ETHNOBOTANICAL SURVEY OF ANTI – DIABETIC PLANTS IN SOME LOCAL GOVERNMENT AREAS IN OGUN STATE, NIGERIA

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The results of an ethnobotanical survey of plants used in the treatment of diabetes in Ipokia, Ilaro and Ijebu North Local Government Areas of Ogun State are reported. Thirty four plant species in twenty families and some twenty recipes were identified *Anthocleista vogelii Planch, Anthocleista djalonensis A. Chev, Bridelia ferruginea Benth, Globimethula braunii (Engl) van Tiegh, Momordica charantia Linn and Musa sapientum Linn* were prominent in the recipes. These phytomedicine were administered as concoction, decoctions, and powder of ash residue. Previous biological studies of some of the plants confirm the rational use of the recipes by traditional healers. Field study of plants and their specific uses by traditional healers eliminate random collection and it is an important phase in the identification, screening and subsequent isolation of bioactive compounds from the plants. A systematic scientific research into the efficacy of these medicinal plants is suggested.

INTRODUCTION

Nature provides materials for the treatment of diseases and ailments in the different flora and fauna of the world hence there is an extensive worldwide exploration of local flora for bioactive components. The potential of the Nigerian flora as a veritable source for pharmaceuticals and other therapeutic have variously been expressed. (Oliver – Bever, 1960, Gbile and Adesina, 1986).

Previous ethnobotanical studies of medicinal plants conducted in various parts of Nigeria had emphasized the need for a re-orientation of government policy in the health care delivery system of the country. (Gbile *et al* 1990, Ashidi *et al.* 1999). The use of plants as medicine still presents a very important phenomenon in traditional medicine which is an established part of the culture of inhabitants of developing countries (De Feb and Senatore, 1993, Ashidi *et al.* 1999).

Over the past decade, renewed interest in drugs of plant origin has been growing steadily essentially because of an increased demand for alternative medicine (Obisesan and Adeyemo, 1998).

Traditional medicine practices have been seen to succeed where orthodox medicines have failed and most of the available treatments for diabetes in orthodox medicines are for the control of the disease rather than cure. This survey was initiated because we identified some acclaimed traditional healers in the target areas who treat significant number of patients with diabetes in their premises. The essence of this study is to provide information on the medicinal plants and recipes used by the healers in the treatment of diabetes. The study further aims at stimulating further chemical and biological screening of the identified plants with a view to producing effective drugs to complement those in use in the treatment of the disease.

MATERIALS AND METHODS

Field survey was conducted in Ipokia, Ilaro and Ijebu – North Local Government Areas of Ogun State, Nigeria. These areas were chosen because of their nearness to sugar – cane plantations and the fact that there are many acclaimed herbal specialists in the treatment of the disease.

Recipes were collected from twenty-five informants, thirteen of whom were notable specialist and herbal sellers. Relevant information were obtained on the plant species and plant part used to treat the disease, mode of preparation, dosage and precautions. Assistance was also sought in most cases for the collection of the plants from the field, bearing in mind that there are dialectical differences, especially amongst Yewa and Ijebu tribes. Confirmation of all identifications was done in the university of Ibadan herbarium and the voucher specimen were deposited at the Eli-kaf Herbarium, Department of Biological Sciences, Ogun State University, Ago Iwoye.

RESULTS

Thirty four plant species in twenty families and some recipes were identified as commonly used in the treatment of diabetes. Some of traditional healers cited practical cases of referred diabetic patients from hospital that have been cured by them.
Table 1 shows the list of plant species identified, and the plant parts used and their Yoruba names.

ENUMERATION OF RECIPES

1. *Chrysophyllum albidum* seeds are collected dried and incinerated. The resulting ash is mixed with palm oil and kept for six hours after which the patient is instructed to lick a tablespoon full
2. Equal quantities of the leaves of *Globimetula braunii and Bridelia micrantha* are boiled together usually in same coal spot. The concoction is allowed to cool and a glass full taken 3 times daily.
3. *Corchorus olitorus* leaves are boiled along with little quantity of potash for 10 minutes. The preparation can be cooked with fish (*Clarias gariepinus*). No table salt should be added.
4. *Tapinanthus bangwensis* leaves, *Aframomum melegeuta* seeds and *Ocimum gratissium* leaves are boiled in a pot. A glass-cup-full is taken before meal in the morning and after meal in the evening before retiring to bed.
5. The stem bark of *Mangifera indica* and *Alstonia booneii* are boiled together in fermented zea maize grains water for 15 minutes. Half glass-cup-full of the extract is taken twice daily.
6. The leaves and stem bark of *Bridelia ferruginea* and leaves and bulb of *Allium ascalonicum* are boiled together in a coal pot. One tea-cup-full of the extract is taken three times daily.
7. Fresh leaves of *Morinda lucida, Momordica charantia, Vernonia amygdalina* and unripe fruit of *Musa sapientum* are boiled together with fermented *Zea mays* liquor. Two table spoonful of the preparation are taken three times daily.
8. Dried stem bark of *Entandrophragma utile* and *Zingiber officinale* are ground into fine powder and soaked in alchol. Two tablespoonful of extract are taken every morning after the third day.
9. Leaves and stem bark of *Azadirachta indica* and *Ficus goliath* are properly dried and boiled. A glassful of the concoction is taken thrice daily
10. The unripe fruit of *Carica papaya* is sliced and eaten.
11. *Xanthosoma sagittifolia* roots is boiled and taken while still warm. One teacup-full thrice daily.
12. The leaves of *Tecoma stans* and *Jathropha curcas* boiled together and taken two teaspoonful before meal.
13. *Anthocleista djalonensis* stem bark and leaves of *Citrillus colocythis* are boiled in water. One teaspoonful of the preparation is taken once daily.
14. The leaves of *Englerina gabonensis* and *Anthocleista vogelii* leaves and stem barks are boiled together in a coal pot. *Momordica charantia* leaves and fruits are boiled together with water. One teaspoonful of the cold extract is drunk thrice daily. The cold extract is also mixed with little quantity soap and used to bath.
15. *Anthocleista vogelii* leaves and *Momordica charantia* leaves and fruits are boiled together with water. One teaspoonful of the cold extract is drunk thrice daily. The cold extract is also mixed with little quantity if local soap and used to bath.
16. *Musa sapientum* fruit, *Allium sativum* leaves and bulb, *Tetracarpidium conophorum* seeds are ground together and soaked for 24 hours in alcohol. One table spoonful is taken after meal.
17. The leaves of *Viscum rotundifolia, Lagestroaemia speciosa* are sun dried and blended into coarse powder. The powder is boiled, filtered and teacupful taken daily.
18. The leaves of *Bridelia ferruginea, Momordica charantia* and *Anthocleista vogelii* leaves are sun dried and cooked in water in a coal pot. Half teacupful of the extract is taken once daily.
19. The leaves of *Catharanthus roseous* and *Ficus exasperata* are boiled in water and allowed to cool. One teacupful of the extract is taken very early in the morning long before breakfast.
20. The dried seed of *Abelmoscus esculentus* is mixed with bile of male cow and soaked in alcohol (dry gin). The supernatant is decanted and two table spoonful once daily.

Table 1: Medicinal Plants used in the treatment of diabetes.

S/N	BOTANICAL NAMES	FAMILY	LOCAL NAMES (YORUBA)	PARTS USED
1.	*Abelmoscus esculentius (Linn.)* Moench	Malvaeceae	Ila	Fruit
2.	*Aframomum melegeuta* K. Schum.	Zingiberaeceae	Atare	Seeds
3.	*Allium ascalonicum.* Linn	Alliaceae	Alubosa elewe	Leaves and bulb
4.	*Allium sativa* Linn	Alliaceae	Ayuu	Bulb
5.	*Alstonia booneii* Dewild	Apocynaceae	Ahun	Leaves and stem bark
6.	*Anthocleistia vogelii* Planch	Loganiaceeae	Sapo	Leaves and stem bark
7.	*Azadirachta indica* (Linn) G. Don.	Meliaceae	Dangoyaro	Leaves
8.	*Bridelia ferruginea* Benth	Euphorbiaceae	Era	Leaves and stem bark
9.	*Bridelia micrantha* Hochst Baill	Euphorbiaceae	Era odan	Leaves and stem bark
10.	*Carica papaya* Linn	Caricaceae	Ibepe	Fruit
11.	*Chrysophyllum albidum* G. Don	Sapotaceae	Osan apala	Seeds
12.	*Citrullus colocynthis* (Linn.) Schrad.	Cucurbitaceae	Tagiri	Fruits/leaves
13.	*Citrullus lanatus* (Thunb.) Mansf.	Cucurbitaceae	Egusi	Fruits/leaves
14.	*Corchorus olitorius* Linn.	Tiliaceae	Ewedu	Leaves
15.	*Englerina gabonensis* (Engl.) Balle	Loranthaceae	Afomo Ipin	Leaves
16.	*Entandrophragma utile.* Sprague	Meliaceae	Jebo	Leaves
17.	*Ficus exasperata*, Vahn	Moraceae	Ipin	Leaves
18.	*Ficus goliath* A. char	Moraceae	Odan rere	Leaves
19.	*Globimetula braunii* (Engl.) Van Tiegh	Loranthaceae	Afomo kooko	Leaves
20.	*Ipomaea batatas* Linn.	Convolvulaceae	Odunkun	Tuber
21.	*Jathropha curcas* Linn.	Euphorbiaceae	Botuje	Leaves
22.	*Lagestroemia speciosa* Linn.	Lythraceae	Abere	Leaves
23.	*Mangifera indica* Linn.	Anacardiaceae	Mongoro	Leaves/stem bark
24.	*Momordica charantia* Linn.	Cucurbitaceae	Ejinrin	Leaves and fruit
25.	*Morinda lucida* Benth	Rubiaceae	Oruwo	Leaves and stem bark
26.	*Musa sapientum* Linn.	Musaceae	Ogede	Fruit
27.	*Ocimum gratissimum* Linn.	Labiateae	Efinrin	Leaves
28.	*Tapinanthus bangwensis* (Engl. & K. Krause)	Loranthaceae	Afomo obi	Leaves
29.	*Tetracarpidium conophorus* (Miill.Arg.) Hutch &Dalz)	Euphorbiaceae	Asala	Fruit
30.	*Tecoma stans (Lam.)* H. B. K.	Bignonaceae	Ilara	Leaves
31.	*Vernonia amygdalina* (Del.)	Compositae	Ewuro	Leaves
32.	*Viscum rotundifolia* (V. Decurrens)	Loranthaceae	Afomo osan	Leaves
33.	*Xanthosoma sagittifolia* schott.	Araceae	Koko funfun	Roots
34.	*Zingiber officinale* Rosc.	Zingiberaceae	Atale	Rhizome

DISCUSSION

Anthocleista vogelii, A. djalonensis, Bridelia ferruginea, Globinmethula braunii, Momordica charantia and Musa sapientum are most prominent in the recipes which are indicative of their importance in treatment of the disease. Some if the plants identified here in this work have been experimentally verified. These include *Momordica charantia*, (Srivastava et al, 1993), from which a hypoglycaemic peptide, (p-insulin) has been reported *Alstonia boonei, Catharanthus roseus, Citrullus vulgaris, ipomoea hatatas, Tecoma stans* (Hammouda & Khallatalah, 1971) and *Lagestroemia speciosa* (Gbile, et al., 1990).

The comparatively high incidence of the families Loranthaceae and Euphorbiaceae (23.6%) in the list of plants identified suggests the importance of both families as repository of useful plants, which may be explored for drugs in the treatment of diabetes. In Africa, the diversity of the flora partly explains the strengths of traditional medicine and the wide varieties of medicinal recipes utilized by traditional healers (Adjanohoun et al 1991). About 47% of the list comprises savannah trees. Most of these plants have been exploited over the years without adequate replacement. Continued utilization of these trees will no doubt affect their availability in the nearest future; hence effective means of sustainable harvesting and conservation should be assured.

Field study of plants and their specific uses eliminate random collection from the rich plant resources of Nigeria which have great potential for pharmaceutical utilisation (Gbile, *et al*, 1990, Olukoya *et al*, 1993). Information on the local uses of medicinal plants is an important phase in the identification and subsequent isolation of biologically active compounds from the plants. There is urgent need for collaborative efforts between researchers in medicine and pharmaceutical industries if our goal of attaining health for all citizens in the country is to be achieved.

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