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Traditional Knowledge on Medicinal Plants Use by Ethnic Communities in Douala, Cameroon

Mpondo Mpondo Emmanuel^{1,2*} and Dibong Siegfried Didier^{1,3}

¹*Department of Pharmaceutical Sciences, Faculty of Medicine and Pharmaceutical Sciences, P.O. Box 2701, University of Douala, Cameroon.*

²*Department of Biochemistry, Faculty of Science, P.O. Box 24157, University of Douala, Cameroon.*

³*Department of Botany, Faculty of Science, P.O. Box 24157, University of Douala, Cameroon.*

Case Study

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ABSTRACT

Traditional knowledge is common and important among the tribal people but much of the information is empirical at best lacking logical validation. A number of ethnic communities residing in the study area are partially or fully dependent on the forest resources to meet their requirements. Plants have traditionally been used as a source of medicine in Cameroon since early times for the control of various ailments afflicting humans and their domestic animals. However, little work has been made in the past to properly document and promote that knowledge. Today medicinal plants and the associated knowledge in the country are threatened due to deforestation, environmental degradation and acculturation. The present study analyses traditional knowledge and utilization of 94 species belonging to 84 genera under 46 families in day-to-day life of ethnic communities in Douala region, Cameroon. The diverse ethnic communities such as Bamiléké, Bassa, Béti, Haoussa, Douala, Bakoko, Bassolo, Ngumba, Dibom, Baya and Banen have a good association with plants and their potential role they use for different purposes and treatment of various ailments. The traditional knowledge on the utilization of these plants is widely accepted by the ethnic communities.

Keywords: Traditional; knowledge; Douala; medicinal plants.

1. INTRODUCTION

The use of plants as medicine is widespread throughout the world. The plant and plant products have augmented human culture since time immemorial. But few people realize that plant species are an important part of our environment (Singh, 1993). Traditional medicine practices and informations play an important role in the scientific research, particularly when the literature and fieldwork data have been properly evaluated. The documentation of traditional knowledge on the utilization of local plant resources by different ethnic groups or communities is one of the main objectives of ethnobotanical and ethnopharmacological researches (Shrestha, 1998). In general, traditional knowledge study focuses on the indigenous people. Indigenous people are the ones who were the original inhabitants of any place and live a life of their own which is of self-sufficient type with no foreign involvement. Indigenous knowledge systems are not only for the cultures from which they evolve, but also for scientists and planners striving to improve conditions in rural societies (Shengji, 1999). The rural people have developed unique indigenous knowledge related to the uses of plant resources due to constant association with the forests. This existing valuable information is needed to be documented before lost or disappeared. As there is lack of the documentation system in Cameroon, priority should be given to develop an ethnopharmacological uses and traditional knowledge of the medicinal plant species. Ethnic communities have immense knowledge which they pass on from generation to generation just through oral conservation (Rao and Shanpru, 1981; Chhetri, 1994). Traditional medicine knowledge of medicinal plants and their use by ethnic communities are not only useful for conservation of cultural traditions and biodiversity but also for community healthcare and drug development in the present and future. Herbal medicines have good values in treating many diseases including infectious diseases, hypertension, that they can save lives of many, particularly in the developing countries, is undisputable. Traditional knowledge is relatively new field of study in Cameroon, as it is in many other developing countries. He has taken his way of development, depending on local traditions. It is known that the way of administration to cure diseases using a particular plant widely differs among the indigenous people (Manandhar, 1994; Shrestha and Dhillion, 2003).

The present study, therefore aimed to investigate and document the oral heritage of traditional knowledge of the ethnic communities in Douala.

2. MATERIALS AND METHODS

2.1 Study Area

Cameroon is a multiethnic and multilingual country. There are more than ten different ethnic groups in Douala. The region of Douala lies between 03°40'-04°11' N latitude, 09°16'-09°52' E longitude ; is one of the 10 regions of Douala. The height ranges from 13 m. The city has a climate that belongs to equatorial area said Cameroonian characterized by two seasons with a long rainy season (at least 9 months), heavy rainfall (about 4000 mm per year), high temperatures (26.7°C) and stable. The average minimum temperature in Douala to 30 years (1961-1990) is 22.6°C in July and the average maximum temperature is 32.3°C in February. The relative humidity of the air remains high throughout the year and close to 100 % (Din et al., 2008). It has been found that various traditional knowledge systems are being practiced and followed by since long by the inhabitants of different areas of Douala region (Fig.1).



Fig. 1. Douala, study area (1:500.000)

2.2 Methodology

The present study was conducted during 2009 to 2010 covering different village development families of the Douala region. During the 75 household visits, traditional informations about medicinal plants were gathered through oral interviews and discussion with knowledgeable persons of the ethnic community. Interested persons are adults with at least forty over. The information gathered concerning the plants used to treat diseases. Only species for which the virtues are known were selected. Voucher specimens were collected from the field during the flowering and fruiting periods and biological type and habitat were confirmed. While noting information, every care was taken to record the local names of the plants, parts used, method of drug preparation and dosage uses. The specimens were also identified with the help of local floras. Herbarium specimens will be lodged in the Department of Pharmaceutical Sciences, University of Douala.

3. RESULTS AND DISCUSSION

3.1 Results

The results show that 75 households were surveyed and provided 521 citations of medicinal plants. The number of citations per household ranged from 1 to 28 with an average of 6.95. The 75 households are divided into 11 ethnic groups (Bamiléké, Bassa, Béti, Haoussa, Douala, Bakoko, Bassolo, Ngumba, Dibom, Baya and Banen) including the Bamiléké tribe is the most representative. The 521 citations were identified 94 species of medicinal plants distributed in 84 genera and 46 families (Table 1).

Table 1. Inventory of plants used and diseases treated

N°	Diseases	Used plants	Number of used Plants	T/H	F/R	Tribus
1	Stomach ache	<i>Carica papaya</i> L.	16	H	R	Bam, Ban, Bas
		<i>Cymbopogon citratus</i> Stapf		H	R	Bas, Ban, Bam
		<i>Theobroma cacao</i> L.		T	R	Bas
		<i>Aloe vera</i> L.		H	R	Bam
		<i>Mangifera indica</i> L.		T	R	Bam, Bet
		<i>Psidium guajava</i> L.		T	R	Bet, Bam
		<i>Citrus sinensis</i> L.		T	R	Bam
		<i>Prunus domestica</i>		T	R	Bas
		<i>Alstonia boonei</i> De Wild.		T	F	Bet, Dou
		<i>Guilbourtia tesmannii</i> (Harms) J. Léonard		T	F	Bas, Bet
		<i>Persea americana</i> Mill.		T	R	Bam, Dou
		<i>Dacryodes edulis</i> (G. Don.) H. J. Lam		T	R	Bam
		<i>Citrus limon</i> L.		T	R	Bam
		<i>Cola acuminata</i>		T	R	Bas
		<i>Alstonia congolensis</i>		T	R	Bet
		<i>Annona miricata</i> L.		T	R	Bam
2	Toothache	<i>Aloe vera</i> L.	13	H	R	Bam
		<i>Vernonia amygdalina</i> Del.		H	R	Bam
		<i>Hibiscus esculentus</i> G. Cohen		H	R	Bas
		<i>Carica papaya</i> L.		T	R	Bam
		<i>Mangifera indica</i> L.		T	R	Bas, Bam
		<i>Psidium guajava</i> L.		T	R	Hao, Bas, Bam
		<i>Cola acuminata</i> Schott.		T	F	Bet, Bas
		<i>Cymbopogon citratus</i> L.		H	R	Bet
		<i>Ziziphus ziziphus</i> (L.) Meikle		H	F	Bam, Bas
		<i>Sesamum indica</i> L.		H	R	Bam
		<i>Emilia coccinea</i> (Sims) G. Don.		H	R	Bam
		<i>Musa sapientum</i> L.		H	R	Bam
		<i>Zea mays</i> L.		H	R	Bam

Table 1 continues.....

3	Diabetes	<i>Adansonia digitata</i> L.	13	L	F	Dou		
		<i>Anacardium occidentale</i> Blanco				Bam		
		<i>Vernonia amygdalina</i> Del.				H	R	Bam, Bas
		<i>Allium cepa</i> L.				H	R	Bam, Bas
		<i>Phaseolus vulgaris</i> L.				H	R	Bam, Bass
		<i>Solanum tuberosum</i> L.				H	R	Bam
		<i>Ziziphus ziziphus</i> (L.) Meikle				H	F	Bam
		<i>Mangifera indica</i> L.				T	R	Bam
		<i>Persea americana</i> Mill.				T	R	Bas, Bam
		<i>Solanum incanum</i> L.				H	R	Bam, Dou
		<i>Zea mays</i> L.				H	R	Bam
		<i>Carica papaya</i> L.				T	R	Bam
		4				Smooth ache	<i>Aloe vera</i> L.	12
<i>Cymbopogon citratus</i> L.	H		R	Bet, Bam				
<i>Nicotiana tabacum</i> L.	H		R	Bam				
<i>Carica papaya</i> L.	T		R	Bas, Bam				
<i>Psidium guajava</i> L.	T		R	Bam, Bas, Bet				
<i>Elaeis guineensis</i> Jacq.	H		R	Dou				
<i>Persea americana</i> Mill.	T		R	Dou				
<i>Mangifera indica</i> L.	T		R	Bet, Bass, Bam, Dou, Hao				
<i>Citrus limon</i> L.	T		R	Bas				
<i>Pennisetum purpurea</i> Mill.	H		F	Bam				
<i>Mimosa pudica</i> L.	H		R	Bam				
<i>Allium sativum</i> L.	H		R	Bas				
5	Cough	<i>Acmella caulirhiza</i> Del.	11	H	F	Bam		
		<i>Zingiber officinalis</i> Rosc.				Bass, Bet, Hao, Ngu, Bas, Bak		
		<i>Coffea</i> sp.				T	R	Ngu
		<i>Citrus limon</i> L.				T	R	Bas
		<i>Ipomea batatas</i>				H	R	Bet
		<i>Cymbopogon citratus</i>				T	R	Bay
		<i>Allium cepa</i> L.				H	R	Bam

Table 1 continues.....

6	Yellow fever	<i>Musa paradisiaca</i> L.		H	R	Bam
		<i>Ananas comosus</i> L.		H	R	Bam
		<i>Cola acuminata</i> Schott		L	R	Ban
		<i>Allium sativum</i> L.		H	R	Bas
		<i>Vernonia amygdalina</i> Del.		T	R	Bas
		<i>Adansonia digitata</i>	10	T	F	Bam, Hao, Dou
		<i>Irvingia gobonensis</i> (Aubey-Lec ex O'Rorke) Mill.		T	R	Dou
		<i>Carica papaya</i> L.		T	R	Bam, Hao
		<i>Ananas comosus</i> L.		H	R	Hao
		<i>Persea americana</i> Mill.		T	R	Hao, Bas
		<i>Gossypium herbacea</i>		T	R	Hao
		<i>Mangifera indica</i> L.		T	R	Hao
		<i>Zea mays</i> L.		H	R	Bam
<i>Cocos nucifera</i> L.		L	R	Bak		
<i>Eremomastax speciosa</i> (Hochst.) Cufod.		H	R	Bam		
7	Amoebic dysentery	<i>Arachis hypogaea</i> L.		H	R	Dou, Bas
		<i>Gossypium hirsutum</i> L.		H	R	Dou
		<i>Xanthosoma sagittata</i>		H	R	Dou
		<i>Capsicum frutescens</i> L.		H	R	Bam
		<i>Adansonia digitata</i>	10	T	F	Bam, Hao
		<i>Citrus limon</i> L.		T	R	Bam
		<i>Annona miricata</i> L.		T	R	Bam
		<i>Vernonia amygdalina</i> Del.		T	R	Bam
<i>Psidium guajava</i> L.		T	R	Bam, bas		
8	Anemia	<i>Mangifera indica</i> L.		T	R	Bet, Bam
		<i>Carica papaya</i> L.	10	T	R	Bas
		<i>Daucus carota</i> Wild Carrot		H	R	Bam
		<i>Manihot esculenta</i> Crantz		H	R	Dou, Bas, Bam
		<i>Citrus grandis</i> Osbeck		T	R	Bam
		<i>Solanum lycopersicum</i>		H	R	Bam, Bas
		<i>Ipomea batatas</i>		H	R	Bam
<i>Citrus sinensis</i> L.		T	R	Hao		

Table 1 continues.....

		<i>Hibiscus sabdariffa</i> L.		H	R	Bam
		<i>Colocassia esculenta</i> (L.) Schott		H	R	Bam
		<i>Brassica oleracea</i> L.		H	R	Bam
9	Stomach ache	<i>Daucus carota</i> Wild Carrot	9	H	R	Hoa, Bet, Bas
		<i>Capsicum frutescens</i> L.		T	R	Bam
		<i>Solanum tuberosum</i> L.		H	R	Bam, Bas
		<i>Musa sapientum</i> L.		T	R	Bam
		<i>Zingiber officinalis</i> Rosc.		H	R	Bam
		<i>Elaeis guineensis</i> Jacq.		H	R	Bam
		<i>Musa paradisiaca</i> L.		H	R	Bam
		<i>Digitaria exilis</i> (Kippist) Stapf		H	R	Bam
		<i>Phoenix dactylifera</i> L.		T	F	Bam
10	Intestinal worms	<i>Carica papaya</i> L.	9	H	R	Bas, Bam, Bass
		<i>Pseudopodias microcarpa</i> (A. Rich.) Engl.		T	F	Bet
		<i>Musa paradisiaca</i> L.		H	R	Bet
		<i>Musa sapientum</i> L.		T	R	Bet
		<i>Alstonia boonei</i> De Wild.		T	R	Dou
		<i>Vernonia amygdalina</i>		T	R	Bet
		<i>Mangifera indica</i> L.		L	R	Bam, Bet
		<i>Cucurbita pepo</i> L.		H		Bam
		<i>Adansonia digitata</i> L.		T	F	Bam
11	Fever	<i>Trichoscypha ferruginea</i> (A. Rich.) A. Rich.	9	T		Bet
		<i>Annona miricata</i> L.		T	R	Bet
		<i>Spathodea campanulata</i> P. Beauv.		T		Bet
		<i>Adansonia digitata</i> L.		T		Dou
		<i>Psidium guajava</i> L.		T	R	Dou
		<i>Cymbopogon citratus</i> (D.C) Stapf		H		Bam
		<i>Musa sapientum</i> L.		T	R	Bam
		<i>Tamarindus indica</i> L.		T	R	Bam
		<i>Zea mays</i> L.		H	R	Bam
12	Diarrhea	<i>Psidium guajava</i> L.	8	T	R	Bam
		<i>Solanum incanum</i> L.		T		Hao

Table 1 continues.....

		<i>Oryza sativa</i> L.		H	R	Bam, Dou
		<i>Daucus carota</i> L.		H	R	Bam
		<i>Ocimum basilicum</i> L.		H		Bam
		<i>Mangifera indica</i> L.		T	R	Bam
		<i>Adansonia digitata</i> L.		T	F	Bam
		<i>Ricinodendron heudelotii</i>		T		Bam, Dou, Bet
13	Rheumatism	<i>Zingiber officinalis</i> Rosc.	8	H	F	Bam
		<i>Allium sativum</i> L.		H	R	Dou
		<i>Capsicum frutescens</i> L.		T	R	Bam, Dou
		<i>Mangifera indica</i> L.		T	R	Bam
		<i>Petersianthus macrocarpus</i>		T	F	Bas
		<i>Allium cepa</i> L.		H	R	Bam, Bas
		<i>Brassica oleracea</i> L.		H	R	Bam
		<i>Zea mays</i> L.		H	R	Bam
14	Filariasis	<i>Elaeis guineensis</i> Jacq.	8	T	R	Bet
		<i>Erythrophleum suaveolens</i>		T	F	Bet
		<i>Cannabis sativa</i> L.		H	R	Bet
		<i>Euphorbia hirta</i> L.		H	R	Bet
		<i>Raphia regalis</i> Becc.		H	F	Bam
		<i>Sorghum</i> sp.		H	R	Bam
		<i>Allium cepa</i> L.		H	R	Bam
		<i>Capsicum frutescens</i> L.		T	R	Bam
15	Pediculosis	<i>Voacanga africana</i> Stapf	7	T	F	Bet
		<i>Milicia escelsa</i> (Welw.) C.C. Berg		T	F	Bet
		<i>Musa paradisiaca</i> L.		H	R	Bet
		<i>Musa sapientum</i> L.		H	R	Bet
		<i>Ricinus cummunis</i> L.		H	R	Bet
		<i>Pennisetum purpurea</i> Mill.		H	R	Bet
		<i>Dioscorea</i> sp.		H	R	Bet
16	Hypertension	<i>Allium cepa</i> L.	6	H	R	Bam , Ngu
		<i>Citrus limon</i> L.		T	R	Dou
		<i>Saccharum Officinarum</i> L.		H	R	Bam
		<i>Anacardium occidentale</i> L.		T	R	Bam

Table 1 continues.....

		<i>Allium sativum</i> L.		H	R	Bam, Bas
		<i>Coffea</i> sp.		T	R	Bas
17	Hemorrhoids	<i>Vernonia amygdalina</i> Del.	6	T	R	Bam
		<i>Gnetum africanum</i> Welw.		H	R	Dou
		<i>Musa sapientum</i> L.		T	R	Bam
		<i>Ocimum basilicum</i> L.		H	R	Bak
		<i>Hibiscus esculentus</i> G. Cohen		T	R	Bam
18	Constipation	<i>Musa paradisiaca</i> L.	6	T	R	Bam
		<i>Tamarindus indica</i> L.		T	R	Bam
		<i>Citrus grandis</i> Osbeck		T	R	Bam
		<i>Aloe vera</i> L.		H	R	Bam
		<i>Ananas comosus</i> L.		H	R	Bas
		<i>Prunus domestica</i> L.		T	R	Dou
19	burns	<i>Carica papaya</i> L.	5	T	R	Bam, Bas, Bet
		<i>Musa sapientum</i> L.		H	R	Bam
		<i>Solanum tuberosum</i> L.		H	R	Dou, Bam
		<i>Arachis hypogaea</i> L.		H	R	Dou
		<i>Cola acuminata</i> Schott		T	R	Bam
20	Bronchitis	<i>Manihot esculenta</i> Crantz	5	H	R	Bam
		<i>Nicotiana tabacum</i> L.		H	R	Bas
		<i>Eucalyptus sailgna</i> Smith.		T	F	Bam
		<i>Serono repens</i> Marck		T	F	Bam
		<i>Gossypium hirsutum</i> L.		H	R	Bass
21	Sore of nerves	<i>Musa paradisiaca</i> L.	4	H	R	Bam
		<i>Allium cepa</i> L.		H	R	Bas
		<i>Zingiber officinalis</i> Rosc.		H	R	Bas
		<i>Allium sativum</i> L.		H	R	Bas, Bam
		<i>Cymbopogon citratus</i> (D.C) Stapf		H	R	Bas
22	Wounds	<i>Aloe vera</i> L.	4	H	R	Bam
		<i>Nicotiana tabacum</i> L.		H	R	Bas
		<i>Eucalyptus sailgna</i> Smith.		T	R	Bam
		<i>Manihot esculenta</i> Crantz		T	R	Bam

Table 1 continues.....

23	Infertility	<i>Diocorea</i> sp.	4	H	R	Bam
		<i>Cassia alata</i> L.		T	R	Bam
		<i>Vernonia amygdalina</i> Del.		T	R	Bam
		<i>Cassia occidentalis</i> L.		T	F	Bam
24	Cardiovascular diseases	<i>Allium cepa</i> L.	4	H	R	Bam, Hao
		<i>Carica papaya</i> L.		T	R	Bam
25	Prostate	<i>Hibiscus esculentus</i>	4	H	R	Bam
		<i>Musa paradisiaca</i> L.		T	R	Bam
		<i>Ananas comosus</i> L.		H	R	Bam, Bak
		<i>Cucumeropsis</i> sp.		H		Bam, Bet
		<i>Cucurbita pepo</i> L.		H		Bass
26	Healing	<i>Serono repens</i> Merck	4	H		Bas
		<i>Theobroma cacao</i> L.		T	R	Bas
		<i>Citrus limon</i> L.		T	R	Bam
		<i>Capsicum frutescens</i> L.		T	R	Bam
27	Herpes	<i>Pennisetum purpurea</i> Mill.	3	H	R	Bam
		<i>Cymbopogon citratus</i> (D.C) Stapf		H	R	Bam
		<i>Morus migra</i> L.		T	R	Bam
28	Muscle fatigue	<i>Cocos nucifera</i> L.	3	H	R	Bam
		<i>Cympobogon citratus</i> (D.C) Stapf		H	R	Bam, Bet, Bas
29	Headache	<i>Persea americana</i> Mill.	3	T	R	Bam
		<i>Cola acuminata</i> L.		T	R	Bam
		<i>Cymbopogon citratus</i> (D.C) Stapf		H	R	Bam
30	Typhoid	<i>Allium cepa</i> L.	3	H	R	Dou
		<i>Citrus sinensis</i> L.		T	R	Bam
		<i>Carica papaya</i> L.		T	R	Hao, bam
31	Asthma	<i>Musa sapientum</i> L.	3	H	R	Bam
		<i>Mangifera indica</i> L.		T	R	Bam
		<i>Nicotiana tabacum</i> L.		H	R	Bas
32	Poisoning	<i>Allium cepa</i> L.	3	H	R	Bas
		<i>Allium sativum</i> L.		H	R	Dou
		<i>Ageratum conozoides</i> L.		H	R	Bam

Table 1 continues.....

		<i>Cortaderia</i> sp.		H	R	Bas
		<i>Colocassia esculenta</i> (L.) Schott		H	R	Bak
33	Evil eyes	<i>Allium cepa</i> L.	3	H	R	Bak
		<i>Ricinodendron heudelotii</i> (Baill.) Pierre ex Pax		T	F	Bet
		<i>Nicotina tabacum</i> L.		H	R	Bet
34	Measles	<i>Eremomastax speciosa</i> (Hochst.) Cufod.	3	T	F	Bam
		<i>Cola acuminata</i>		T	F	Bet
		<i>Tamarinadus indica</i> L.		T	F	Bam
35	Menstrual cramps	<i>Capsicum frutescens</i> L.	3	T	R	Bam
		<i>Ocimum basilicum</i> L.		H	R	Bam
		<i>Carica papaya</i> L.		T	R	Bam
36	Whitlow	<i>Daucus carota</i> (Wild.) Carrot	3	H	R	Bam
		<i>Colocasia</i> sp.		H	R	Dou
		<i>Xanthosoma sagittata</i>		H	R	Bet
37	Cold	<i>Allium sativum</i> L.	3	H	R	Bak, Bam
		<i>Citrus limon</i> L.		T	R	Bam
		<i>Allium cepa</i> L.		H	R	Bam
38	Bleeding	<i>Hibiscus esculentus</i> G. Cohen	3	T	R	Bam, Bas
		<i>Cymbopogon citratus</i> (D.C) Stapf		H	R	Dou
		<i>Adansonia digitata</i> L.		T	F	Dou
39	Tooth decay	<i>Capsicum frutescens</i> L.	3	H	R	Bam
		<i>Piper guineensis</i> Thonn & Schum		H	R	Bam
		<i>Acacia</i> sp.		H	R	Bam
40	Hyperglycemia	<i>Oryza sativa</i> L.	3	H	R	Bam
		<i>Vernonia amygdalina</i> Del.		T	R	Bam
		<i>Cymbopogon citratus</i> (D.C) Stapf		H	R	Bam
41	Prevention against cancer	<i>Ipomea batatas</i> (L.) Lam	3	H	R	Dou
		<i>Ananas comosus</i> L.		H	R	Bam
		<i>Phaseolus vulgaris</i> L.		H	R	Bam
42	Antiseptic	<i>Ananas comosus</i> L.	3	H	R	Bas
		<i>Citrus limon</i> L.		T	R	Bam
		<i>Capsicum frutescens</i> L.		T	R	Bam

Table 1 continues.....

43	Wired	<i>Raphia regalis</i> Becc.	3	H	R	Bet
		<i>Vernonia amygdalina</i> Del.		T	R	Bas
44	Fontanelle	<i>Cannabis sativa</i> L.	3	H	R	Ban
		<i>Piper guineensis</i> Thonn & Schum		H	R	Bas
		<i>Cola acuminata</i> Schott		T	R	Bam
		<i>Ricinodendron heudelotii</i> (Guil. & Perr.) Brenan		T	F	Dou
45	Dermatitis	<i>Cassia alata</i> L.	2	T	R	Bam
		<i>Pennisetum purpurea</i> Mill.		H	R	Bet
46	Treatment of hair	<i>Adansonia digitata</i> L.	2	T	R	Bam
		<i>Persea americana</i> Mill.		T	R	Bam, Ngu
47	Vomiting	<i>Elaeis guineensis</i> Jacq.	2	H	R	Bam
		<i>Cola acuminata</i> Schott		T	R	Bam
48	Otitis	<i>Musa paradisiaca</i> L.	2	H	R	Bam
		<i>Allium cepa</i> L.		H	R	Bam
49	Skin infection	<i>Arachis hypogaea</i> L.	2	H	R	Bam
		<i>Annona miricata</i> L.		H	R	Bam
50	Erithrema rashr	<i>Allium cepa</i> L.	2	H	R	Bam
		<i>Manihot esculenta</i> Crantz		T	R	Bam
51	Cancer	<i>Cola acuminata</i> Schott	2	T	R	Bam
		<i>Ipomea batatas</i> (L.) Lam		H	R	Dou
52	Sore throat	<i>Zingibar officinalis</i> Rosc.	2	H	R	Bas
		<i>Allium cepa</i> L.		H	R	Bam
53	Rachitism	<i>Hibiscus esculentus</i> G. Cohen	2	H	R	Bam
		<i>Arachis hypogaea</i> L.		H	R	Bak, Bam
54	Inflammation	<i>Allium cepa</i> L.	2	H	R	Bas
		<i>Salvatora percica</i> L.		H	R	Bam
55	Pulmonary infection	<i>Musa paradisiaca</i> L.	2	H	R	Bas
		<i>Eucalyptus sailgna</i> Smith.		T	R	Bam
56	Abscess	<i>Annona miricata</i> L.	2	T	R	Dou
		<i>Allium cepa</i> L.		H	R	Bam
57	Tuberculosis	<i>Annona miricata</i> L.	2	T	R	Bam
		<i>Capsicum frutescens</i> L.		T	R	Bam

Table 1 continues.....

		<i>Acmella caulirhiza</i>		H	R	Bam
58	Difficult delivery	<i>Cola acuminata</i> Schott	2	T	R	Bam
		<i>Cassia occidentalis</i> L.		T	R	Bam
59	Alcohol	<i>Citrus sinensis</i> L.	2	T	R	Bam
		<i>Nicotiana tabacum</i> L.		H	R	Bam
60	Asthenia	<i>Allium sativum</i> L.	2	H	R	Dou
		<i>Allium cepa</i> L.		H	R	Bas
61	Insomnia	<i>Citrus sinensis</i> L.	2	T	R	Bam
		<i>Citrus grandis</i> Osbeck		T	R	Bam
62	Digestive troubles	<i>Zea mays</i> L.	2	H	R	Bas
		<i>Nephrolepis biserrata</i>		H	R	Dou
63	Mycoses	<i>Annona miricata</i> L.	2	T	R	Bam
		<i>Allium cepa</i> L.		H	R	Bam
64	Insect bites	<i>Cymbopogon citratus</i> (D.C) Stapf	2	H	R	Bam
		<i>Allium cepa</i> L.		H	R	Bam
65	Fatigue	<i>Allium sativum</i> L.	2	H	R	Dou
		<i>Allium cepa</i> L.		H	R	Bas
66	Poultice	<i>Psisidium guajava</i> L.	1	T	R	Bam
67	Nursing	<i>Ipomea batatas</i> (L.) Lam	1	H	R	Bam
68	Rhinitis	<i>Zingiber officinalis</i> Rosc.	1	H	F	Bam, Bet
69	Syphilis	<i>Anacardium occidentale</i> L.	1	T	F	Bam
70	Loss white	<i>Aloe vera</i> L.	1	H	R	Bam
71	Snake bites	<i>Colossia esculentus</i>	1	H	R	Bam
72		<i>Serono repens</i> Merck	1	H	R	Bam
73	Allergies	<i>Allium cepa</i> L.	1	H	R	Bam
74	Problem of intestinal transit	<i>Tricicum aestivum</i> L.	1	H	R	Bam
75	Angina	<i>Acmela caulirhiza</i>	1	H	R	Bam
76	Depression	<i>Theobroma cacao</i> L.	1	T	R	Bak
77	Cholesterol problem	<i>Allium sativum</i> L.	1	H	R	Bam, Dou
78	Antioxidant	<i>Solanum lycopersicum</i> L.	1	H	R	Bam
79	Sexual weakness	<i>Cola acuminata</i> Schott	1	T	R	Dou

Table 1 continues.....

80	Bile	<i>Zea mays</i> L.	1	H	R	Bam
81	Bilharzias	<i>Imperata cylindra</i> (L.) P. Beauv.	1	H	R	Bet
82	Blenoragia	<i>Arachis hypogaea</i> L.	1	H	R	Bam
83	Cancer	<i>Zingiber officinalis</i> Rosc.	1	H	R	Bas
84	Poultice	<i>Psidium guajava</i> L.	1	T	R	Bam
85	Cholera	<i>Musa sapientum</i> L.	1	T	R	Hao
86	Problem of blood circulation	<i>Allium cepa</i> L.	1	H	R	Bam
87	Convulsion	<i>Cortaderia</i> sp.	1	H	R	Bam
88	Stiffness	<i>Cola acuminata</i> Schott	1	T	R	Bak
89	Cramps	<i>Ocimum basilicum</i> L.	1	H	R	Bam
90	Cystitis	<i>Ipomea batatas</i> (L.) Lam	1	H	R	Dou
91	Eruption	<i>Citrus limon</i> L.	1	T	R	Bam
92	Vaginal itching	<i>Aloe vera</i> L.	1	H	R	Bam
93	Diuretic	<i>Arachis hypogaea</i> L.	1	H	R	Bam
94	Dysuria	<i>Salvadora percica</i> L.	1	T		Bak
95	Sprain	<i>Zingiber officinalis</i> Rosc.	1	H	R	Bam
96	Enuresis	<i>Mangifera indica</i> L.	1	T	R	Bay
97	Problem of clean blood	<i>Cymbopogon citratus</i> (D.C) Stapf	1	H	R	Bam
98	Sexual weakness	<i>Coffea</i> sp.	1	T	R	Bas
99	Liver problem	<i>Eremomastax speciosa</i> (Hochst.) Cufod.	1	H	R	Bam
100	Scabies	<i>Citrus limon</i> L.	1	T	R	Dib
101	Mucus problem	<i>Carica papaya</i> L.	1	T	R	Bam
102	Goiter	<i>Allium sativum</i> L.	1	H	R	Bam
103	Gout	<i>Allium sativum</i> L.	1	H	R	Dou
104	Jaundice	<i>Ananas comosus</i> L.	1	H	R	Dou
105	Immunostimulant	<i>Raphia regalis</i> Becc.	1	H	R	Bam
106	Impotence	<i>Cucumis melo</i> L.	1	H	R	Bam
107	Urinary disorder	<i>Aloe vera</i> L.	1	H	R	Bam
108	Insufficient bile	<i>Citrus grandis</i> Osbeck	1	T	R	Dou
109	Kwashiorkor	<i>Arachis hypogaea</i> L.	1	H	R	Bam
110	Leucorrhoea	<i>Dioscorea</i> sp.	1	H	R	Bas

Table 1 continues.....

111	Lithiosis	<i>Zea mays</i> L.	1	H	R	Dou
112	Sore belly button	<i>Capsicum frutescens</i> L.	1	T	R	Bam
113	Renal failure	<i>Solanum incanum</i> L.	1	H	R	Bam
114	Infectious diseases	<i>Citrus limon</i> L.	1	T	R	Bam
115	Heart pain	<i>Annona miricata</i> L.	1	T	R	Dou
116	Gingivitis	<i>Citrus sinensis</i> L.	1	T	R	Dou
117	Migraine	<i>Cortaderia</i> sp.	1	H	R	Bam
118	MST	<i>Elaeis guineensis</i> Jacq.	1	H	R	Bam
119	Myoma	<i>Annona miricata</i> L.	1	T	R	Bam
120	Nephritis	<i>Ipomea batatas</i> (L.) Lam	1	H	R	Dou
121	Obesity	<i>Ananas comosus</i> L.	1	H	R	Bam
122	Odontology	<i>Capsicum frutescens</i> L.	1	T	R	Bet
123	Œdema	<i>Ananas comosus</i> L.	1	H	R	Dou
124	Ossification	<i>Hibiscus esculentus</i> G. Cohen	1	H	R	Bas
125	Palpitation	<i>Citrus sinensis</i> L.	1	T	R	Bam
126	film	<i>Ipomea batatas</i> (L.) Lam	1	H	R	Bass
127	Pleurisy	<i>Arachis hypogaea</i> L.	1	H	R	Dou
128	Kidney infection	<i>Cymbopogon citratus</i> (D.C) Stapf	1	H	R	Bam
129	Bile secretion	<i>Allium cepa</i> L.	1	H	R	Bam
130	Sinusitis	<i>Ocimum balisicum</i> L.	1	H	R	Bam
131	Tendinitis	<i>Ananas comosus</i> L.	1	H	R	Bam
132	Skin infection	<i>Butyrospermum parkii</i> Kotschy	1	T	F	Bam
133	Blocked tubes	<i>Adansonia digitata</i> L.	1	T	F	Bam - Bas
134	Gastric disorders	<i>Aloe vera</i> L.	1	H	R	Bet
135	Insect venom	<i>Allium sativum</i> L.	1	H	R	Bam
136	Vermifuge	<i>Vernonia amygdalina</i> Del.	1	T	R	Bas
137	Vitamin C	<i>Ananas comosus</i> L.	1	H	R	Bam
138	Hemoptysia	<i>Gossipium hirsutum</i> L.	1	H	R	Bam
139	Hepatitis	<i>Carica papaya</i> L.	1	H	R	Bam
140	Shingles	<i>Prunus domestica</i> L.	1	T	R	

T: Timber; H: herb; F: Forest; R: Ruderal; Bak: Bakoko; Bam: Bamiléké; Ban: Banen; Bassa, Bas: Bass: Bassolo; Bay: Baya; Bet: Béti; Dib: Dibom; Dou: Douala; Hao: Hauossa; Ngu: Ngumba.

Two ethnic groups emerge clearly from these histograms: the major group that has cited a large number of species (>15 species) and the minor group after quoting a few species (<15). The major group includes the Bamiléké (52 species, 268 number of citations), Bassa (36, 80), Bété (37, 57), Haoussa (31, 43), Douala (27, 39) and Bakoko (15, 15) while the minor group includes Bassolo (6, 6), Ngumba (4, 5), Dibom (3, 3), Baya (3, 3) and Banen (2, 2).

Related diseases of digestive tract and kidneys are more important in all ethnic groups. The majority of medicinal plants cited by each ethnic group were herbs and ruderal plant species while leaf was the most frequently used part in the preparation of remedies.

3.2 DISCUSSION

A total of 94 plant species, belonging to 84 genera, under 46 families are used in day-to-day life of the tribal people. Several species have been recorded to have more than one use. The elder ethnic people are familiar with the plant species and their used for common ailments, and the plant remedies being used regularly. Majorities of young generation do not know many plants and their medicinal values. Only few younger are followed the medicinal practices and traditional knowledge by the elders and healers as in the case in other areas of Douala (Dibong et al., 2011a). Except some few earlier researches (Betti and Lejoij, 2000; Betti, 2002; Guedje and Fankap, 2001; Guedje, 2002; Guedje et al., 2003, 2008; Jiofack et al., 2010), these areas were unexplored ethnobotanically and ethnopharmacologically. The number of plants cited by the Bamiléké is more important because the tribe is populous. In addition, they maintaining and safeguarding of cultural and traditional values through the chiefs whose authority is established and respected in the Western Region. The consequence is that the common names of medicinal plants can be substituted by the names of the Bamiléké language without the risk of devaluation of traditional knowledge. The other major group of tribes in particular, Bassa, Bété, Douala and Bakoko benefit from their crops to enhance the development of traditional medicine. As for the Haoussa, they are few in the region although well structured chiefdoms. In addition, origin (north) is far removed from the study area, which implies relocation from their environment dominated by savannas and steppes.

The group consists of minor ethnic groups do not allow a faithful transmission of traditional knowledge and should not be considered in the emergence of traditional medicine.

The traditional knowledge of the ethnic communities in Douala town has tremendous ethnobotanical and ethnopharmacological importance. They use plants and their parts such as roots, rhizomes, tubers, leaves, stem, wood, bark, flowers, seeds, and fruits in various purposes in their daily life (Dibong et al., 2011b, 2011c, 2011d; Din et al., 2011). The high usage of herbs among the households could be an indication of their abundance as it was witnessed during visits to the study sites that areas very close to houses were well covered with herbs. The study area remains humid for most months of the year creating a favorable condition for growth of herbs. It is evident from the present study that the tribal communities are dependent on a variety of plants to meet their requirements and beliefs to cure many diseases. The different plant parts are used for medicinal preparation, mode of administration, dosage and other human consumption. In some cases, the whole plant parts are utilized only for medicinal purposes. The plant parts are generally used by the ethnic communities to cure some important diseases. The study revealed that most remedies were prepared and administered at a household level, which is in agreement to finding to other works (Dibong et al., 2011c; Din et al., 2011). When deemed necessary, people could seek

the help to knowledgeable people in their respective locality with no or nominal charge. The majority of household informants reported that they kept their medicinal plant knowledge secret. They further revealed that free transfer of knowledge could only take place along the family line, usually from parents to sons (Dibong et al., 2011c). It was found out that transfer of knowledge to people outside the family circle could only take place substantial payment. The secrecy of traditional medicinal practice is also a common phenomenon elsewhere in the country (Betti, 2002; Guedje et al., 2008; Jiofack et al., 2010).

4. CONCLUSION

This study identified 94 medicinal plants treating 140 ailments between different ethnic communities in Douala. It is necessary to conduct thorough investigations to each ethnic community to capitalize on the cultural handed down from generation to generation. Future scope of research concern also phytochemical and phytopharmaceutical screenings.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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