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Ethnomedicinal Plants Used By the Idoma People- Benue State, Nigeria

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ABSTRACT

Content and purpose of study
An ethno medicinal survey of plants used by the Idoma people of Benue State, Nigeria, was carried out using a structural questionnaire via oral interview with Traditional Medicine Practitioners (TMPs) and knowledgeable respondents by random sampling at different sites within the Local Government Area. Fifty knowledgeable respondents were consulted for information on the plants used for curative purposes.
Main findings
A total of 63 plants belonging to 36 families were identified. Their botanical names, ailments treated, plant parts used, mode of administration and their pharmaceutical forms were provided. Some plants like *Azadirachta indica*, *Telferia occidentalis* and *Ocimum gratissimum* are used for the treatment of common ailments such as malaria, anemia and stomach upset respectively among the people.
Brief summary and potential implication
The need to document, establish the cultivation and sustainable harvesting as well as incorporation of traditional medicinal plants into the primary health care system in Nigeria were also highlighted. The data were analyzed in the forms of 'specific flora' and 'general floral'. The selectivity of a plant for a specific ailment was done by comparing between the expected and observed values of the proportion of citation of a plant for a specific disease. The difference (D) between the two proportions was then used to define the performance index (*Ip*), which ranged from 0 to 3.

Keywords- Ethnomedicine, plants, Idoma tribe, Benue state, Nigeria.

INTRODUCTION

Health and disease are measures of the effectiveness with which human groups, combining cultural and biological resources, adapt to their environment[1].Every culture irrespective of its simplicity and complexity has its own beliefs and practices concerning diseases. The culture of a community determines its health culture. Health problems and practices of any community are profoundly influenced by interplay of complex social, economic and political factors. Due to the belief in supernatural elements and religion in matters concerning health, the tribals are almost invariably found to repose faith in traditional medicine men, sorcerers and shamans. However, tribals are not adverse in accepting western medicine whenever available[2].

Ethnobotany and ethno-medical studies are today, recognized as the most viable methods of identifying new medicinal plants or refocusing on those earlier reported for bioactive constituents[3]. Plants have been of immense value to human health and roughly eighty percent of the world's populations rely on them for cure of various ailments[4]. The continual search for natural plant products used as medicines, has acted as a catalyst leading to the widespread use of traditional medicine throughout the world. Traditional medicinal practices today, are an important part of the primary health care delivery system in most of the developing world[5]. There is therefore, the need to understand the concept of traditional medicine if our health care delivery system within our society is to meet our health needs now and in the future[6]. This traditional African healing system has been known by many names like, “folk medicine”, “Native medicine”, Herbal medicine” and “Ethnomedicine”.

Ethnomedical scholars over the years have made several contributions to the development of the traditional medical system in Nigeria. This they have done through ethnobotanical surveys, preliminary investigations of phytochemistry, microscopy and pharmacological trials on medicinal plants. Some of these ethno medical scholars include[7-23].

From investigation, it is apparent that no documented information on the traditional medical system of Idoma people is available. Thus this present study was undertaken to fill the gap in the knowledge of folk medicinal practices among the Idoma people in Nigeria.

MATERIALS AND METHODS

Study Area

The investigated area is situated on latitude 6.8 and 7.0 degrees North and longitude 8.0 and 8.5 degrees East (see Figure 1).

Method of Collection

Several field trips within six months were conducted in different sections of the Idoma land. At the end of the field trips, at least one village in each zone was covered. Different categories of people were visited and interviewed on the types of medicinal plants used in Idoma district of Benue State, Nigeria. Herbalists, traditional healers and elderly people who had some knowledge of the medicinal values of the plants were interviewed. Specific questions such as plants part used, dosage, preparation of drug and ailment for which the plant is use was asked and the information recorded. These people were followed into the bush for identification and collection of the plant parts. Surely, the Idoma uses more plants, but plants not personally observed and collected were not included in this study. Some such obvious ones are cultivated plants like wheat, maize, radish, beetroot, carrot, watermelon etc.

Species Identification

Most of the plant species were identified through the professional assistance of Professor MacDonald Idu in the Department of Plant Biology and Biotechnology. Other plant species were identified with the aid of literatures which includes - A Handbook on West African Weeds[24]; Medicinal Plants of West Africa[25]; Trees of Nigeria[26]; Taxonomy of West African Flowering Plants[27] and Ethno-medicinal Uses of Plants in Nigeria[15].

Performance Index of Medicinal Plants

For analyzing the data, "specific flora" is defined as the list of plants used for treating a specific ailment, symptom or physiological effect. The "general flora" is defined as the total list of plants recorded to be used for all types of ailments among a specific group of Idoma people. The relationship between the "specific flora" and the "general flora" can be inferred as follows: if the use of a specific plant for a specific ailment is randomly selected, the proportion of the number of citations to the total number of citations (P1) would be similar to the proportion of specific flora to the general flora (P2). To illustrate the selectivity of a plant for a specific ailment, a comparison is made here between the expected and observed values of the proportion of citation of a plant for a specific disease. The difference (D) between the two proportions is then used to define a performance index *(Ip)*, which ranges from 0 to 3 according to the following arbitrary scale.

- if $P1 - P2 < 0$, $Ip = 0$: the plants concerned are rejected, not significant;
- if $0 < P1 - P2 \leq 1/3$, $Ip = 1$: average performance;
- if $1/3 < P1 - P2 \leq 2/3$, $Ip = 2$: high performance;
- if $P1 - P2 > 2/3$, $Ip = 3$: very high performance;

RESULTS

Information was obtained for 63 plant specimens. These represent 63 different plant species, distributed in 36 plant families. The following list enumerates the plant with respect to the families and genera within the families. Furthermore, information on folk medicinal plants investigated during the present survey along with their families, botanical names, local names, parts used, usages and biodynamic notes. The botanical names are alphabetically arranged. A total of 50 Idoma households were surveyed. From this survey, a total of 63 plant species were collected. A total of 1801 citations were recorded for 51 ailments and other health problems. Some prescriptions are made from a combination of two or three plant species as shown in table 1 below.

Associated plants

Plants which are prescribed together with other plant(s) for the same prescription. For example, to threat malaria, one informant proposed to prepare (boil) together the stem barks of Mangifera indica, Anacardium occidentale, Carica papaya, and Chromolaena odorata and drink the decoction. For treating diarrhea, another person proposed to boil together the stem barks of Mangifera indica with Psidium guajava and drink the decoction.

Table 2 shows the medicinal plants used by the Idomas for the treatment of various ailments, the various plant families and their natural habitats of each of them.

Table 3 shows the ailments each plant discovered in the course of this study is use in treating alongside the number of persons interviewed (homes and traditional practitioners) that mentioned them to be used for the treatment they are said/known to remedy.

Table 4 shows the index of Performance of Medicinal Plants Used by the Idoma People in Benue State, Nigeria

DISCUSSION

The medicinal plants have been used since ancient times for the treatment of human ailments[28]. There is ample evidence that increasing numbers of people across various parts of the world depend on traditional herbal remedies for their health care. The local uses of plants and products in health care are even much higher in particularly those areas with little or no access to modem health services[29].

This present study indicates that for the Idoma people, traditional medicine has wide acceptability and a long history. Indeed, majority of the people use these medications at one time or another and this presupposes the efficacy and safety of plant materials used in ethno medicines. However, of the sixty three (63) plants reported, some of them were used in treating the same ailment or category of ailment like Azadirachta indica, Anacardium occidentale, Anthocleista djalonensis, Carica papaya were used for the treatment of common ailments such as malaria. Others are Ocimum gratissimum, Musa sapientum and Elaeis guineensis which were used in treating stomach disorders; Momordica charantia for diabetes. For wound treatment, Musa sapientum and Dioscorea dumetorum; Telfairia occidentalis and Jatropha tanjorensis were used in boosting the blood (Tables 1,2 and 3). Despite the similar usage, each of the plant had different recipes and is used singly.

Also, some of the plants were used with other plant species, like bitter leaf (Vernonia amygdalina) used with scent leaf (Ocimum bassilicum) against skin problems. It was observed in the study that the collected 63 plant species were used in treating 51 ailments (Table 3). The collected plants are believed to cure different categories of ailments viz. digestive system disorders, skin diseases, gynecological and childbirth problems, respiratory system disorders, heart disease, eye problem, circulatory, urinary and nervous disorders, fevers, ailments of the bone and muscular system, bites, wounds, sores, cuts, convulsion, sore throat and loss of appetite.

The administration of the plant was either internally or externally in the form of juice, decoctions, pastes, infusions or raw as single drugs. Of the various plant parts used the leaves was mostly used followed by stem bark, fruits, root tubers, seeds and roots (Table 4). Two families - Fabaceae and Euphorbiaceae was observed to be the most dominant families with five and four plants respectively while Anacardiaceae, Asteraceae, Cucurbitaceae, Malvaceae, Moraceae and Musaceae had two plants each. This study therefore, on 63 medicinal plants used by Idoma people for the treatment of various ailments can possibly be used as a potential source for making herbal medicines against some diseases and can be treated as a document for preserving the ethno medicinal knowledge for posterity. The ethno pharmacology survey showed that medicinal plants are still widely used by the population in the area where the study was conducted. The recorded plants are grown over an extended area and are used by healers separated by long distances. This may explain the many different types of uses observed. The healers' consensus in the treatment of the main reported diseases is fairly high, giving an additional validity to the plants as a traditional remedy.

This study complements the on-going activities of evaluation of different uses of medicinal plants and the development of new Improved Traditional Medicine by the Phytomedicine unit of the Department of Plant Biology and Biotechnology in University of Benin. The performance index analytical studies was

carried on these plants in order to ascertain the effectiveness as well as the possible recommendation of the plants followed by designing therapeutic strategies based on the most effective and least reliable plants. Further studies in this direction are needed in future to document the information on other available medicinal plants used by the Idoma people for the treatment of various other diseases prevalent among them. It is hoped that this information will be of use in planning for future research in this direction.

CONCLUSION

The ethno pharmacology survey showed that medicinal plants are still widely used by the population in the study area. It allowed us to report 51 different diseases or ailments treated by the sixty three medicinal plants included in this survey. Several types of preparations of these plants were used. The plants grow over an extended area and are used by healers separated by long distances. This may explain the many different types of uses observed. The healers' consensus in the treatment of the main reported diseases is fairly high, giving an additional validity to the plants as a traditional remedy.

This study complements the on-going activities of evaluation of different uses of medicinal plants and the development of new Improved Traditional Medicine by the Department of Plant Biology and Biotechnology in University of Benin. The performance index analytical studies was carried on these plants in order to ascertain the effectiveness as well as the possible recommendation of the plants followed by designing therapeutic strategies based on the most effective and least reliable plants.

Author's contribution

Idu M conceived of the study, and participated in its design. Himself and EO Joseph spare headed the ethnobotany work. They travelled to Benue state, visited and interviewed the respondents in the course of this study while Ovuakporie- Uvo O helped to sort the information obtained from the survey, draft the manuscript and put the draft in the American Journal of Ethnomedicine publication format. All authors read and approved the final manuscript.

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Table 1. Citations of Medicinal Plants in the Households among the Idoma People

Ail	Scientific name of plant	Associated plant	Pl-part	Phar	Adm	Hh
Boi	*Acanthus montanus*		fr	ju	rob	2
Cou	*Acanthus montanus*		le	ma	dri	3
Dia	*Ageratum conyzoides*	with *Stachytarpheta indica, Sorghum bicolor*	le	co	dri/ bat	6
Hiv	*Ageratum conyzoides*		le	ma	dri	1
Ulc	*Ageratum conyzoides*		le	ma	dr	1
Fev	*Alchornea cordifolia*		le	co	dri	2
Dia	*Allium sativum*		bu	mas	mas	2
Antc	*Allium cepa*		bu	mas	mas	1
Sti	*Allium cepa*		bu	mas	mas	2
Cat	*Aloe vera*		le	ma	dro	3
Cons	*Aloe vera*		le	ma	rob	1
Dia	*Anacardium occidentale.*		st-ba	co	dri	9
Diar	*Anacardium occidentale.*		st-ba	co	dri	3
Abp	*Anacardium occidentale.*		st-ba	co	dri	2
Snb	*Anacardium occidentale.*		st-ba	ma	dri	2
Mal	*Anacardium occidentale.*	With *Mangifera indica, carica papaya, Chromolaena odarata.*	st-ba	co	dri	12
Tub	*Anacardium occidentalis*	with *Khaya ivorensis*	st-ba	co	dri	3
Coc	*Ananas comosus*		fr	de	dri	14
Coc	*Anthocleista djalonesis*		st-ba	de	dri	1
Fev	*Anthocleista djalonesis*		le	ma	dri	2
Mal	*Anthocleista djalonesis*		ro-ba	ma	dri	4
Dys	*Antrocaryon klaineanum*	with *B. micrantha, Treculia Africana*	st-ba	de	dri	1
Cho	*Azadirachta indica*	with *Ocimum gratissimum*	le	ma	dri	17
Dia	*Azadirachta indica*		st-ba	ma	dri	5
Mal	*Azadirachta indica*		yo-le	ma/mas	dri	13
Dys	*Bridelia micrantha*	with *Antrocaryon klaineanum*and *Treculia Africana*	st-ba	de	dri	1
Cou	*Bridelia micrantha*	with *Capsicum frutescens*	st-ba	ma	dri	4
Umc	*Bryophyllum pinnatum*		ju	inf	dro	7
Ear	*Bryophyllum pinnatum*		le	ma	dri	2
Cou	*Capsicum frutescens*	with *Bridelia micrantha*	fr	ma	dri	3
Mal	*Carica papaya*	with *Ananas comosus*	fru	ma	dri	11
Fev	*Carica papaya*	with *Ananas comosus*	fru	ma	dri	4
Coc	*Carica papaya*	with *Ananas comosus*	fru	ma	dri	2
Lac	*Ceiba pentandra*		st-ba	de	dri	2
Mal	*Chromolaena odarata*	with *Mangifera indica*	le	co	dri	9
Wou	*Chromolaena odarata*		le	mas	rob	5
Cata	*Citrus aurantifolia*		le	ma	rob	9

Pim	*Citrus aurantifolia*		fr	inf	rob	8
Ski	*Citrus aurantifolia*		fr	inf	rob	9
Jau	*Citrus limon*		fr	ma	dri	3
Eas	*Cochorus olitorius*		le	ma	dri	4
Inf	*Cochlospermum planchoni*	with *Tetrapleura tetraptera*	ro	ma	dri	1
Mea	*Cola acuminata*	with *Jatropha tanjorensis, Senna alata*	se	co	eat	4
Art	*Cola laurifolia*		se	mas	mas	5
Sex	*Costus lucanuscianus*		le	inf	dri	3
Too	*Daniella oliveri*		le	inf	to-in	2
Dia	*Dialium guineense*		le	inf	dri	2
Abp	*Dracaena arborea*		le	ma	dri	6
Antc	*Elaeis guineensis*		fr	inf	dri	2
Ear	*Elaeis guineensis*		yo-le	in	dro	5
Head	*Elaeis guineensis*	with *Scleria boivinii*	se	s-oil	rob	2
Cos	*Fuirena ciliaris*		se	no	bea	3
Sna	*Funtumia elastica*		sa	no	rob	2
Ana	*Gossypium hirsutum*		yo-le	de	dri	4
Mea	*Gossypium hirsutum*	with *Ocimum gratissimum*	yo-le	co	eat	2
Too	*Gossypium hirsutum*		jui	inf	was	3
Fev	*Irvingia gabonensis*		ro-ba	co	dri	2
Too	*Irvingia gabonensis*		st	no	che	4
Mea	*Jatropha tanjorensis*	with *Ocimum gratissimum*	yo-le	ma	eat	4
Sca	*Jatropha tanjorensis*		le	ma	dri	4
Tub	*Khaya ivorensis*	with *Anacardium occidentale*	st-ba	co	dri	3
Cos	*Lawsonia inermis*		le	po	ext	4
Mal	*Mangifera indica*	With *Anacardium occidentale, carica papya*	st-ba	co	dri	14
Fev	*Mangifera indica*	With *Anacardium occidentale, Musa paradisiaca, Carica papaya.*	st-ba	co	dri	11
Ear	*Manihot esculenta*		tu	inf	dro	3
Dia	*Momordica charantia*		fr	co	dri	2
I-hel	*Musa paradisiaca*		fr	co	dri	7
Fev	*Musa paradisiaca*	With *Anacardium occidentale, Mangifera indica, Carica papaya.*	d-le	co	dr	11
Fev	*Musa sapientum*	with *Mangifera indica, Anacordium occidentalis*	dr-le	co	dri	7
Wou	*Musa sapientum*		le	inf	rob	2
Epi	*Newbouldia laevis*		le	co	dri	2
Antc	*Nicotiana tabacum*		le	mas	dri	1
Cou	*Ocimum gratissimum*		le	po	dri	12
Gon	*Ocimum gratissimum*	Associated with *Vernonia amygdalina*	le	inf	rob	5
Stp	*Ocimum gratissimum*	with salt	le	ma	dri	12

Sex	*Ocimum gratissimum*	with *Vernonia amygdalina*	le	ma	dri	2
Sna	*Palisota ambigua*		st	po	rob	2
Ear	*Pandanus candelabrum*		le	inf	dro	1
Rhe	*Piper guineense*	with *Palisota hirsute* + extracter (alcohol or 7up)	fr	dec	dri	3
Fev	*Psidium guajava*	With *Carica papaya, Mangifera indica*	le	co	dri	6
Mal	*Psidium guajava*	With *Chromolaena odorata,*	le	co	dri	2
Lac	*Pycnanthus angolensis*	With *Solanumanguivi*	fr	de	dri	3
Head	*Scleria boivinii*	with *Elaeis guineensis*	ro	as	rob	3
Mis	*Senna alata*	With *Jatropha tanjorensis, Cola acuminata*	yo-le	co	dri	4
Con	*Senna occidentalis*		le	co	bat	4
Sca	*Senna podocarpa*		le	mas	rob	5
Fun	*Sida acuta*		le	inf	rob	9
Head	*Sida acuta*		le	ma	rob	1
Wou	*Sida acuta*		le	inf	rob	1
Lac	*Solanum anguivi*	with *Pycnanthusangolensis*	fr	de	dri	3
Pil	*Solanum tuberosum*		tu	ma	rob	1
Ski	*Solenostemon monostachyus*		le	inf	rob	1
Ana	*Telfairia occidentalis*		yo-le	ma	dri	3
Sna	*Terminalia superba*		st-ba	de	dri	4
Inf	*Tetrapleura tetraptera*	With *Cochlospermumplanchoni*	le	ma	dri	1
Dys	*Treculia Africana*	with *Bridelia stenocarpa*	st-ba	de	dri	1
Gon	*Vernonia amygdalina*	with *Ocimum gratissimum*	le	inf	rob	14
Ski	*Vernonia amygdalina*	with *Ocimum gratissimum*	le	inf	rob	9
Sca	*Vernonia amygdalina*	with *Ocimum gratissimum*	le	ma	Rob	7
Stp	*Vernonia amygdalina*	with salt	yo-le	ma	Dri	3
Bil	*Zingiber officinale*		tu	Scr	Mas	2
Eas	*Zingiber officinale*		le	scr	Dri	2

Hh = number of households where the specific usage (a citation) was cited

Ailments (Ail): Abp = Abdominal pain; Ana = Anaemia; Ant = Antidote; Antc = Anticonvulsion; Art = Arthritis; Bil = Bilhazia; Boi = Boils; Cat = Cataract; Cata = Catarrh; Chp = Chicken pox; Cho = Cholera; Coc = Common cold; Cons = constipation; Con = Contraceptive; Cos = Cosmetic; Cou = Cough; Cui = Cuisine; Dia = Diabetes; Diar = Diarrhoea; Dob = Dog bite; Dys = Dysentery; Ear = Ear-ache; Eas = Easy labour; Epi = Epilepsy; Fev = Fever; Fil = Filariasis; Fun = Funaria; Gon = Gonorrhoea/Syphilis; Hea = Head ache; Hiv = HIV/AIDS; Hyp = Hypertension; Inf = Infertility; Ins = Insecticide; I-hel = Intestinal helminthiasus; Jau = Jaundice; Lac = Lactation failure; Mal = Malaria; Mea = Measles; Mis = Miscarriage; Nau = Nausea; Ost = Osteoarthritis; Pil = Piles; Pim = Pimple; Poi = Poisons; Prp = Pregnant pain; Pur = Purgatives; Rhe = Rheumatism; Sca = Scabies; Sex = Sexual dysfunction; Ski = Skin infections; Ssc = Skin surface cleaning; Snb = Snake bite; Sps = Spider stings; Stm = Stimulant;

Stp = Stomach pains; Too = Toothache; Tub = Tuberculosis; Typ = Typhoid; Umc = Umbilical Cord; Vet = Veterinary; Ven = Venereal disease; Wai = Waist pain; Wou = Wound.
Major habitats= Sa = Swamp area; C_p = Cultivated plant; F_1 = Primary forest; F_2 = Secondary forest; O_p = Ornamental plant.
Plant part (Pl-part): bu = bulb; d-ba = dried bark; dr-le = dried leaf; flo = flower; fr = fruit; le = leaf; ro = root; ro-ba = bark of the root; sa = sap; se = seed; sp = spine; st = stem; st-ba = bar of the stem; tu = tuber; wo = wood; yo-le = young leaf.
Pharmaceutical form (Phar): as = ash; co = cooking; de = decoction; inf = infusion; ju = juice; ma = maceration (soak); mas = masticated; p-oil = palm oil; po = pounding; scr = scraping; scr + wa = scraping and warming; s-oil = seed oil; tr = tritured; no = not prepared.
Mode of administration (Adm): bat = general bath; dri = drinking; dro = dropping juice on part; eat = eating as soup; mas = mastigating orally; rob = robbing on the infected part; to-in = instillation in the teeth.

Table 2. Medicinal Plants Recorded among the Idoma and their Habitats

Plant species	Family	Major Habitat
Acanthus montanus(Nee) T. Andus	Acanthaceae	F_2
Ageratum conyzoides Linn.	Asteraceae	F_2
Alchornea cordifolia	Euphorbiaceae	F_2
Allium sativum L	Liliaceae	C_p
Allium cepa L.	Liliaceae	C_p
Aloe vera (L.) Burm f.	Asphodelaceae	O_p
Anacardium occidentale L.	Anacardiaceae	C_p
Ananas comosus (L) Merr.	Bromeliaceae	C_p
Anthocleista djalonensis A. Cheve.	Loganiaceae	O_p
Antrocaryon klaineanum Pierre	Anacardiaceae	F_1
Azadirachta indica A. Juss.	Meliaceae	O_p
Bridelia micrantha (Hochst) Baill.	Euphorbiaceae	F_1
Bryophyllum pinnatum (Lam) Oken.	Crassulaceae	F_1
Capsicum frutescens L.	Solanaceae	O_p
Carica papaya L.	Caricaceae	C_p
Ceiba pentandra (L.) Gaertn	Bombacaceae	F_2
Chromolaena odarata (L.)R. M. King & Robinson	Asteraceae	F_1
Citrus aurantifolia (Christm.) Swingle	Rutaceae	C_p
Citrus limon (L.) Burm. F.	Rutaceae	C_p
Corchorus olitorius L.	Tiliaceae	F_1
Cochlospermum planchonii Hook. f.	Cochlospermaceae	C_p
Cola acuminata (P. Beauv.)Schott & Endl.	Sterculiaceae	C_p
Cola laurifolia Mast.	Sterculiaceae	C_p
Costus lucanuscianus L.	*Zingiberareae*	F_1
Dialium guineense Willd.	Caesalpinioideae	F_2
Daniella oliveri (Rolfe) Hutch & Dalz.	Caesapiniodeae	O_p
Dracaena arborea (Willd.) Link	Agavaceae	F_1
Elaeis guineensis Jacq	Palmaceae	C_p

Fuirena ciliaris (Linn) Roxb.	Cuperaceae	C_p
Gossypium hirsutum L.	Malvaceae	O_p
Irvingia gabonesis (Aub.-Lec. Ex O'R) Bail.	Irvingiaceae	C_p
Jatropha tanjorensis Ellis & Sarojo	Euphobiaceae	O_p
Lawsonia inermis Linn	Lythraceae	F_1
Khaya ivorensis A. Chev.	Maliaceae	F_1
Mangifera indica L.	Anacardiaceae	C_p
Manihot esculenta Crantz	Euphorbiaceae	C_p
Momordica charantia L.	Cucurbitaceae	Sa
Musa sapientum(L)	Museaseae	C_p
Musa paradisiaca L.	Museaseae	C_p
Newbouldia laevis(P. Beaur)	Bignonaceae	O_p
Nicotiana tabacum L.	Solanaceae	O_p
Ocimum gratissimum L.	Lamiaceae	O_p
Palisota hirsuta (Thunb.) K. Schum	Commenlinaceae	F_1
Pandanus candelabrum P. Beauv.	Pandanaceae	F_1
Piliostigma thonningii (Schum.) Milne-Redhead	Caesalpinioideae	F_1
Piper guineense Schum & Thunn.	Annonaceae	Sa
Psidium guajava L.	Myrtaceae	C_p
Senna alata (L) Roxb.	Fabaceae	F_1
Senna occidentalis Linn.	Fabaceae	F_2
Senna podocarpa Guill & Perr	Caesalpinoideae	F_2
Sida acuta Burn.	Malvaceae	O_p
Solanum tuberosum	Solanaceae	C_p
Solenostemon monostachyus	Labiatae	F_1
Telfairia occidentalis Hook. f.	Cucurbitaceae	C_p
Tetrapleura tetraptera (Schumacher & Thonn.) Taub.	Mimosaceae	C_p
Vernonia amygdalina Del.	Asteraceae	C_p
Zingiber officinale Roscoe Engl	Zingibaraceae	C_p

Table 3. Ailments Recorded in the Interviews with the Idoma People

Group of Ailments	Ailments	Number of Citations
Cardiovascular system	Epilepsy	1
	Hypertension	4
	Stimulant	2
	Convulsion	4
	Cataract	7
Digestive system	Cholera	19
	Dysentery	17
	Diarrhoea	21
	Diabetes	26
	Stomach pain	132
	Purgatives/Laxative	12
	Intestinal helminthiasus	1
Female genital system: obstetrics and gynaecology	Lactation failure	4
	Contraceptive	9
	Miscarriage	32
	Easy labor	97
Male genitor-urinary system	Gonorrhea	25
	Syphilis	21
	Sexual dysfunction	56
	Infertility	34
Musculo-skeletal system	Rheumatism	96
	Waist pains	104
	Osteoarthritis	4
Parasitic diseases	Bilharzias	2
	Boils	26
	Chicken pox	7
	Cold	67
	Fever	243
	Filariasis	1
	HIV/AIDS	1
	Malaria	97
	Measles	3
	Typhoid	43
	Scabies	76
	Skin infections	66
	Toothache	33
	Piles	11
Respiratory system	Cough	207
	Tuberculosis	7
Specific conditions	Snake bite	32
	Poison	12
	Spider stings	6
	Dog bite	9
Specific symptoms	Anemia	3
	Wounds	72

	Ear-ache Head ache	54 31
Special cases	Veterinary Insecticide Cuisine Antidote Cosmetic	1 3 1 1 2
Total number of citations		1801

Table 4. Index of Performance of Medicinal Plants Used by the Idoma People in Benue State, Niger

	Anaemia	Bilhazia	Boils	Catarrh	Cataract	Constipation	Cholera	Common cold	Contraceptive	Cosmetics	Convulsion	Cough	Diabetes	Diarrhoea	Dog bite	Dysentery	Ear-ache	Easy labour	Epilepsy	Fever	Filariasis	Gonorrhoea	Head ache	HIV/AIDS	Hypertension	Infertility	Intestinal helminthiasus	Jaundice	Lactation failure	Malaria	Miscarriage	Measles	Osteoarthritis	Pimples	Piles	Poison	Purgatives/Laxative	Rheumatism	Scabies	Sexual dysfunction	Skin infections	Snake bite	Spider stings	Stimulant	Stomach pain	Syphilis	Toothache	Tuberculosis	Waist pains	Wounds	Ulcer	Veterinary	Total number of citation
Acanthus montanus	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Ageratum conyzoides	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	8
Alchonea cordifolia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Allium sativum	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Allium cepa	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1
Aloe vera	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Anacardium occidentale.	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	24
Ananas comosus	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Anthocleista djalonensis	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Anthocleista djalonensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Azadirachta indica	0	0	0	0	0	0	2	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35
Bridelia micrantha	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Bryophyllum pinnatum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Capsicum frutescens0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Carica papaya	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Ceiba tandra	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Chromolaena odarata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	14
Citrus aurantifolia	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	26
Citrus limon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Cochorus olitorius	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Cola acuminata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Cola laurifolia	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Costus lucanuscianus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Daniella oliveri	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Dracaena arborea	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6

	Anaemia	Bilhazia	Boils	Catarrh	Cataract	Constipation	Cholera	Common cold	Contraceptive	Cosmetics	Convulsion	Cough	Diabetes	Diarrhoea	Dog bite	Dysentery	Ear-ache	Easy labour	Epilepsy	Fever	Filariasis	Gonorrhoea	Head ache	HIV/AIDS	Hypertension	Infertility	Intestinal helminthiasis	Jaundice	Lactation failure	Malaria	Miscarriage	Measles	Pimples	Piles	Poison	Purgatives/Laxative	Rheumatism	Scabies	Sexual dysfunction	Skin infections	Snake bite	Spider stings	Stimulant	Stomach pain	Syphilis	Toothache	Tuberculosis	Waist pains	Wounds	Ulcer	Veterinary	Total number of citation
Eleais guineensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Funtumia elastica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Fuirena ciliaris	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Gossypium hirsutum	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	3	0	0	0	0	0	9
Irvingia gabonesis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	6
Jatropha tanjorensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Khaya ivorensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
Lawsonia inermis	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Mangifera indica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
Manihot esculenta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Momordica charantia	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Musa parasidiaca	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
Musa sapientum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	9
Newbouldia laevis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Nicotiana tabacum	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Ocimum gratissimum	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	0	31
Palisota ambigua	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Pandanus candelabrum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Piper guinense	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Psidium guajava	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Pycnanthus angolensis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Scleria boivinii	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Senna alata	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Senna occidentalis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Senna podocarpa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	5

	Anaemia	Bilnazia	Boils	Catarrh	Cataract	Constipation	Cholera	Common cold	Contraceptive	Cosmetics	Convulsion	Cough	Diabetes	Diarrhoea	Dog bite	Dysentery	Ear-ache	Easy labour	Epilepsy	Fever	Filariasis	Gonorrhoea	Head ache	HIV/AIDS	Hypertension	Infertility	Intestinal helminthiasus	Jaundice	Lactation failure	Malaria	Miscarriage	Measles	Pimples	Piles	Poison	Purgatives/Laxative	Rheumatism	Scabies	Sexual dysfunction	Skin infections	Snake bite	Stimulant	Stomach pain	Syphilis	Toothache	Tuberculosis	Waist pains	Wounds	Ulcer	Veterinary	Total number of citation
Sida acuta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	11
Solanum anguivi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Solanum tuberosum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Solenostemon monostachyus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Telfairia occidentalis	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Terminalia superba	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	4
Tetrapleura tetraptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Treculia africana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Vernonia amygdalina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	0	2	0	0	0	0	0	0	33
Zingiber officinale	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Total number of citation	3	2	26	7	7	2	19	67	9	2	4	207	26	21	9	17	54	97	1	243	1	25	31	1	4	34	1	6	4	97	32	3	4	11	12	12	96	76	56	66	32	2	132	21	33	7	104	72	2	1	1801

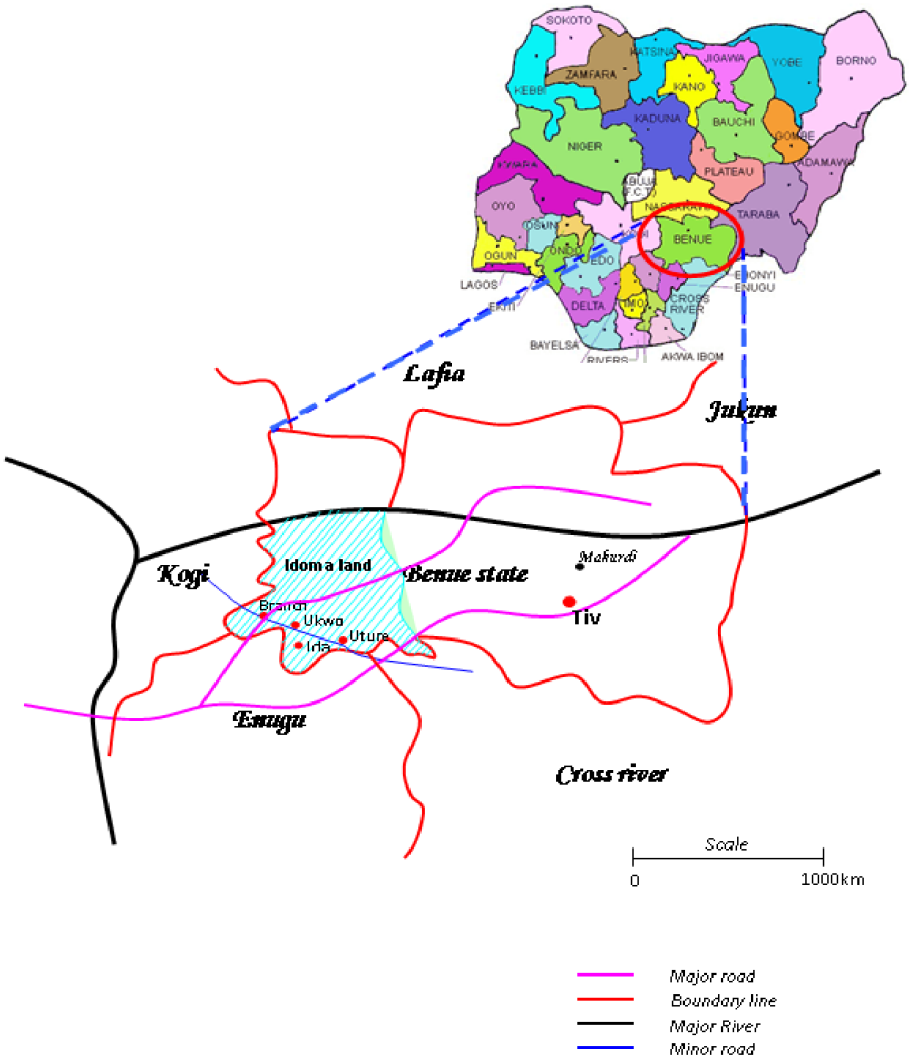

Figure 1. The map of Benue state showing Idoma land