



## **A SURVEY OF MAJOR ETHNO MEDICINAL PLANTS OF KANO NORTH, NIGERIA, THEIR KNOWLEDGE AND USES BY TRADITIONAL HEALERS**

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### **ABSTRACT**

***An ethno botanical survey of major ethnomedicinal plants was carried out in the study area (Kano north senatorial district, Nigeria), their knowledge and uses by the local healers was determined. Data was obtained through the use of interviewer administered questionnaires, distributed at random to the traditional healers as the target respondents. Research shows that various plant species from 25 families were reported to be used in the treatment of various human ailments. Majority of these plants (73.2%) were wild, and 40% were harvested mainly for their leaves. Most of the plants were trees (44%). About 45.2% have been reported to be used in dry form. Concoction was the major method of preparation of the medicinal plants (46%). The most reported threat to the availability of medicinal plants was deforestation (43.6%). Many additives like edible oil, honey, butter, porridge, garlic were used in almost 58% of the remedy preparations. In addition, more than one medicinal plant species were used more frequently than the use of single species for medicinal preparations.***

***Keywords: Ethnobotany, Senatorial zone, Knowledge, Use.***

### **INTRODUCTION**

According to the world health organisation (WHO), more than 80% of the world population relies on traditional medicine for their primary health care (Veeramuthu 2006). Use of herbal medicine in Nigeria represents a long history of human interaction with the environment. Plants used in traditional medicine contain a wide range of substances that can be used to treat chronic as well as infectious diseases. A vast knowledge of how to use the plants against various illness may be expected to be accumulated in areas where the use of medicinal plants is still of great importance ( Diallo, 1999 ).

Rural communities in particular depend on plant resources mainly for herbal medicine, food, forage, construction of dwellings making household implement and fuel and shade (Veeramuthu 2006). The use of medicinal plants as traditional medicine is well known in rural areas of many developing countries. Traditional healers claim that their medicine is cheaper and more effective than modern medicine. The indigenous traditional knowledge of medicinal plants of various communities where it has been transmitted orally for centuries is fast disappearing due to the advent of modern technology and transformation of traditional culture. Moreover, traditional healers are also decreasing in number and the younger generation are not interested to carry on this tradition and in most cases the knowledge has not been recorded, as such there is great danger that this cultural heritage and basis for future research may be lost forever. Therefore it becomes the

responsibility of the scientific community to unravel this information and to document it for availability to the whole world for the benefit of human beings (Rajadurai, 2004). The Hausa land like Kano is not left behind in the use of ethno medicinal plants where various groups of herbalist or consultant use different varieties of plants in the treatment of physical, mental, and social diseases. The healers may be sedentary or mobile, the latter following a regular circuit within a periodic market or moving randomly from village to village (Jinju, 1990). This paper was aimed at determining and assessing the major ethno medicinal plants of the study area so as to document the indigenous knowledge and use of ethno medicinal plants by local healers to treat various human ailments in the study area.

### **MATERIALS AND METHODS**

An ethno botanical survey was conducted in the study area (Kano north senatorial district), located between latitude 10°-30°N and 13°-15S. It has the Sudan savannah type of climate and vegetation that gives way to semi arid condition. The area is part of Hausa land where ethno medicine is recognised and highly practiced (Hussain and Deeni 1991). The area comprises of about thirteen local government areas. However, five local governments were selected based on geographical spread, namely Dambatta, Tsanyawa, Tofa, Gezawa, and Gwarzo. Data was collected through the use of interviewer administered questionnaires, and oral interviews with traditional herbalists as the target respondents.

Two hundred and fifty (250) questionnaires were administered at random within the study area, and same number of questionnaires were retrieved. Data on human ailment treated by the use of plants, name of plant, habit of plant, degree of management, plant part used, how plant part is used, method of preparation for medicinal use, mode of administration, reported threat to the availability of medicinal plants were all recorded. Data was analysed using descriptive statistics. Chi square test was also employed to find the relationship with regard to their degree of management, plant part used, how plant part is used, mode of preparation and administration.

### RESULTS

Results showed that various plant species from 25 families were reported to be used in the treatment of various human ailments in the study area (Table 1). Majority of the plants (73.2%) were wild, whereas few number of species (8.8%) of the reported medicinal plants were cultivated, and other species constituting (18%) were indicated as wild/cultivated (Figure 3). Significant difference was observed in the degree of management ( $\chi^2 = 501.9$ ,  $df = 2$ ,  $\alpha = 0.05$ ,  $p$  value = 5.991). Result also shows that the plants growth form and habit were trees (with 44%), shrubs (26.4%) and herbs (29.6%) (Figure 2). Most of the reported medicinal plants (about 40%) were harvested for their leaves. With regards to mode of preparations, preparation from the roots constitutes (12.8%) stem (27.2%), flower/seeds (8%), while complete plants have been reported to be used also (12%) (Figure 4).

Plant parts used in the medicinal preparation shows significant difference ( $\chi^2 = 601.2$ ,  $df = 4$ ,  $\alpha = 0.05$ ,  $p$  value = 9.488). About 45.2% of the medicinal plants have been reported to be used in dry form, 33.2% fresh form, relatively few (21.6%) were reported to be used in fresh and dried form (Figure 5). Various preparations have been reported to be used with concoction taking the highest percentage of 46%, decoction (22.8%), steaming (8.8%), infusion (13.6%), other preparations constitute only 8.8% (Figure 6). There was significant difference observed in the mode of medicinal preparations of the medicinal plants in the study area ( $\chi^2 = 592.76$ ,  $df = 4$ ,  $\alpha = 0.05$ ,  $p$  value = 9.488). Based on the information gathered, the most reported method of application was oral (67.6%), topical (25.2%) and sniffing/inhaling (7.2%) (Figure 7). Significant difference was also observed with regard to the mode of administration of the medicinal preparations ( $\chi^2 = 375.1$ ,  $df = 2$ ,  $\alpha = 0.05$ ,  $p$  value 5.991). The most reported threat to medicinal plants in the study area were deforestation (43.6%), fire (30%), pests and diseases (9.6%), while 16.8% were reported to face no threat to their availability (Figure 8).

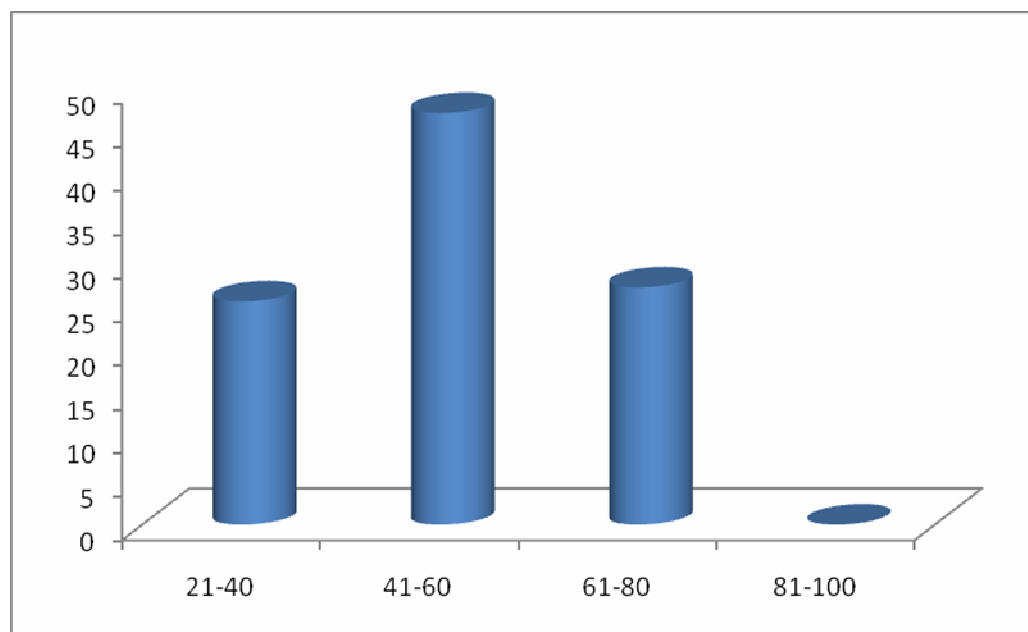
Many additives like edible oil, honey, porridge (Fura), butter (man shanu) and garlic were used in addition to the plant parts in almost 58% of the remedy preparation. Moreover, more than one medicinal plant species were used more frequently than the use of single species for medicinal preparation.

**Table 1: Some major ethnomedicinal plants of Kano North, their Botanical/local Names, Part used, and Medicinal uses**

Plant name (Botanical)	Local name	Family	Part used	Medicinal uses
<i>Acacia ataxacantha</i>	Bagaruwar kasa	Lutraceae	Whole	excessive cough, and yellow fever.
<i>Allium sepa</i>	Albasa	Liliaceae	Stem bulb	Hypertension, measles and cough
<i>Allium sativum</i>	Tafarnuwa	Liliaceae	Stem bulb	Catarrh, cold, cough
<i>Anogeissus leiocapus</i>	Marke	Combretaceae	Stem-bark	Stomach trouble, cough, diarrhoea
<i>Annona senegalensis</i>	Gwandar daji	Anonaceae	Stem	Snake bite, hernia
<i>Azadiracta indica</i>	Darbejiya	Meliaceae	Leaf	Yellow fever
<i>Boswellia dalzelia</i>	Hano	Balnitaceae	leaf	Yellow fever
<i>Boswellia odorata</i>	Ararrabi	Burceraceae	Stem	Malaria in children, pile, yellow fever, haemorrhoid
<i>Calotropis procera</i>	Tumfafiya	Asclepiadaceae	leaf	Scorpion sting, finger ache (witlow)
<i>Cassia italica</i>	Filasko	Legumenoceae	leaf	Cold (running nose), Rheumatism
<i>Cassia singuena</i>	Runfu	Caesalpinaceae	Leaf/root	Stomach ache, Cancer
<i>Cassia tora</i>	Tafasa	Legumenoceae	Leaf	Pile and stomach trouble
<i>Cassia occidentalis</i>	Rai-rai	Legumenoceae	Leaf	Rheumatism
<i>Cochlerspernum tinctorium</i>	Rawaya	Cochlospermeceae	Root	Yellow fever
<i>Combretum micranthum</i>	Geza	Combretaceae	Leaf	Dysentry, abdominal pain in nursing mother
<i>Curcubita maxima</i>	Kabewa	Curcubitaceae	stem	Skin diseases
<i>Dichrostachys peneria</i>	Dundu	Legumenoceae	Leaf	Tooth ache

**Table 1 continue**

Plant name (Botanical)	Local name	Family	Part used	Medicinal uses
<i>Diospyros mesipiliformis</i>	Kanya	Ebanaceaea	Fruits	pile and haemorrhoid
<i>Entandra africana</i>	Tawatsa	Legumenoceae	Root	Gonorrhoea and abdominal pain in woman
<i>Erythrina senegalensis</i>	Minjirya	Papilionaceae	Stem	Yellow fever
<i>Euphorbia hirta</i>	Nonon kurciya	Euphorbiaceae	Stem	Dandruff, sores in the mouth
<i>Ficus thoningii</i>	Chediya	Moraceae	Leaf	Stomach offset
<i>Ficus abustifolia</i>	Yandi	Moraceae	Leaf	Oedema
<i>Ficus ingens</i>	Kawari	Moraceae	Stem	Diarrhoea
<i>Ficus platyphylla</i>	Gamji	Moraceae	Stem-bark	Stomach trouble and pile
<i>Gueria senegalensis</i>	Sabara	Combretaceae	Leaf	Dysentery, diarrhoea, pile and stomach ach.
<i>Lanea acida</i>	Faru	Anacardiaceae	Stem bark	Yellow fever and pile
<i>Lowsonia inermis</i>	Lalle	Lythraceae	Root	Vomiting, abortion and witlow
<i>Leptademia hastata</i>	Yadiya	Asclepidaceae	whole	Hypertension, catarrh and skin diseases
<i>Mitracarpus scaber</i>	Gogamasu	Rubiaceae	Whole	Eczema and other skin Diseases
<i>Myterus senegalensis</i>	Namijin tsada	Celastraceae	Leaf	Asthma, cough, remedy for sores on tongue
<i>Perinaria macrophylla</i>	Gawasa	Chrysobalanaceae	Stem bark	Stomach trouble
<i>Prosopis africana</i>	Kiryra	Mimoceae	Stem/pod	Pile and haemorrhoid
<i>Piliostigma reticulata</i>	Kalgo	Legumenoceae	Stem	Pile, cough
<i>Phoenix dactylifera</i>	Dabino	Palmae	Fruit/seed	Worms, bleeding
<i>Steruspernum kunthianum</i>	Sansami	Bignoniaceae	Stem	Yellow fever
<i>Sarcocephalus russegeri</i>	Tafashiya	Rubiaceae	Stem	Yellow fever and tuberculosis
<i>Sclerocarya birrea</i>	Danya	Anacardiaceae	Stem bark	Diarrhoea, pile
<i>Strycnosa spinosa</i>	Kokiya	Loganiceae	Fruit	Eye ache
<i>Hankufa</i>	Sterculaceae	Root	Root	Dysentery and other stomach offset



**Figure 1: Age distribution of the respondents surveyed in the Kano North senatorial district (2010)**

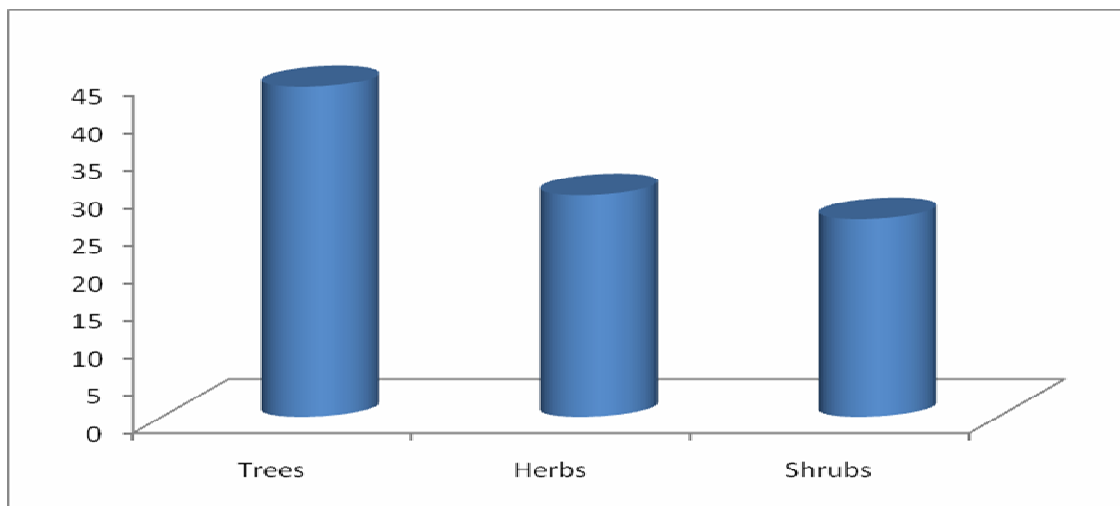


Figure 2: Growth form and habit of reported medicinal plants surveyed in the Kano North Senatorial district (2010).

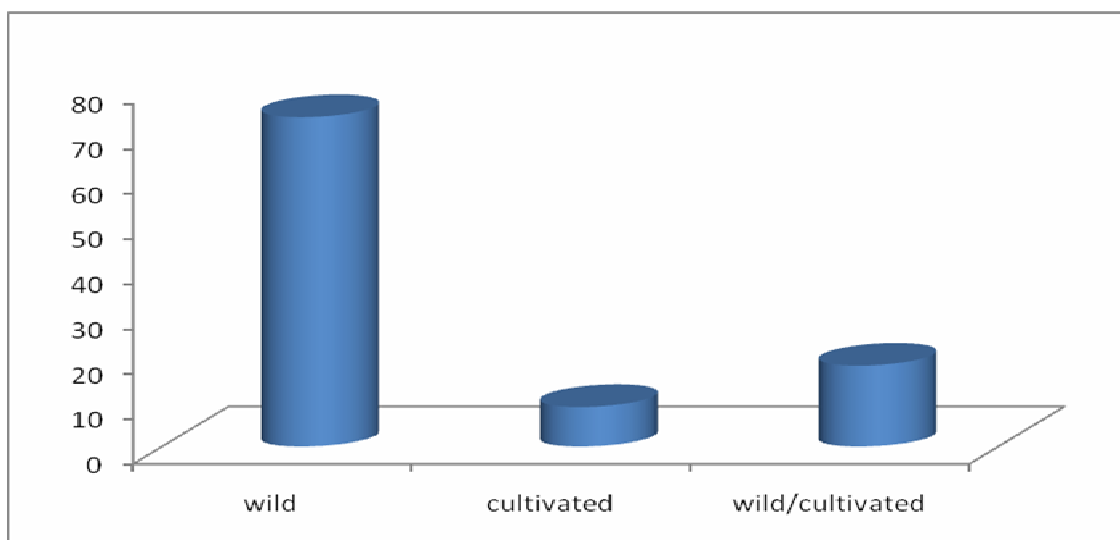


Figure 3: Degree of management of medicinal plants in Kano North Senatorial districts surveyed (2010).

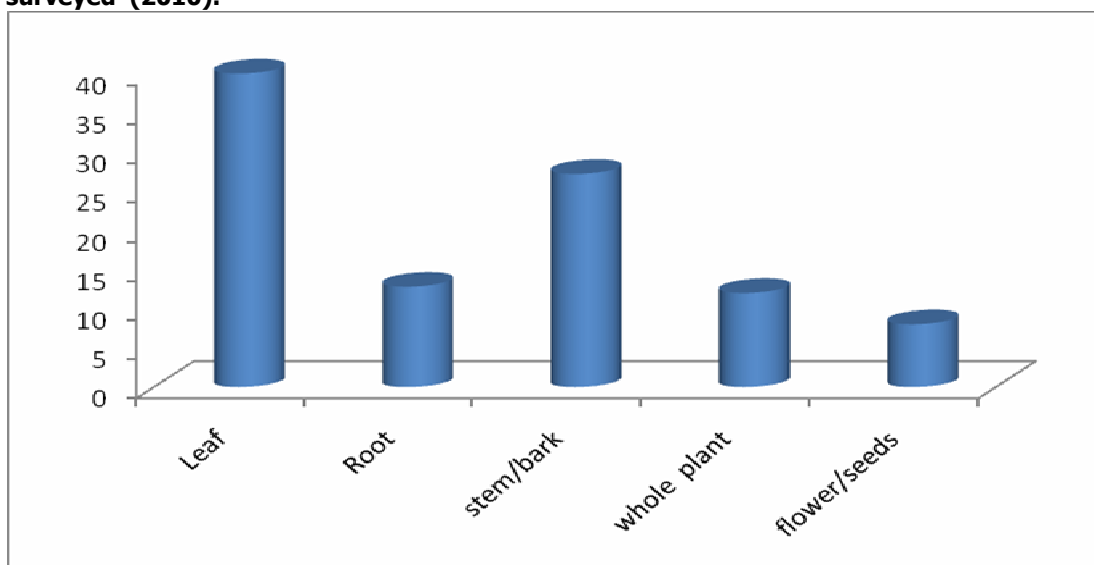
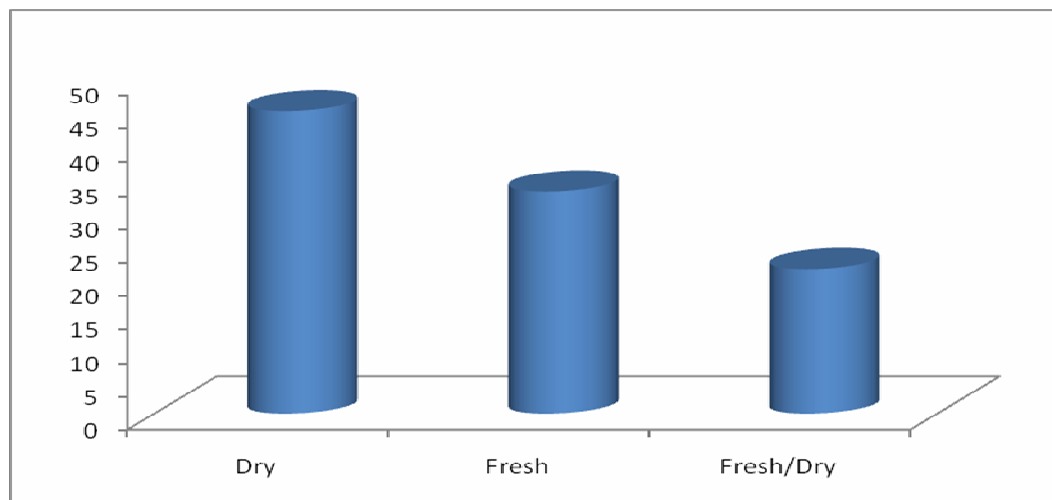
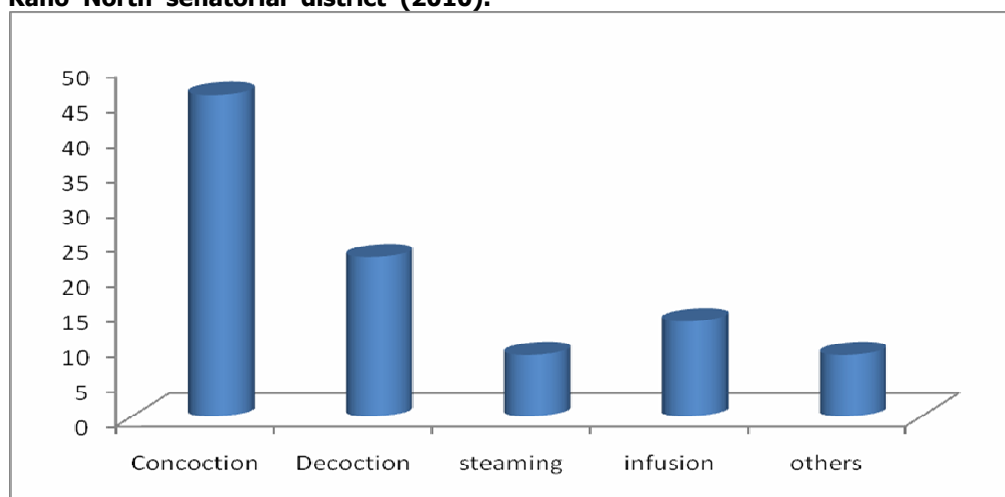


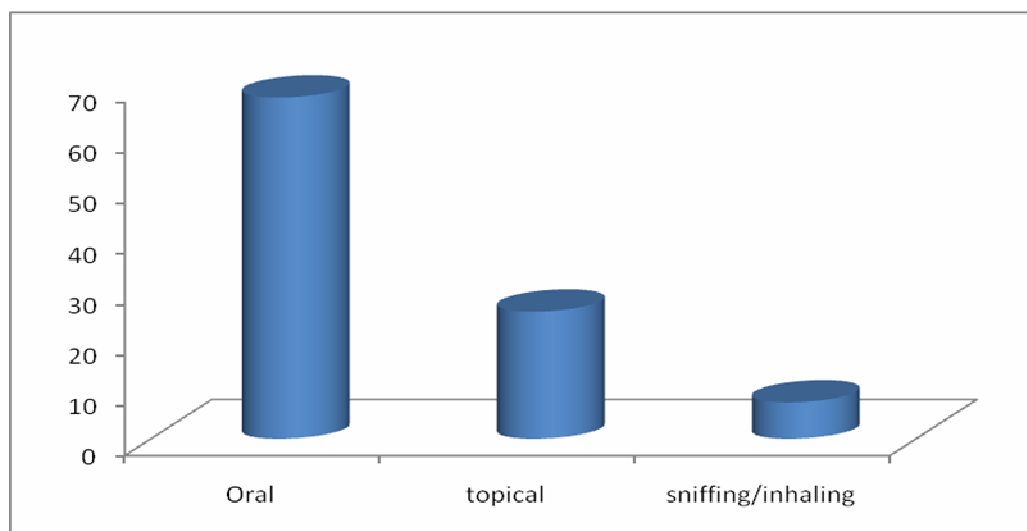
Figure 4: Part of plant used in ethnomedicinal preparations, surveyed in Kano North Senatorial district (2010).



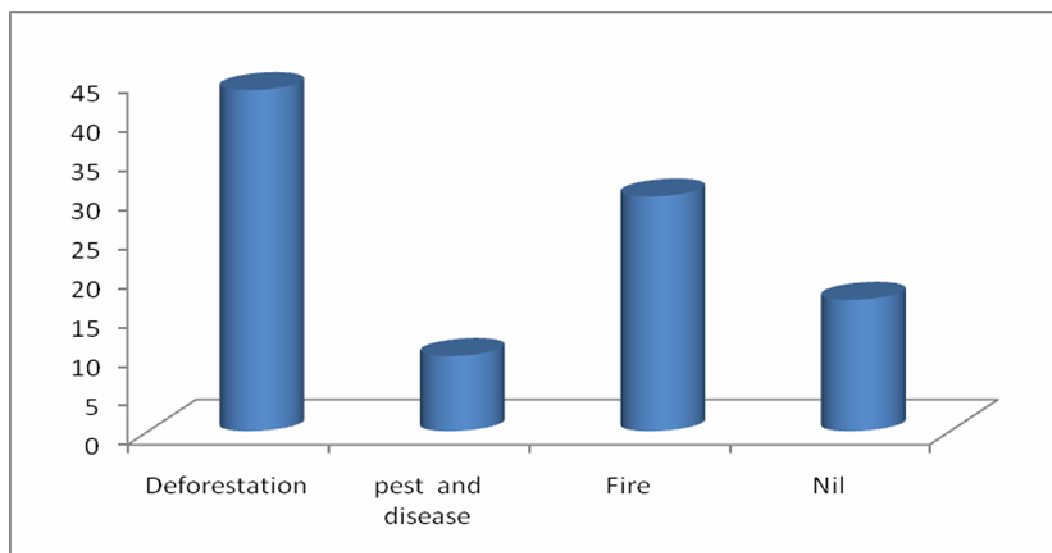
**Figure 5: Form in which plant part is used in ethnomedicinal preparations surveyed in th Kano North senatorial district (2010).**



**Figure 6: Mode of ethnomedicinal preparations, surveyed in the Kano North Senatorial district (2010).**



**Figure 7: Route of administration of preparations from ethnomedicinal plants surveyed in the Kano North Senatorial district (2010).**



**Figure 8: Reported threats to the availability of medicinal plants in Kano North Senatorial districts surveyed (2010).**

## DISCUSSIONS

Available literature consulted shows that, the use of ethno medicinal plant to treat various ailments was not documented in the study area.

Results of the study shows that most of the ethno medicinal plants used were reported as wild, similar research was conducted in other countries like Uganda and Ethiopia where medicinal plants used in ethno medicine were reported as wild (Haile, And Delenasaw, 2007). This clearly indicated that most of the ethno medicinal plants are not yet cultivated by the traditional herbalist.

Result of the study also shows that majority of the plants used in ethno medicine in the study area were trees. This may be due to the fact that this growth form is available in almost all seasons and in addition are not affected by seasonal variations as reported by Albuquerque (2006).

Leaves were found to be the most reported plant part used by the healers for the preparation of various medications in the study area. This correspond with the findings of other ethno medicine studies in Africa like Uganda, Ethiopia and Mali where it was reported that most of the plant parts used in different preparations for remedy were leaves (Tagola, and Diallo 2005).

More than one plant species have been reported to be used by healers in remedy preparation for various ailments. This could be attributed to additives or synergistic effect that they could have during treatment (Haile, and Delenasaw, 2007). While some plants are prepared singly and correspond with other findings in Bolivia (Macia, 2005). Various additives such as edible oil, porridge, honey, etc were used in remedy preparations.

Following the interview with traditional healers it has been reported that majority were found to have poor knowledge of dosage and

antidote while giving prescription of remedy to the patients, and most of preparations were said to have no side effect except vomiting and in rare cases watery stool and this may be attributed to the low toxicity of medicinal plant species used by the local herbalist (Haile and delenasaw, 2007).

The major threat to the availability of medicinal plant was deforestation. This could be attributed to the additional values of the majority of ethno medicinal plants in the study area as well as current high demand for fuel wood as an energy source. Therefore an effort should be made to conserve the diversity of these vital resources.

The indigenous knowledge among the traditional healers with regard to their age shows that majority were of old age, this reveals that, knowledge transfer to the younger generation was very poor, they seem to keep the knowledge with them either for the sake of secrecy or due to apathy but the younger generation to traditional knowledge.

## CONCLUSION

In this research, many plants of medicinal importance more particularly those used in ethnomedicine in the study area were determined, assessed, and finally recorded and documented. The documentation of the indigenous knowledge of the use of ethnomedicinal plants will greatly help in preventing the erosion of such knowledge, as knowledge transfer was oral and the practitioners are at their old age, and in addition the younger generation are not interested to carry on the practice. From the result of the research majority of the plants species were reported to be rare and abundant, this will attract an urgent attention towards conserving such vital resources, so as to optimize their use in the primary health care system.

According to the literature review, some of the plants of the study area were found to have some bioactive compounds and biological activities. Therefore, further studies of the above should also be conducted so that they can be utilized in the synthesis of conventional drugs.

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