to more than 171 millions in 2000. It is estimated that the number will increase to over 366 millions in 2030 and that large increase will occur in countries like India, China and United States of America, especially in people aged between 45 to 64 years [4, 5, 16]. Moreover, the management of diabetes is a global problem until now and successful treatment is not yet discovered. There are many synthetic medicines has been developed for patients. However, the traditional medicines have demonstrated a bright future in therapy of diabetes and to understand the importance of traditional herbs.

Hypertension is one of the major causes of disability and death all over the world. Hypertension causes heart attacks, strokes, kidney failures and other disorder if it is neglected and remains untreated. In many cases, hypertension does not cause any symptoms until it causes complications such as heart attack and stroke and plays a role of silent killer in the body. So it is important to realize that you may have high blood pressure and only way to find it out that get your blood pressure checked at regular intervals.

In such a way, the present work was carried out to explore the medicinal remedies of some medicinal plants used by the Manipurians for the treatment of diabetes and high blood pressure. The present study was performed with the aim of producing an inventory of the plants used by the traditional healers in Manipur to treat diabetes and high blood pressure.

MATERIALS AND METHOD- Ethno-medicinal information practiced by the different ethnic communities of the district was collected through field visits in the areas inhabited by different ethnic communities [7]. The collected plant material used ethno-medicinally by the ethnic communities were identified [3, 6, 8, 12]. After identification, the correct nomenclature were given to the specimens and kept in the herbarium centre of Biotech-Hub of Waikhom Mani Girls' college, Thoubal Okram, Manipur.

Table 1: Plants used for the treatments of Diabetes

Sl. No.	Botanical/Scientific name	Family	Local name	Habit of plant	Parts used
1.	<i>Mangifera indica</i> L.	Anacardiaceae	Heinou	Tree	Fruit
2.	<i>Cinnamomum verum</i> J. Presl	Lauraceae	Ushingsha	Tree	Bark and root
3.	<i>Artocarpus lakoocha</i> Wall.	Moraceae	Heiri-Konthong	Tree	Bark and fruit
4.	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Jam	Tree	Fruit
5.	<i>S. jambos</i> (L.) Alston	Myrtaceae	Gulamcha	Tree	Fruit, bark, leaf
6.	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	Heirikhagok	Tree	Leaf
7.	<i>Sesbania sesban</i> (L.)	Fabaceae	Chuchurangmei	Shrub	Fresh bark, seed, leaf
8.	<i>Jasminum nitidum</i> Skan	Oleaceae	Warak kundo	Shrub	Flower, leaf, root
9.		Pandanaceae		Shrub	Flower, leaf, root

10.	<i>Pandanus foetidus</i> Roxb. <i>Lantana camara</i> L.	Verbenaceae	Ketuki Nongbanlei	Shrub	Flower, fruit, stem, root
11.	<i>Catharanthus roseus</i> (L.) G. Don.	Apocynaceae	Sahib Lei	Undershrub	Tender leaf and flower
12.	<i>Elsholtzia blanda</i> Benth.	Lamiaceae	Lomba	Herb	Leaf, flower
13.	<i>Ardisia crenata</i> Sims	Myrsinaceae	U-thum	Tree	Leaf

14.	<i>Adiantum capillus-veneris</i> (L.)	Polypodiaceae	Mayur-pambi	Tree	Leaf
15.	<i>Clerodendrum viscosum</i> Vent	Verbenaceae	Kuthab-ukabi	Herb	Tender leaf
16.	<i>Fagopyrum esculantum</i> Moeuch	Polygonaceae	Wakha-yendem	Herb	Leaf
17.	<i>Euryale ferox</i> Salisb.	Nymphaeaceae	Thangjing	Aquatic rooted spiny herb	Raw fruit and young petioles
18.	<i>Oroxylon indicum</i> (Linn.) Benth. Ex Kurz	Bignoniaceae	Thounam	Herb	Bark and root
19.	<i>Allium sativum</i> Linn.	Liliaceae	Chanam	Herb	Bulb
20.	<i>Annanas comosus</i> Linn.	Bromeliaceae	Keehom	Under shrub	Whole plant

21.	<i>Passiflora edulis</i> Sims.	Passifloraceae	Sitaphal	Climber	Leaf
22.	<i>Artocarpus heterophylus</i> Lank.	Moraceae	Theibong	Tree	Leaf
23.	<i>Azadiracta indica</i> A. Juss.	Meliaceae	Neem	Tree	Leaf and seeds
24.	<i>Benincasa hispida</i> (Thunb.) Cogn.	Cucurbitaceae	Torbot	Climber	Fruit
25.	<i>Bombax ceiba</i> Linn.	Bombacaceae	Terapambee	Tree	Flower, fruit, bark
26.	<i>Butea monosperma</i> (Lam.) Taub	Fabaceae	Pang-gong	Tree	Whole plant
27.	<i>Carica papaya</i> Linn.	Caricaceae	Awathabi	Tree	Fruit
28.	<i>Cinnamomum tamala</i> Nees & Ebern	Caesalpinaceae	Tejpata	Tree	Bark, Seed
29.	<i>Citrus limon</i> Linn.	Rutaceae	Champra	Tree	Stem, Fruit
30.	<i>Cynodon dactylon</i> (Linn.) Pers.	Poaceae	Tingthou	Herb	Whole plant
31.	<i>Cyperus esculentus</i> Linn.	Cyperaceae	Kaothum	Herb	Fruit and Root

32.	<i>Cyperus rotundus</i> Linn.	Poaceae	Sembang kaothum	Herb	Root
33.	<i>Dioscorea alata</i> Linn.	Dioscoreaceae	Haa	Climber	Tuber
34.	<i>Flacourtia jangomas</i> (Lour.)	Flacourtiaceae	Heitroi	Tree	Raw fruit
35.	<i>Ficus glomerata</i> Roxb.	Moraceae	Heibong	Tree	Root
36.	<i>Ficus hispida</i> Linn.	Moraceae	Ashiheibong	Tree	Whole plant
37.	<i>Glycine max</i> Merrill.	Fabaceae	Nunghawai	Undershrub	Fruit bean
38.	<i>Imperata cylindrical</i> Linn.	Poaceae	Ee nakuppi	Grass	Rhizome
39.	<i>Ipomoea aquatica</i> Forsk.	Convolvulceae	Kolamni	Aquatic herb	Whole plant

40.	<i>Lagenaria siceraria</i> (Mol.) Standley	Cucurbitaceae	Khongdrum	Climber	Fruit, seed
41.	<i>Lysimachia ovovata</i> Z.D.H.	Primulaceae	Kengoi	Herb	Fruit
42.	<i>Momordica charantia</i> Linn.	Cucurbitaceae	Karot akhabi	Climber	Bark, seed, leaf
43.	<i>Nyctanthes arbortristis</i> Linn.	Oleaceae	Singarei	Tree	Flower
44.		Musaceae	Laphu	Herb	Leaf

45.	<i>Musa paradisiaca</i> Linn.	Oxalidaceae	Yensil	Herb	Fruit
46.	<i>Oxalis corniculata</i> Linn.	Mimosaceae	Yongchak	Tree	inflorescence
47.	<i>Parkia roxburghii</i> G. Don.	Onagraceae	Kaphoi	Tree	Seed
48.	<i>Punica granalum</i> Linn.	Anacardiaceae	Heining	Tree	Bark, seed
	<i>Spondias pinnata</i> (Linn.f.)Kurz.				
49.	<i>Zanthoxylum alatum</i> Roxb.	Rutaceae	Mukthruhi	Tree	Leaf
50.	<i>Curcuma longa</i> Linn.	Zingiberaceae	Yaingang	Rhizomatous Herb	Rhizome

Table 2: Plants used in the treatment of high blood pressure

Sl. No.	Botanical/Scientific name	Family	Local name	Habit of plant	Parts used
1.	<i>Amomum aromaticum</i> Roxb.	Zingiberaceae	Namra	Herb	Whole plant part
2.	<i>Eryngium foetidum</i> Linn.	Myrtaceae	Awaphadigom	Herb	Fruit, leaf, root
3.	<i>Kaempferia rotunda</i> (L)	Zingiberaceae	Yai thamnamanbi	Herb	Rhizome
4.	<i>Anaphalis contorta</i> (D.Don).	Asteraceae	Phunil	Herb	Seed, tender shoot
5.	<i>Clerodendrum viscosum</i> Vent	Verbenaceae	Kuthab-ukabi	Tree	Tender leaf

6.	<i>Passiflora edulis</i> Sims	Passifloraceae	Sitaphon	Climber	Leaf, fruit
7.	<i>Chenopodium ambrosoides</i> Linn.	Chenopodiaceae	Monshaobi manbi	Herb	Leaf
9.	<i>Bidens pilosa</i> Linn.	Asteraceae	Hameng sampakpi	Herb	Leaf
10.	<i>Centella asiatica</i> Linn.	Umbelliflorae	Peruk	Herb	Whole part
11.	<i>Clerodendron colebrookianum</i> Walp.	Verbanaceae	Kuthab manbi	Shrub	Leaf
12.	<i>Elsholtzia blanda</i> Benth.	Lamiaceae	Lomba	Herb	Leaf and dried Inflorescences
13.	<i>Panax quinquefolius</i> L.	Araliaceae	Ginseng	Herb	Root/Tuber
14.	<i>Musa paradisiaca</i> L.	Musaceae	Laphu	Shrub	Stem
15.	<i>Rauvolfia serpentina</i> Benth.	Apocynaceae	Sarpagandha	Herb	Root
16.	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.	Combretaceae	Arjun	Tree	Bark

17.	<i>Allium sativum</i> Linn.	Liliaceae	Chanam	Herb	Leaf
18.	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	Heirikhagok	Tree	Leaf and Fruit
19.	<i>Lantana camara</i> L.	Verbanaceae	Nongbanlei	Shrub	Leaf and plant extract

RESULTS- During the field survey, ethnobotanical information of 69 species of medicinal plants belonging to 42 families was compiled from various habitats of the study areas. Data obtained from the present investigation were given in Table 1 and Table 2. Botanical/scientific name followed by family, local name, uses of plants and their parts are reported by the local inhabitants and habitat with the information of collected areas. These plants were used either separately or in combination with some of other plants. Most of these plants are commonly available in natural sources in the state and a few are obtained from local dealers.

DISCUSSION- In the present investigation, 69 medicinal plant species used to treat diabetes and high blood pressure were reported and documented. The use of these plants to treat various illness is still needed by the communities, because of poor socio-economic conditions, the high cost and difficult to access the allopathic medicines. The majority of the reported species are wild and rare. These demands have made an urgent attention to conserve such vital resources so as to optimize their use in the primary health care system [1]. These demand an urgent attention to conserve such vital resources so as to optimize their use in the primary health care system. Now a day, conservation of traditional knowledge is greatly menaced by a lot of factors related to modernization of the region and lack of interest in traditional healers, in transferring it to next generation. This suggests that the long term plan use of herbal drugs may be advantageous over chemical drugs in alleviating some chronic diseases and complications caused by diabetes and high blood pressure, while adverse effects of these herbal are minimal [15]. Documentation of this traditional medicinal knowledge is needed for future generation. It is therefore, urgent to save the cultural heritage of the natives, by confirming the therapeutically used plants with scientific criteria.

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Authors

First Author – Author name, qualifications, associated institute (if any) and email address.

Second Author – Author name, qualifications, associated institute (if any) and email address.

Third Author – Author name, qualifications, associated institute (if any) and email address.

Correspondence Author – Author name, email address, alternate email address (if any), contact number.