



## ALTERNATIVE MEDICINAL PLANTS FROM PARI DISTRICT, KAURU LOCAL GOVERNMENT AREA OF KADUNA STATE

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*Manuscript Received: 12/08/2018 Accepted: 13/08/2018 Published: December 2018*

### ABSTRACT

An ethno-medicinal survey was carried out in October, 2017 to collate information on the medicinal plants used by the Chawai people of Kauru Local Government Area of Kaduna State. A 10m x 10m quadrat size was used to sample 8 plots, 200 metres apart. Oral interviews were conducted with Elders, Alternative Medicinal Practitioners, Hunters and women. Seventy-two (62) plant species were recorded and distributed across 31 families out of which 68 were used for alternative medicinal purposes and distributed according to the following families: Mimosoideae (12.90%), Anacardiaceae (9.68%), Caesalpinodeae (8.06%), Euphorbiaceae (8.06%), while Apocynaceae, Moraceae, Fabaceae and Rubiaceae showed (4.84%) each. The study revealed that the plant part mostly used are the roots when compared to the other parts of the plant (barks, leaves, stems, roots, fruits, seeds, latex and flowers). Latex and flowers were amongst the least parts used. There is the urgent need for more documentation of the traditional ethno-medicinal knowledge.

**Key Words:** *Ethno-medicinal Survey, Medicinal plants, common names, Chawai people.*

## INTRODUCTION

The use of herbal remedies has been widely embraced in many developed countries with complementary and alternative medicines (CAMs) now becoming the mainstream in many developing and developed countries of the world (Nissen, 2010). The most important among many other reasons for seeking herbal therapy is the belief that it will promote healthier living. Herbal medicines are therefore, often viewed as a balanced and moderate approach to healing and individuals who use them as home remedies and over-the-counter drugs spend huge amount of money on herbal products because of the awareness of its preference (Kong *et al.*, 2003 and Bandaranayake, 2006). About 80 percent of the world's populations depend on traditional medicine to meet their primary health care needs (Noor and Kalsoom, 2011).

Man has been dependent through the ages on nature for meeting his basic needs- Food, Shelter and Medicine (Suleyman *et al.*, 2015). More and more properties of plants have been identified leading to new uses. These developments led to the evolution of societies through cultural advancement embracing bioresources. Healthcare services in Nigeria are inadequate and unevenly distributed, and only a small number of health care provide a good health service. This deficiency has really contributed to the extremely high mortality ratio, which is among the highest in the world.

The use of plants and their resources for combating various ailments predates written history and they are still in use all over the world (Noor and Kalsoom, 2011). Some recent studies have shown that people living in rural areas still hold a valuable knowledge on food, fodder and medicinal plants and that some of these plants can act as crucial factors in livelihood strategies of indigenous communities (Urso *et al.*, 2016). Consequently, there is a compelling need to collect information about local ethno-botanical knowledge concerning how plants are used to maintain good health, as food, fodder and maintaining livestock health and welfare before it can be lost and become unavailable for future generations. Lambert *et al.*, (1997), have observed that the preservation and enhancement of indigenous plant knowledge is actually rescuing a global heritage. Since the advancement in the field of ethno-botany, importance of traditional ethno-botanical knowledge in the traditions and culture of rural populations have fully been realized and documented in most parts of the world. But in developing countries where populations are more dependent upon traditional ethno-botanical knowledge, the understanding of this

fact needs to be promoted (Ejaz, 2013).

Most medicinal, fodder plants and a few used as food are traditionally obtained from the wild, where they grow naturally (Singh *et al.*, 2010). However, as a result of many negative human and environmental factors, such as overharvesting, deforestation, desertification and global warming to mention a few, such plants are faced with the serious problem of extinction.

This study is therefore, aimed at identifying plant species in the wild that are collected for alternative medicinal purposes by the local people of Pari district, Kauru Local Government Area of Kaduna State.

## MATERIALS AND METHODS

This study was carried out in Pari District of Kauru Local Government Area of Kaduna State, Nigeria (10° 34'30" N 8° 09'01").

This study was conducted from mid-September to early October, 2017. Ethno-botanical data were obtained using oral interview method. The target groups for this study were traditional medicine practitioners, hunters, housewives, farmers and other people of old age who are very much familiar with the use of plants for medicinal purposes. Potential respondents were informed of the purpose of the study.

Field expeditions were conducted to collect plant specimens. Eight (8) sites were used to sample specimens using a 10m x 10m quadrat randomly laid with each quadrat at least 200m apart. Plant part used, habit, and classification of the plant were parameters documented. Identification of the plants was done in the herbarium of the Department of Plant Science and Biotechnology, University of Jos.

## RESULTS AND DISCUSSION

A total of 62 different plant species with at least one medicinal, food, fodder or other economic value to man and livestock were recorded and these were distributed across 31 families. Most of the plant species recorded belonged to the family *Mimosoideae*, which accounted for 8 species (12.90%) of the total plants species recorded. It is closely followed by the family *Anacardiaceae* which has 6 species (9.68%); *Caesalpinioideae* and *Euphobiaceae* with 5 species (8.06%) each. The families *Apocynaceae*, *Fabaceae*, *Moraceae* and *Rubiaceae* each had 3 species which cumulatively accounted for 14.51% of the total species recorded. Six families had 2 species representative while the remaining families have one species as shown in Figure 1.

Among the most important economic trees are the Kunyong (*Parkia biglobosa*), Kunchwangzi (*Vitex doniana*), Kunraghat (*Butrospermum parkii*), Kungwara (*Borassus aepithium*), Kunkarkan (*Balamite aegyptiaca*). Other important trees in the wild are: Kungwana (*Ficus platyphlla*), Kunrwam (*Paradonullia oliveri*), Gabaruwa (*Acacia arabica*), Loko (*Chorophora exelse*), Kungwata (*Khaya senegalensis*), Malmo (*Eugenia awariensis*), Kunya (*Diospyros mospiliformis*), Tsada (*Ximenia americana*). Other varieties of large plants, which grow in colonies, are the Kungwab, Gwangwala used by the people.

The fruits, roots, leaves, barks, stems and fibers of the different trees and shrubs have been important sources of food, medicine and materials for weaving. The fruits of Kunrayan for instance, have been very useful in the preparation of food, especially porridge, as well as for medicinal purposes and as a source of refreshing drinks. Similarly, the bark of Kungwata, when boiled in water has been a cure for many stomach disorders. The bark of Kunbwon and Cediya (*Ficus thonningii*), have not only been used for ropes, the roots and leaves have also been utilized for medicinal purposes.

Remarkably, all the plant species recorded in this study have at least one medicinal value or the other. The family Mimosoideae has more members with medicinal values with all the plants in the family having at least one medicinal value. At least one or more parts of the 8 plants recorded in the family are used for medicinal purposes. The study revealed that, the locals use roots and the bark of plants more than any other parts for medicinal purposes. Ayyanar and Ignacimuthus (2011) have observed that plant leaves were used more than the other plant parts for medicinal purposes in India. However, it was also observed that the leaves are mostly used in combination with other plant parts and/or additives in the form of infusion, decoction, and tincture or even in powdered form. The leaves of 38 out of the 62 plant species recorded for their medicinal value are used in the treatment of various ailments. Ayyanar and Ignacimuthus (2011) have also reported the high frequency of the use of leaves above the other plant parts in the treatment of ailments in West Ghats, India. Closely following the leaves, is the fruit, seed, stem, latex and flower in that order, with 15 (24.19%), 7 (11.29%), 6 (9.68%), 4 (6.45%) and 1 (1.61%) respectively of the 62 plant species used for medicinal purposes.

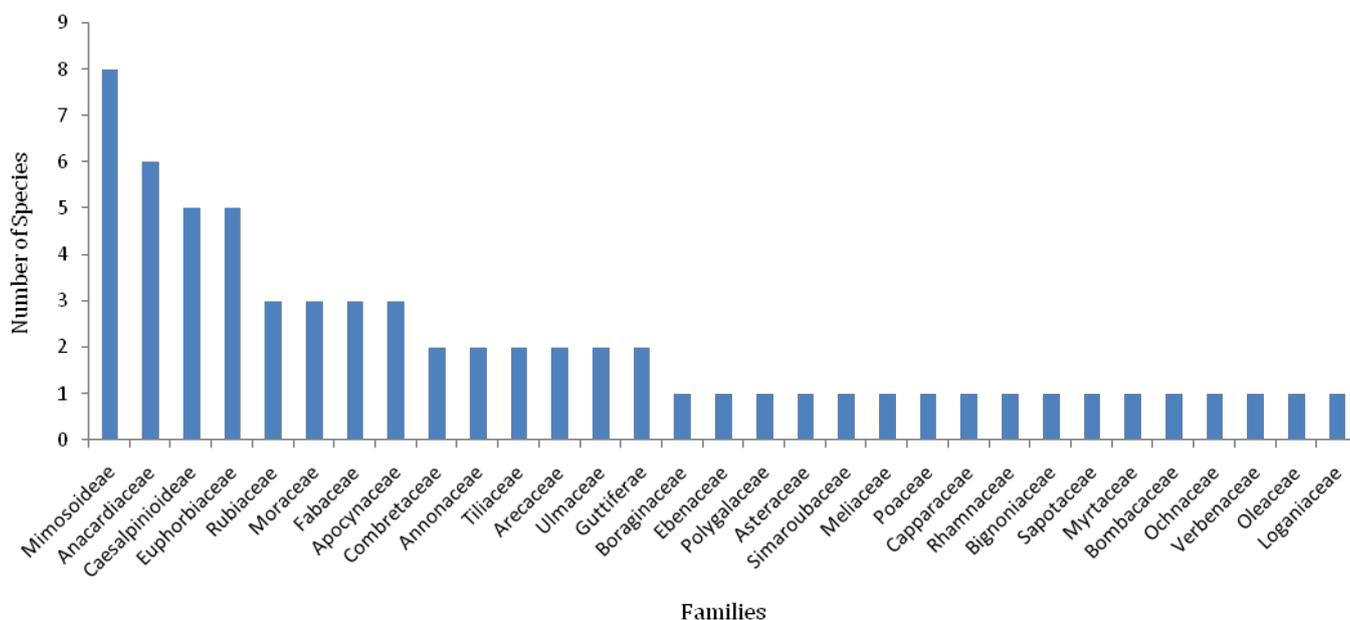


Figure 1: Plant families and number of species collected during the study.

Table 1: List of Plants used for Medicinal Purposes

S/N	Chawai Name	English Name	Botanical Name	Family	Part of Plant	Uses
1	Ruruap	Finger root	<i>Uvariachamae</i>	Annonaceae	Bark	Dysentery
					Leaf	Yellow fever
					Root	Headache,
2	Wieent	African Locust bean	<i>Parkia biglobosa</i>	Mimosoideae	Flower	Leprosy
					Bark	Pneumonia
					Root	Diarrhoea
					Stem	Snake bites
					Seed	Aphrodisiac
3	Dundu	Marabou thorn	<i>Dichrostachyscinerea</i>	Mimosoideae	Bark	Cough
					Leaf	Anti-venom
					Root	Bathing nursing mothers
4	Buum	Yellow Gardenia	<i>Gardenia erubescens</i>	Rubiaceae	Bark	Gonorrhoea
					Root	Syphilis
5	Zongree	Violet tree	<i>Securidaca Longependunculata</i>	Polygalaceae	Bark	Filariasis
					Leaf	Amenorrhoea
					Root	Snake bite
6	Gamu	Wild grape	<i>Lannea humilis</i>	Anacardiaceae	Root	Typhoid
7	Peet	Raisin fruit Keetia	<i>Keetiavenosa</i>	Rubiaceae	Leaf	Rheumatism
					Root	Blood tonic
8	Tsori		<i>Terminalia glaucescens</i>	Combretaceae	Fruit	Vermifuge
					Leaf	Cough
					Root	Pain relief
9	Monvoi	Ashanti plum	<i>Spondiasmonbin</i>	Anacardiaceae	Fruit	Diarrhoea
					Leaf	Dysentery
					Root	Conjunctivitis
10	Chuanzii	Black plum	<i>Vitex doniana</i>	Verbenaceae	Bark	tooth-ache
					Leaf	chicken pox
					Root	Jaundice
11	Chuanzii sang	Shea-butter tree	<i>Vitellaria paradoxa</i>	Sapotaceae	Bark	Dysentery
12	Rigit	Red oak	<i>Lophiralanceolata</i>	Ochnaceae	Bark	Jaundice
					Fruit	Leprosy
					Leaf	Headache
					Root	Vomiting
					Stem	tooth decay
13	Kuntsur		<i>Ancylobotrysamoena</i>	Apocynaceae	Fruit	Wound
					Latex	Conjunctivitis
14	Sisa	Custard apply	<i>Annona squmosa</i>	Annonaceae	Fruit	Dysentery
					Leaf	Diabetes
					Root	Purgative
					Seed	Abortifacient
15	Kanbizi		<i>Entadaabyssinica</i>	Mimosoideae	Bark	cough
					Root	malaria
					Seed	conjunctivitis

S/N	Chawai Name	English Name	Botanical Name	Family	Part of Plant	Uses
16	Gborong		<i>Bredeliamicrantha</i>	Euphobiaceae	Bark	antibacteria
					Leaf	tooth decay
					Root	fungicide
17	Huwarak	Blood plum	<i>Haematostaphisbarteri</i>	Anacardiaceae	Bark	lavative
18	Yarya	Tamarind	<i>Tamarindusindica</i>	Caesalpinioideae	Bark	purgative
					Fruit	vermifuge
					Leaf	constipation
					Root	paralysis
					Stem	bronchitis
19	Rumpu		<i>Albiziacoriaria</i>	Mimosoideae	Bark	vomiting
					Root	disinfectant
20	Bribas	African peach	<i>Sarcocephaluslotifolius</i>	Rubiaceae	Fruit	constipation
					Leaf	cancer
					Root	tooth decay
21	Gwain		<i>Lanneabarteri</i>	Anacardiaceae	Bark	wound
					Fruit	ricketts
22	Kunvu	Monkey ball tree	<i>Strychnos spinosa</i>	Loganiaceae	Bark	Otitis
					Leaf	analgesic
					Root	tranquilizing
					Seed	emetic
23	Kunvuam		<i>Harunganamadagascanriensis</i>	Guttiferae	Bark	skin disease
					Leaf	dysentery
					Root	
24	Rhonzi	Fish poison beans	<i>Tephrosiavogelii</i>	Fabaceae	Root	tooth decay
25	Kritkan	GrewiamollisJuss	<i>Grewiavenusta</i>	Tiliaceae	Bark	laxative
					Fruit	Hiccup
					Leaf	Wound
					Root	Tranquilizing
26	Buaba		<i>Jasminiumdichotonum</i>	Oleaceae	Leaf	Ulcer
27	TsoriNwu		<i>Bredeliamicrantha</i>	Euphorbiaceae	Bark	Abortifacient
					Leaf	Malaria
					Root	Boil
28	Kunkwap	West African bamboo	<i>Oxytenantherabyssinica</i>	Poaceae	Leaf	Diabetes
29	Raka	Roka	<i>Trichiliaemetica</i>	Meliaceae	Bark	Purgative
					Fruit	Diuretic
					Leaf	Headache
					Root	Vermifuge

S/N	Chawai Name	English Name	Botanical Name	Family	Part of Plant	Uses
30	Kanyupi		<i>Tremaorientalis</i>	Ulmaceae	Bark	sore throat
					Leaf	Analgesic
31	Karbanya	Benin rope acacia	<i>Acacia ataxacnata</i>	Mimosoideae	Bark	tooth decay
					Leaf	Analgesic
32	Kunguya		<i>Stereospermumkunthianum</i>	Bignoniaceae	Bark	Leprosy
					Leaf	Gastritis
					Root	Diuretic
33	Tsanlek	Red kapok tree	<i>Bombax costatum</i>	Bombacaceae	Bark	use to ease childbirth
					Leaf	Oedema
					Root	Epilepsy
34	Nyapis		<i>Lanneamicrocarpa</i>	Anacardiaceae	Bark	Amenorrhoea
					Leaf	Dysentery
35	Naskoki		<i>Saba senegalensis</i>	Apocynaceae	Leaf	chronic headache
					Root	Blennorrhoea
					Stem	Leprosy
					Seed	Colic
36	Fain barka	Coral tree	<i>Erythrina senegalensis</i>	Fabaceae	Bark	Malaria
					Leaf	Ulcer
					Root	antiabortifacient
37	Nakaniyu		<i>Albiziachevalieri</i>	Mimosoideae	Bark	Vermifuge
					Leaf	Dysentery
38	Huent	Carisse	<i>Carissa edulis</i>	Apocynaceae	Root	Tonic
39	Chichap		<i>Croton zambesicus</i>	Euphorbiaceae	Bark	Malaria
					Leaf	Fortifier
					Root	dysmenorrhoea
40	Sisik	Barbados nut	<i>Jatropha curcas</i>	Euphorbiaceae	Fruit	high blood pressure
					Root	Syphilis
					Seed	Contraceptive
41	Kakayan	West African copal	<i>Daniella oliveri</i>	Caesalpinoideae	Root	migraine headache
					Leaf	Burns
					Root	Blennorrhoea
42	Jajan	Siamese cassia	<i>Senna siamea</i>	Caesalpinoideae	Leaf	Cancer
					Root	sore throat

S/N	Chawai Name	English Name	Botanical Name	Family	Part of Plant	Uses
43	Karmanya	Sandpaper tree	<i>Ficusasperifolia</i>	Moraceae	Bark	Circumcision
					Latex	Pains
					Leaf	Abortifcent
					Root	Cough
44	Wasisik		<i>Syzygiumguineense</i>	Myrtaceae	Bark	Paralysis
45	Bindiga		<i>Grewia bicolor</i>	Tiliaceae	Bark	Syphilis
					Stem	Flatulence
46	Funrua		<i>Ziziphismucronata</i>	Rhamnaceae	Bark	Leprosy
47	Guaras		<i>Cassia sieberiana</i>	Caesalpinioideae	Fruit	Vermifuge
					Root	Laxative
48	Gedabarka		<i>Acacia nilotica</i>	Mimosoideae	Bark	Boil
					Root	tooth decay
					Seed	Haemorrhoid
49	Nashobi		<i>Leucaena leucocephala</i>	Mimosoideae	Bark	eye diseases
					Root	Abortifcent
50	Kanrat		<i>Boscia senegalensis</i>	Capparaceae	Bark	Rheumatism
					Fruit	Syphilis
					Leaf	Jaundice
					Root	sexual impotence
51	Perigozi		<i>Lonchocarpuscyanescens</i>	Fabaceae	Leaf	Rheumatism
					Root	Ulcer
52	Kunsalek		<i>Hannoa undulate</i>	Simaroubaceae	Bark	Emetic
					Leaf	Jaundice
53	Koki		<i>Piliostigmathonningii</i>	Caesalpinioideae	Bark	red dye
					Fruit	Laxative
54	Nyu		<i>Cordia sinensis</i>	Boraginaceae	Bark	Astringent
					Leaf	Fever
					Root	Abortifcent
55	Targween		<i>Ficusingens</i>	Moraceae	Bark	Tonic
					Root	Fractures
56	Mansaras		<i>Anogeissusleiocarpus</i>	Combretaceae	Bark	Infantile
					Root	Hernia
57	Rata		<i>Brideliascleroneura</i>	Euphorbiaceae	Bark	Fever
					Root	tooth decay

S/N	Chawai Name	English Name	Botanical Name	Family	Part of Plant	Uses
58	Fufinbarka		<i>Vernonia amygdalina</i>	Asteraceae	Bark	Diarrhea
					Root	Purgative
59	Piess		<i>Psorospermum febrifugum</i>	Guttiferae	Bark	Wound
					Latex	skin disease
					Stem	Diuretic
60	Hud		<i>Rheus natalensis</i>	Anacardiaceae	Leaf	Boil
					Root	Influenza
61	Deli		<i>Phoenix reclinata</i>	Arecaceae	Leaf	eye disease
					Root	Astringent
62	Gurgwad		<i>Alchorneacordifolia</i>	Ebenaceae	Bark	Antibiotics
					Latex	skin disease
					Leaf	mental illness
					Root	Tuberculosis
					Fruit	

The plants used for medicinal purposes are used either singly or in combination with other plants and/or additives in form of infusion, decoction, and tincture or even in powdered form. Some of the ailments claimed to have been treated include: typhoid fever, snake bite, infertility, cancer, stomach ache, convulsion, mental illness, dysentery, pile, hypertension, measles, etc. The highest numbers of species with medicinal values were found in the family Mimosoideae with 8 species, followed by Anacardiaceae with 6 species and Caesalpinioideae and Euphobiaceae with five species each, while the least representation of one species each were found in 17 families (Figure 1). This trend was also observed in the work of Ibrahim *et al.*, (2010) in a study carried out in Sabo-Wuse in Niger State and Soladoye *et al.*, (2010) where the highest number of species of medicinal plants were found in the family Mimosoideae. The species that were mentioned most during the interviews for treatment of ailments was 'Koki' (*Piliostigma thonningii*) which is used in the treatment of pneumonia, stomach upset and as a laxative by the locals.

Malaria which is commonplace, had a considerable number of plants species for the treatment and/or control. Plants such as *Entada abyssinica*, *Bridelia micrantha*, *Erythrina senegalensis*, *Croton zambesicus* and many more are used in the treatment of malaria. The plant part mostly collected by the inhabitants and traditional medicine practitioners (TMP) for management of the conditions reported were the roots with 47 (75.81%) and the bark with 43 (69.35%) out of the 62 different plant species recorded in this survey (Table 1). This

appears to be in variance with the report of Pan *et al.*, (2013) and Ayyanarand Ignacimuthus (2011) that the leaves were the plant part mostly used to treat ailments. It means therefore, that different plant parts may be used by different tribal groups for the treatment of ailments. The next plant part is nevertheless, the leaves accounting for 38 (61.29%) plant species. It was also observed that the leaves were mostly used in combination with other plant parts and/or additives in form of infusion, decoction, and tincture or even in powdered form. Other plant parts such as the fruit, seed, stem, latex and flower were used for medicinal purposes too (Table 1).

## CONCLUSION

Different ethnic groups seem to use different plant parts in different proportions for the treatment of sicknesses and diseases. From the results of this current study, there is a high preference for use of the local or alternative traditional medicine because it constitutes a cheap source of solving health-related problems and is also a very important source of food. The results reveal that the inhabitants of this community use not less than 62 plant species for alternative medicinal purposes. In view of this, there is the need for further ethno-medicinal studies for incorporation of this indigenous knowledge in orthodox pharmacological utilization for prospective formulation of potential new drugs.

## ACKNOWLEDGEMENT

We wish to thank Rev. (Dr) Reuben L. Turbi and Joseph I. Izang for their different roles in the sample collection.

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