



Inventory of antidiabetic plants in selected districts of Lagos State, Nigeria

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ABSTRACT

This study reports an ethnobotanical survey by means of semi-structured questionnaire of medicinal plants in five districts of Lagos State of Nigeria reputed for the treatment of diabetes. 100 respondents from the predominantly Yoruba tribe mostly males (76%) were knowledgeable in traditional treatment of diabetes. About half of the respondents with 20–30 years experience in treating diabetes used mainly herbs (96%) and have developed effective and easily recognised diagnostic tools. 92% of diabetic patients were usually out-patients aged 21–60 years. Diabetes trado-specialists (80%) rarely referred their patients but usually treated referred cases (96%). Fifty multi-component herbal recipes covered in the survey were mainly liquid preparations often administered without serious side effects (92%). The principal antidiabetic plants included *Vernonia amygdalina*, *Bidens pilosa*, *Carica papaya*, *Citrus aurantiifolia*, *Ocimum gratissimum*, *Momordica charantia* and *Morinda lucida*. Dietary recommendations also accompanied therapy.

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1. Introduction

According to the 2004 estimates, the Diabetes Association of Nigeria (DAN) puts the diabetics' population in Nigeria at about 10 million and about half of this number is in Lagos State because of its very cosmopolitan nature (Ogbera et al., 2005). The WHO reported that diabetes mellitus (DM) is fast becoming pandemic (WHO, 1985). Diabetic surveys in Nigeria appear infrequently in literature in which prevalent studies have been restricted to selected communities and divergent values have been published (Suleiman et al., 2006). Ogbera et al. (2005) reported prevalence of 41.5% in Lagos State in a study conducted mainly on the elderly. In a separate study by Akinkugbe (1997), crude prevalence rate of 7.2% was reported for the Lagos mainland (one of the LGA's in the present survey) in a national non-communicable disease survey.

In view of the increasing prevalence, there is a growing need to develop integrated approaches toward the management and prevention of DM by exploring the potentials offered by the traditional phytotherapies (Marles and Farnsworth, 1996). Despite considerable progress in the management of DM by conventional drugs, the search for natural antidiabetic plant products (Marles and Farnsworth, 1996) as alternative therapy is ongoing. Consequently, a number of herbs indigenous to Nigeria (Ojewole, 2003, 2005; Osadebe et al., 2004) and other countries (Marles and Farnsworth, 1996) have been investigated for hypoglycaemic activities, and in

most cases, significant reductions in blood glucose levels in various normal and diabetic animals have been recorded.

In spite of the numerous publications on the effectiveness of traditional medicine in controlling DM, there has been no work done to examine the antidiabetic potential of medicinal plants in Lagos State of Nigeria. Therefore, an ethnobotanical survey was conducted to identify other potential antidiabetic plants used within the traditional pharmacopoeia of Lagos State with particular emphasis on five Local Government Area's (districts).

2. Methodology

2.1. Study area

The study area comprises five towns in five local government areas (LGA) namely: Lagos Island and Lagos Mainland LGA's representing the urban communities, and Kosofe/Shomolu, Mushin and Oshodi-Isolo LGA's representing the rural communities. These LGA's are located in the central district of Lagos State in southwestern Nigeria (Fig. 1). The State covers an area of approximately 3568.61 km² and lies between Latitude 6° 35' N and Longitude 3° 45' E (LSC, 2006). It borders the Atlantic Ocean to the South, Ogun State to the North and the East, and the Republic of Benin to the West.

2.2. Administration of questionnaire

For the purpose of this work, ethnomedical information on the plants used in the treatment of DM were obtained by consulting

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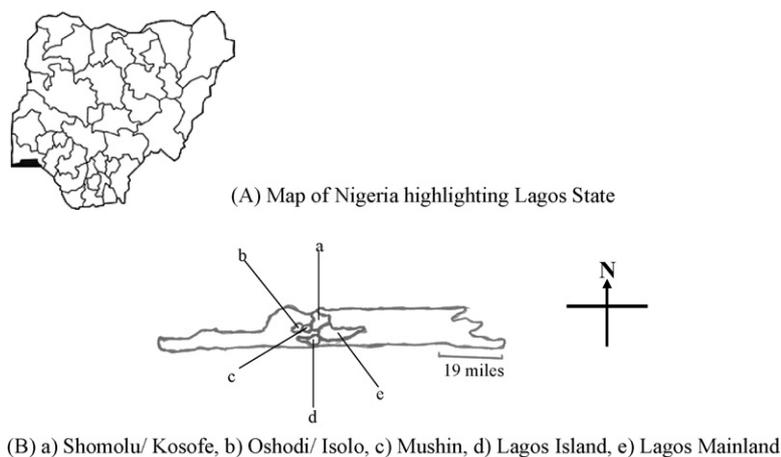


Fig. 1. Location of the study area: (A) Lagos State highlighted in Nigeria and (B) local Government Area's surveyed in Lagos State.

Traditional Medical Practitioners (TMP's), herbalists and herb sellers in selected LGA's. The use of semi-structured questionnaire and oral interviews were adopted to obtain the relevant ethnomedical data. The questionnaires were administered by trained interviewers and in some cases, monetary incentives were given to unwilling respondents. It was divided into three sections. Section (1) dealt with personal information as age, sex, religion, local tribe and nationality. Section (2) was about tradomedical practice and included information on specialty, duration of practice, diagnosis method, clerking of diabetic patients, admissions and referrals, and dietary recommendations. In section (3), plants and recipes, and other treatment methods used for treating diabetes were documented. In all instances, consent was obtained from the respondents to divulge information, and when consent was refused, no question whatsoever was forced on the individual.

2.3. Authentication of plants

Herbal remedies identified for treating DM were authenticated by comparison with appropriate voucher specimens at the herbaria in Department of Botany, Obafemi Awolowo University (University herbarium Ife, UHI) and Forestry Research Institute of Nigeria (FHI), Ibadan.

3. Results and discussion

3.1. Personal information and treatment practices of trado-specialists

One hundred respondents comprising traditional medical practitioners (TMP's, 64%), herb sellers and herbalists having formal education (95%) and mainly from the Yoruba tribe (95%) were interviewed in the survey. 76% of the respondents were males. Until now, majority of TMP's were illiterates (Jouad et al., 2001) and consequently could not document their practice. Islam (51%) and Christianity (38%) were the predominant religions of the respondents aged 21–60 years which suggests traditional herbal practice as the exclusive preserve of the older population (70%).

80% of the respondents claimed to have treated diabetes for up to 11–30 years having acquired the knowledge mainly through training/parental inheritance (45%). In view of the nature of the practice, 96% of the respondents claimed to use mainly herbs while others use non-plants materials like honey, local gin, snail and minerals like alum and potash. Trado-specialists mainly employed frequency

of urination (21%) and detection of ants in urine in combination with laboratory tests (36%) as the main diagnostic methods, but without any diagnostic equipment. The option of treating symptoms of diabetes rather than the disease per se which allows greater capture of possible plant remedies has been recommended by Leduc et al. (2006). 77% of diabetic patients were usually aged 21–60 years indicating preponderance of type-2-diabetes (Jouad et al., 2001; Sobngwi et al., 2001).

Interestingly, all the respondents claimed to have successfully treated diabetes on a weekly (39%) or monthly (23%) basis with verbal instructions (97%) usually accompanying use of herbal remedies. However, duration of treatment was usually between 12 and 16 weeks (39%) without known serious side effects in 92% of the cases. Diabetic patients that consulted trado-specialists in the State were mainly out-patients (92%), and in the few instances of admission, the herbal clinic or residence of the practitioners served as the admission port. Furthermore, 96% of the trado-specialists claimed to have treated referral cases usually from orthodox hospitals (49%, and to a lesser extent from other herbal clinics. However, only few of the practitioners (20%) did refer cases to other centres. This corroborates the fact that majority of the diabetes trado-specialists have successfully treated the disease with herbal remedies. Apart from herbal therapy, traditional practitioners also recommended appropriate diet such as beans and its derivatives (65%), and vegetables and fruits (25%) to their patients.

3.2. Herbal recipes for diabetes therapy

Fifty herbal remedies which included decoctions (34%), infusions (20%), juice (14%), macerates (8%) and essence (8%) were listed by trado-specialists for treating diabetes in Lagos State (Table 1). However, only 14% of the remedies were powders which were usually taken with hot pap (liquid preparation of ground maize). The liquid preparations were usually prepared with water and drunk regularly with either glass cup or tea spoon as appropriate measure. The herbal recipes which are mostly multi-component in nature comprised 49 different plant species belonging to 48 genera in 33 families (Table 2), with Euphorbiaceae (15.2%), Apocynaceae (9.1%), Cucurbitaceae (9.1%), Asteraceae (9.1%) and Fabaceae (9.1%) as the frequently cited families. Apart from *Vernonia amygdalina* Del. which was the most frequently cited plant (32.6%) (Table 2), other principal antidiabetic plants were *Bidens pilosa* L. (14.3%), *Ocimum gratissimum* L. (12.2%), *Carica papaya* L. (12.2%), *Citrus aurantiifolia* (Christm.) Swingle (10.2%), *Momordica charantia* L. (8.1%) and *Aframomum melegueta* K. Schum (8.1%).

Table 1
Herbal recipes for treating diabetes mellitus in Lagos State, Nigeria.

No.	Recipe combination	Solvent used	Type of preparation
1	<i>Vernonia amygdalina</i> leaves should be squeezed till the juice comes out and mixed with salt.	Water	Juice
2	Cut into pieces <i>Momordica charantia</i> bark and leaf, then boil in cold water.	Water	Decoction
3	<i>Allium cepa</i> dried leaf, <i>Carica papaya</i> root and <i>Aframomum melegueta</i> leaf are ground and taken with hot pap.	Pap	Powder
4	Leaves of <i>Abrus precatorius</i> , <i>Alchornea cordifolia</i> and <i>Blighia sapida</i> should be squeezed with water until the juice comes out.	Water	Infusion
5	<i>Citrus aurantiifolia</i> leaves and powder of cascara are squeezed with water and the juice is taken.	Water	Infusion
6	<i>Vernonia amygdalina</i> leaves should be squeezed with water and drunk twice daily.	Water	Infusion
7	<i>Rauvolfia vomitoria</i> leaves are squeezed with water, mixed with <i>Citrus aurantiifolia</i> juice and boiled for 10 min.	Water	Decoction
8	Dried root and bark of <i>Securidaca longipedunculata</i> and <i>Uvaria afzelii</i> are ground and taken with hot pap once daily.	Pap	Powder
9	<i>Khaya ivorensis</i> bark, <i>Dichapetalum toncarium</i> root and shaft of <i>Sorghum caudatum</i> are soaked in hot water for 10–15 min.	Water	Macerate
10	Leaves of <i>Saccharum officinarum</i> and <i>Morinda lucida</i> are squeezed till the juice comes out, then mix with water and take a glassful twice daily.	Water	Infusion
11	<i>Solanum aethiopicum</i> leaves are infused in hot water and taken with one glass cup thrice daily.	Water	Infusion
12	Leaves of <i>Peperomia pellucida</i> , <i>Ocimum gratissimum</i> and <i>Vernonia amygdalina</i> are squeezed with water, filtered and taken with glass cup thrice daily.	Water	Infusion
13	<i>Bidens pilosa</i> fruits and <i>Vernonia amygdalina</i> leaves are soaked in water. One glass cup is taken three times daily.	Water	Infusion
14	Leaves of <i>Jatropha curcas</i> and <i>Syzygium guineense</i> and palm oil are boiled with water. One glass cup every morning.	Water	Decoction
15	African giant sail and seeds of <i>Aframomum melegueta</i> and pap wrapped in a leaf.	Pap	Concoction
16	Leaves of <i>Lawsonia inermis</i> and potash salt are boiled with water. One glass cup is taken every morning.	Water	Decoction
17	The dried roots of <i>Bidens pilosa</i> ground into powder, mixed with hot pap and honey. Two teaspoonfuls are taken twice daily.	Pure honey and hot pap	Powder
18	<i>Vernonia amygdalina</i> juice mixed with potash salt and honey. One cup is taken every morning and night.	Honey	Juice
19	Leaves of <i>Aloe vera</i> and <i>Crudia klainei</i> are squeezed until juice comes out. Half glass cup is taken twice daily.	Water	Juice
20	Juice of flower of <i>Musa nana</i> mixed with honey.	Honey	Juice
21	Leaves and roots of <i>Vernonia amygdalina</i> , <i>Momordica charantia</i> , <i>Carica papaya</i> , <i>Bidens pilosa</i> and <i>Ocimum gratissimum</i> are soaked in alcohol. One glass cup is taken thrice daily.	Alcohol	Essence
22	Roots of <i>Uvaria chamae</i> boiled with water. One glass cup taken daily.	Water	Decoction
23	Leaves of <i>Macaranga barteri</i> , <i>Ageratum conyzoides</i> and <i>Vernonia amygdalina</i> are squeezed with water until the juice comes out.	Water	Juice
24	<i>Vernonia amygdalina</i> leaves and <i>Allium cepa</i> bulb are soaked in water for 5 days. One glass cup drunk daily.	Water	Macerate
25	<i>Nicotiana tabacum</i> leaves, <i>Bridelia micrantha</i> bark, <i>Bidens pilosa</i> seeds, <i>Alstonia congensis</i> roots and potash are boiled with water. One glass cup drunk daily.	Water	Decoction
26	Roots of <i>Garcinia kola</i> and <i>Anthocleista djalensis</i> mixed with cow urine and boiled with water.	Water	Decoction
27	Leaves of <i>Alchornea cordifolia</i> , <i>Securidaca longipedunculata</i> , seeds of <i>Bidens pilosa</i> are boiled with water. One glass cup to be taken daily.	Water	Decoction
28	<i>Senecio bialfræ</i> roots, <i>Carica papaya</i> leaves and <i>Aframomum melegueta</i> seeds are soaked in alcohol. One glass cup to be taken daily.	Alcohol	Essence
29	<i>Ficus asperifolia</i> roots and <i>Citrus aurantiifolia</i> juice are boiled with water.	Water	Decoction
30	<i>Bidens pilosa</i> seeds, <i>Vernonia amygdalina</i> leaves, <i>Momordica charantia</i> fruits and <i>Ocimum gratissimum</i> leaves, <i>Alstonia congensis</i> bark are soaked in local alcohol.	Alcohol	Essence
31	Whole plant of <i>Ageratum conyzoides</i> , leaves of <i>Momordica charantia</i> and <i>Mangifera indica</i> are boiled with cold water.	Water	Decoction
32	Fruits of <i>Ananas comosus</i> and unripe <i>Carica papaya</i> and <i>Ficus asperifolia</i> are boiled with water.	Water	Decoction
33	<i>Vernonia amygdalina</i> leaves, <i>Bidens pilosa</i> seeds, <i>Uvaria afzelii</i> roots are soaked in water. One cup is drunk three times daily.	Water	Macerate
34	Stem and bark of <i>Bridelia micrantha</i> , leaves of <i>Vernonia amygdalina</i> and <i>Ocimum gratissimum</i> are squeezed with water and drunk.	Water	Infusion
35	<i>Alstonia boonei</i> bark, <i>Citrus aurantiifolia</i> fruit juice and <i>Cucumeropsis mannii</i> seeds are burnt into ashes and drunk with water.	Water	Powder
36	<i>Carica papaya</i> fruits are boiled with water.	Water	Decoction
37	Leaves of <i>Vernonia amygdalina</i> and <i>Ocimum gratissimum</i> are squeezed with water and drunk.	Water	Infusion
38	<i>Jatropha curcas</i> fruits are burnt into ashes and taken with pap.	Water	Powder
39	<i>Vernonia amygdalina</i> leaves, <i>Croton lobatus</i> fruits and <i>Macaranga barteri</i> leaves are boiled with water. One glass cup drunk daily.	Water	Decoction
40	<i>Vernonia amygdalina</i> leaves are squeezed with water.	Water	Infusion
41	The fresh leaves and roots of <i>Senna podocarpa</i> are boiled with water for 20 min. One glass cup is taken every morning.	Water	Decoction
42	<i>Citrus aurantiifolia</i> juice and potash mixed with bile of cow. One glass cup to be taken every 3 days.	Bile of cow	Juice
43	Dried leaves and roots of <i>Icacina trichantha</i> , and <i>Tetrapleura tetraptera</i> fruit are ground into powder, and taken with pap.	Pap	Powder
44	<i>Cucumeropsis mannii</i> fruit juice and potash are mixed with <i>Citrus aurantiifolia</i> juice. One table spoonful is taken at night.	Lime juice	Juice
45	<i>Crinum jagus</i> bulb is cut into pieces and soaked in water for 5 days. One teaspoonful to be taken every 3 days.	Water	Macerate

Table 1(Continued)

No.	Recipe combination	Solvent used	Type of preparation
46	Leaves of <i>Vernonia amygdalina</i> and <i>Glyphaea brevis</i> are boiled with water for 20 min and then drunk.	Water	Decoction
47	<i>Citrullus lanatus</i> fruit and potash are boiled with water. One glass cup is drunk every 3 days.	Water	Decoction
48	Dried bulb of <i>Allium cepa</i> , dried root of <i>Carica papaya</i> and dried seeds of <i>Aframomum melegueta</i> are ground into powder and taken with hot pap.	Pap	Powder
49	<i>Securidaca longipedunculata</i> root is soaked in alcohol for 10 days. One glass cup daily.	Alcohol	Essence
50	Leaves of <i>Allium sativum</i> , <i>Vernonia amygdalina</i> , <i>Ocimum gratissimum</i> , and potash are boiled with water. One glass cup is taken daily.	Water	Decoction

Some of the plants documented in this survey for example *Momordica charantia*, *Aloe vera* L., *Mangifera indica* L. and *Bidens pilosa* are already covered in ethnobotanical surveys for antidiabetic plants of Pakistan (Ahmad et al., 2007), Morocco (Jouad et al.,

2001; Haddad et al., 2003) and Kenya (Kareru et al., 2007). In the Canadian survey, slight differences between survey-based ranking and literature-based ranking were observed (Leduc et al., 2006). This approach serves to confirm traditionally acclaimed antidia-

Table 2

Medicinal plants used for treating diabetes in Lagos State, Nigeria.

Botanical name	Family	Voucher no.	Parts used	Common name	Local name	Frequency
<i>Abrus precatorius</i> L.	Fabaceae	Faremi 3397 (UHI)	Leaf, Seed	Crab's eye	"Ojuologbo"	1 (2%)
<i>Aframomum melegueta</i> K. Schum	Zingiberaceae	Olabiyi 13297 (UHI)	Leaf	Alligator pepper	"Ataare"	4 (8.1%)
<i>Ageratum conyzoides</i> L.	Asteraceae	Hall 13861 (UHI)	Leaf	Goat weed	"Imi eshu"	2 (4.1%)
<i>Alchornea cordifolia</i> (Schum. & Thonn.) Muell. Arg.	Euphorbiaceae	Adelusi 15337 (UHI)	Leaf	Christmas bush	"Ipa"	2 (4.1%)
<i>Allium cepa</i> L.	Alliaceae	Faremi 8418A (UHI)	Bulb	Onion	"Alubosa"	3 (6.1%)
<i>Allium sativum</i> L.	Alliaceae	Faremi 8418B (UHI)	Bulb	Garlic	"Ayu"	1 (2%)
<i>Aloe vera</i> (L.) Burm. F	Asphodelaceae	Faremi 108024 (FHI)	Leaf	Aloe	Aloe	1 (2%)
<i>Alstonia boonei</i> De Wild.	Apocynaceae	Daramola 138227 (UHI)	Leaf	Stool wood	"Ahun"	1 (2%)
<i>Alstonia congensis</i> Engl.	Apocynaceae	Daramola 74988 (FHI)	Root	Stool wood	"Awogbo ahun"	2 (4.1%)
<i>Ananas comosus</i> (L.) Merrill	Bromeliaceae	Isawumi 6723 (UHI)	Fruit	Pineapple	"Ogede-oyinbo"	1 (2%)
<i>Anthocleista djalensis</i> A. Chev	Gentianaceae	Guile 5037 (UHI)	Root, Leaf	-	"Sapo"	1 (2%)
<i>Bidens pilosa</i> L.	Phyllanthaceae	Agboola 14898 (UHI)	Seed	Black Jack	"Abere"	7 (14.3%)
<i>Blighia sapida</i> K. Konig	Sapindaceae	Guile 4741 (UHI)	Leaf	Akee apple	"Isin"	1 (2%)
<i>Bridelia micrantha</i> (Hochst.) Baill.	Euphorbiaceae	Guile 2536 (UHI)	Bark	Coastgold leaf	"Arasha, osha"	2 (4.1%)
<i>Carica papaya</i> L.	Caricaceae	Daramola 14729 (UHI)	Fruit, Seed	Pawpaw	"Ibepe"	6 (12.2%)
<i>Citrullus lanatus</i> (Thunb.) Mansf.	Cucurbitaceae	Sijuade 1339 (UHI)	Seed	Water melon	"Egusi bara"	1 (2%)
<i>Citrus aurantifolia</i> (Christm.) Swingle	Rutaceae	Sijuade 4575 (UHI)	Fruit	Lime	"Orombo wewe"	5 (10.2%)
<i>Crinum jagus</i> (Thomps.) Dandy	Amaryllidaceae	Guile 8701 (UHI)	Bulb	St. Christopher lily	"Isu meri"	1 (2%)
<i>Croton lobatus</i> L.	Euphorbiaceae	Hall 2571 (UHI)	Fruit	Cascarilla	"Eru alamo"	1 (2%)
<i>Crudia klainei</i> De Wild.	Fabaceae	Daramola 17374 (FHI)	Leaf	Winding tree	"Afomo"	1 (2%)
<i>Cucumeropsis mannii</i> Naud.	Cucurbitaceae	Faremi 1340 (UHI)	Seed	-	"Egusi-itoo"	1 (2%)
<i>Dichapetalum toxicarium</i> (G. Don) Baill.	Dichapetalaceae	Ibhanesebhor 84229 (FHI)	Leaf	Rat's bone	"Itakun"	1 (2%)
<i>Ficus asperifolia</i> Miq.	Moraceae	Faremi 12217 (UHI)	Leaf	Sand paper tree	"Epin"	2 (4.1%)
<i>Garcinia kola</i> Heckel	Guttiferaceae	Faremi 13184 (UHI)	Root	Bitter kola	"Orogbo"	1 (2%)
<i>Glyphaea brevis</i> (Spreng.) Monach.	Tiliaceae	Sanford 2134 (UHI)	Leaf	-	"Atori"	1 (2%)
<i>Icacina trichantha</i> Oliv.	Icacinaceae	Sanford 4380 (UHI)	Tuber, Leaf	-	"Gbegbe"	1 (2%)
<i>Jatropha curcas</i> L.	Euphorbiaceae	Daramola 8585 (UHI)	Leaf	Pignut plant	"Botute"	2 (4.1%)
<i>Khaya ivorensis</i> A. Chev	Meliaceae	Daramola 13946 (UHI)	Bark	African mahogany	"Oganwo"	1 (2%)
<i>Lawsonia inermis</i> L.	Lythraceae	Hall 971 (UHI)	Leaf	Henna plant	"Laali"	1 (2%)
<i>Macaranga barteri</i> Mull. Arg.	Euphorbiaceae	Moughalu 15239 (UHI)	Leaf	-	"Agbosa, arasa"	2 (4.1%)
<i>Mangifera indica</i> L.	Anacardiaceae	Faremi 4820 (UHI)	Leaf	Mango	"Mangoro"	1 (2%)
<i>Momordica charantia</i> L.	Cucurbitaceae	Metu 13260 (UHI)	Leaf	African cucumber	"Ejinrin were"	4 (8.1%)
<i>Morinda lucida</i> Benth.	Rubiaceae	Daramola 14650 (UHI)	Leaf	Brimstone tree	"Oruwo"	1 (2%)
<i>Musa nana</i> J. de Loureiro	Musaceae	Isawumi 7953 (UHI)	Juice	Banana	"Ogede"	1 (2%)
<i>Nicotiana tabacum</i> L.	Solanaceae	Daramola 14702 (UHI)	Leaf	Tobacco	"Taba"	1 (2%)
<i>Ocimum gratissimum</i> L.	Lamiaceae	Daramola 14849 (UHI)	Leaf	Tea bush	"Efinrin nla"	6 (12.2%)
<i>Peperomia pellucida</i> (L.) H.B.K.	Piperaceae	Faremi 245 (UHI)	Leaf	Shiny bush	"Rinrin"	1 (2%)
<i>Rauvolfia vomitoria</i> Afzel.	Apocynaceae	Guile 5190 (UHI)	Leaf/Root	Swizzle stick	"Asofeyeje"	1 (2%)
<i>Saccharum officinarum</i> L.	Poaceae	Isawumi 10898 (UHI)	Root/Leaf	Sugarcane	"Ireke"	1 (2%)
<i>Securidaca longipedunculata</i> Fres.	Polygalaceae	Olatunji 14838 (UHI)	Root	Violet tree	"Ipete"	3 (6.1%)
<i>Senecio bialfruae</i> Oliv. & Hiern.	Asteraceae	Faremi 15325 (UHI)	Root	-	"Ako amunimuye"	1 (2%)
<i>Senna podocarpa</i> (Guill. & Perr.) Lock	Caesalpiniaceae	Sijuade 3146 (UHI)	Fruit	Senna	"Asunwon egba"	1 (2%)
<i>Solanum aethiopicum</i> L.	Solanaceae	Guile 6840 (UHI)	Leaf	Mock tomato	"Osun"	1 (2%)
<i>Sorghum caudatum</i> (Hack.) Stapf.	Poaceae	Faremi 10976 (UHI)	Shaft	Sorghum	"Oka baba"	1 (2%)
<i>Syzgium guineense</i> (Willd.) DC.	Myrtaceae	Faremi 1653 (UHI)	Seed	Snake bean tree	"Ori"	1 (2%)
<i>Tetrapleura tetraptera</i> (Schum. & Thonn.) Thaub.	Fabaceae	Faremi 3391 (UHI)	Fruit	-	"Aridan"	1 (2%)
<i>Uvaria afzelii</i> Sc. Elliot	Annonaceae	Daramola 14858 (UHI)	Root	Monkey finger	"Gbongbose"	2 (4.1%)
<i>Uvaria chamae</i> P. Beauv.	Annonaceae	Daramola 13034 (UHI)	Root	Finger root	"Eruju"	1 (2%)
<i>Vernonia amygdalina</i> Del.	Asteraceae	Faremi 6334 (UHI)	Leaf	Bitter leaf	"Ewuro"	16 (32.6%)

betic activity and also complements ethnobotanical surveys. In the middle belt zone (Benue State) of Nigeria, diabetes was listed as one of the diseases commonly treated by traditional practitioners using six common herbal recipes often prescribed as decoctions (Igoli et al., 2005). Although majority (66%) of the recipes documented in the Lagos State survey were multi-component in nature, mono-component recipes have also been found to be effective (Adjanohoun et al., 1991; Haddad et al., 2003; Kareru et al., 2007).

Furthermore, various workers have investigated antidiabetic activity of several herbal remedies used in Nigeria, and have confirmed potentials for *Vernonia amygdalina* (Akah and Okafor, 1992), *Momordica charantia* (Raza et al., 1996) and *Ocimum gratissimum* (Aguiyi et al., 2000) amongst others (Miura et al., 2001; Nyunai et al., 2006; Ojewole, 2006). In addition, this survey has revealed at least 38 other plant remedies that could be investigated for efficacy. We have recently investigated the antidiabetic activity of *Spondias mombin* L. (Gbolade et al., 2008) and *Senna alata* L. (unpublished results) documented in the survey for southwestern Nigeria by Adjanohoun et al. (1991). However, there is an urgent need to scientifically rationalise the efficacy of other frequently cited antidiabetic plants for which no report is currently available.

While advocating herbal therapy for alternative management of diabetes, toxicity of potential plants (Jouad et al., 2001) should be borne in mind. In the Nigerian traditional medicine, *Mangifera indica* and *Morinda lucida* L. among other antidiabetic plants were reported to be toxic in an antimalarial investigation by Ajaiyeoba et al. (2006). Traditional medicine is commonly practiced by the population in Lagos State and the State Government has given legal backing to this form of medicine by constituting Board of Traditional Medicine to regulate its practice. People all over the State stock some traditional home remedies and hawking of such remedies is a popular trade. Various reasons for the acceptability and use of traditional medicine by indigenous populations of developing countries have been documented (Jouad et al., 2001).

4. Conclusion

To the best of our knowledge, ethnobotanical surveys of medicinal plants in Lagos State and especially in the treatment of diabetes are unknown. This present inventory therefore represents the contribution of natural flora of Lagos State to the global approach adjudged to be advantageous and widely acceptable in controlling diabetes. This survey has clearly identified *Vernonia amygdalina* as the most popular traditionally acclaimed antidiabetic herbal remedy in addition to *Carica papaya*, *Citrus aurantiifolia*, *Bidens pilosa*, *Momordica charantia*, *Ocimum gratissimum* and *Aframomum melegueta*, which are also frequently cited.

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