



**ETHNOBOTANICAL SURVEY OF MEDICINAL PLANTS USED IN  
THE TREATMENT OF OPPORTUNISTIC SKIN INFECTION AMONG  
THE PEOPLE OF ITAS/GADAU LOCAL GOVERNMENT AREA OF BAUCHI  
STATE, NIGERIA**

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**ABSTRACT**

*The use of plants for the treatment of opportunistic skin infections has been on the increase and the current renewed interest in natural products to sustain health globally cannot be over emphasized. A survey of the major ethno medicinal plants was carried out in Itas/Gadau LGA, where some ethno medicinal plants used in treating skin infections and various ailments were documented. The investigation included names and parts of plants used, ailments cured, preparation and administration of local herbs. Data was obtained through the use of administered questionnaire's distributed at random to traditional healers as target respondents. It was shown that various plant species from 10 families were reported to be used in treating ailments, majority of these plants (72%) are wild, *Detarium microcarpum*, *Carissa edulis* and *Anogeissus leiocarpus* 35.5% were mainly harvested for their stem/bark. About 65.2% constitutes the most frequent route of administration by topical application. The most frequent method of preparation is by grinding and direct application of the powder to the affected area, whereas the most common skin infection treated with the medicinal plants is eczema (39.1) The most reported threat to the availability of medicinal plants is deforestation (43.6%), in some cases additives like edible oil and honey are used in 58% of remedy preparations. It is therefore recommended that the plants used should be investigated to ascertain their safety and efficacy in order to improve the quality of life of man.*

**Key words; Ethno botany, opportunistic skin infection and ailments.**

**INTRODUCTION**

Many medicinal plant species worldwide are used in traditional medicine for treating different diseases. The world health organization (WHO) has estimated that about 80% of the population living in the developing countries depend tremendously on traditional medicine for their primary health needs. More than half of the world's population still depends exclusively on medicinal plants, and plants offer the active ingredients of most traditional medical products (Kleinman, 1980). Ethnomedicine is concerned with the study of medical systems from the natives point of view, native categories and explanatory models of illness, including aetiologies, symptoms, causes of sickness and treatments that are investigated (Kleinmann, 2010).

The ethno medicinal approach proves particularly useful for the study of indigenous therapeutic agents because it allows researchers to understand treatment patterns according to

nature explanatory models instead of only through the lens of biomedicine (Kleinmann, 2010). Use of herbal medicine in Nigeria represents a long history of human interaction with the environment and rural communities in particular depend on plant resources mainly for herbal medicine (Veeramuthu, 2006).

Early studies on indigenous medical system were mostly limited in focus to witchcraft and illness caused by supernatural forces and on specialists such as folk healers and shamans (Fabrega and Silver, 2005)

Disease is the impairment of health, a condition of irregular functioning and conditions that affect the body of an organism. It is often considered as a medical state associated with specific symptoms and signs (Olapade, 2000). It may be caused by factors originating from an external source, such as autoimmune disease. Civilizations have relied on myriad medicinal and dietary uses. This might have been traced in part to their immobility.

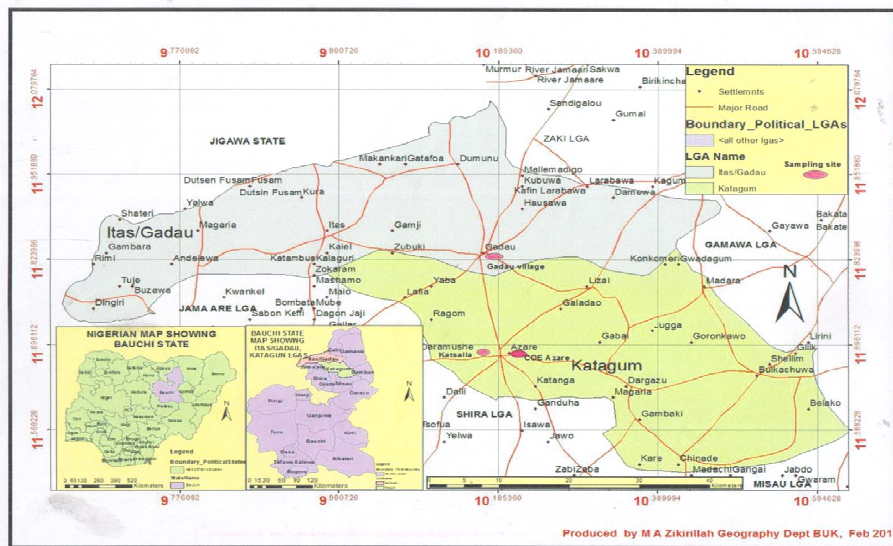
Plants produce chemicals as a way of interacting with other organisms in their environment either for mutual gain such as enlisting animals in the transport of pollen grains or as mechanism for defense, to repel or poison predators or parasites (Olapade, 2000).

Medicinal plants can handle two or more ailments while others take care of just one. Some of these medicines are well found in rural areas of many developed countries. Traditional healers claim that their medicine is cheaper and more effective than modern medicine (Rajadurai, 2004).

**MATERIALS AND METHODS**

The survey was conducted in the study area (Bauchi north senatorial district), located

between latitudes 9.21° North and longitude 8.5°East. Northern Bauchi has a Sudan savannah type of vegetation and climate that gives way to Semi-arid conditions (Obute and Osuji, 2002). The predominant tribe is Hausa and Fulani. The economy is mixed agricultural based on herding cattle, goats, sheep, horses and crops farming Northern Bauchi has a tropical savannah climate, with an average temperature of 33°C to 41°C during hot seasons. The climatic condition is very hot in the months of March, April and May, while December and January are usually very cold. Rainfall in this area usually ranges between 1000mm to 770mm per annum. It starts in April and lasts till September, and the weather is usually humidly hot during early part of the rain (Obute and Osuji, 2002).



**Figure 1: Map of Nigeria showing Bauchi State, indicating the Survey area for the research**

Data was collected through the use of questionnaires and verbal interview with the traditional healers in the study area as target respondents. Northern Bauchi was selected based on the population of the traditional healers present in the area. A total of 200 questionnaires were administered at random within the study area and 155 were retrieved, Information contained in the questionnaires include the source of information, vernacular name of plant, plant part, method of preparation, mode of treatment for use and dosage. The skin diseases treated as well as

problems confronting the traditional medicine practitioners and sellers were also included. The purpose of this was to get useful information from the practitioners concerning the type of plant used in treating opportunistic skin infection.

Data was analyzed 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 and mode of preparation and administration.

## RESULTS AND DISCUSSION

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 ethnomedicinal plant parts documented were stem/bark, similar research was conducted in countries like Uganda and South Africa where plant part used were reported as stem/barks (Haile and Delenasaw, 2007).

A total of sixteen (16) medicinal plants used by the people of Itas/Gadua Local Government Area for the treatment of opportunistic skin infections were documented and identified in the study area. The identified plant species belong to 10 families, however the most common and frequently used plants were three (3) *Anogeissus leiocarpus*, *Detarium microcarpum* and *Carissa edulis* from three different families. The plants are documented in table 1 below, scientific names, families, plant parts used along with their local and common names were documented. Plants identified in this research have been used by respondents and according to them are quite efficacious, indigenous medicinal plants forms an important component of the natural wealth of the people of Nigeria (Kleinmann, 2010).

The result of ethno-botanical survey conducted is shown in Figure 1. The most frequently plant part used was stem/barks (35.5%). Preparation from the leaves constitute 30.0%, while roots (29.3%), flower/seeds (5.0%). However complete plant reported to be used constitute 0.2%. There were significant differences between the parts of plant used ( $\chi^2=76.501$ , p value=31.4).

Based on method of administration, (Figure 2), the most frequent route of administration was found to be topical application (65.2%), followed by oral (21.7%), sniffing/ inhaling (7%) and others (6%). Significant differences were also observed with regard to the route of administration. The most frequent method of preparation is direct application of the powder to the affected area, which recorded 60% of the response. Decoction (method of extraction by boiling) recorded 18.2%, infusion 11.3% and steaming 10.5%. P value=31.4.

The most frequent skin infections treated using medicinal plants in the study area was eczema (39.1%), chicken pox (30.4%), ring worm (17.4%), and scabies (13.0%). There were significant differences is also recorded ( $\chi^2=39.43$ , p value=25.0). The result of the survey on threats on the biodiversity in the study area. The most important threat to the medicinal plant and biodiversity in general was

deforestation (43.6%), fire (30%), pest and diseases (9.6%), while 16.8% were reported to face no threat to their availability. Significant differences were significant (P = 0.05)

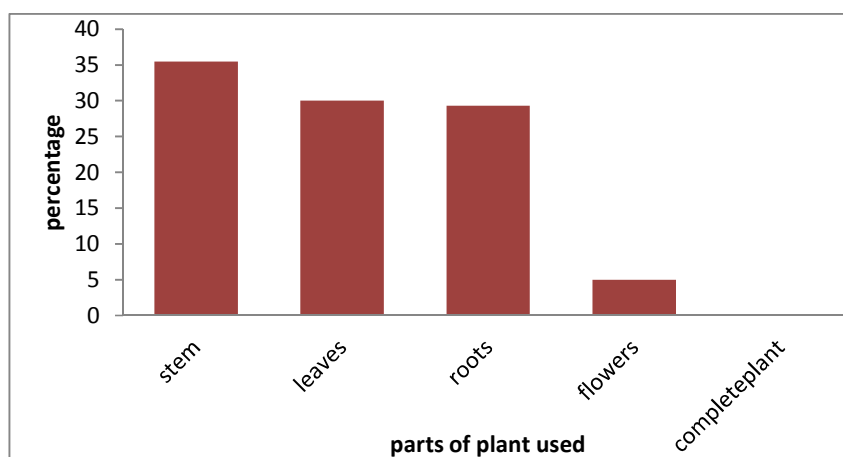
The results of this study show that more medicinal plants are sourced from the wild than are cultivated, regardless of how medicinally important they are to the people of Northern Bauchi Nigeria. For those that are cultivated the extent is still rudimentary as no large-scale production is involved. Obviously this tells a story of how these plant genetic resources are managed unsustainably in this part of Nigeria (Naranjo, 2014)

Result of the study shows that majority of the plants used in ethno medicine in the study area were trees. This may be due to the fact that, trees are available almost all seasons and in addition are not affected by seasonal variation (Naranjo 2014). Stems and 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 corresponds with the findings of other ethno medicinal studies in other African Countries like Uganda, Ethiopia, and Mali (Haile and delenasaw, 2007). More than one plant species have been reported to be used by the healers in the remedy preparation for various ailments. This could be attributed to additive or synergistic effect that they could have during treatment (Haile and Delenasaw, 2007). While some of the remedies are prepared using only plant parts, this corresponds with the findings of (Olapede, 2008), various additives such as edible palm oil, honey etc. have been reported to be added in the remedy preparations.

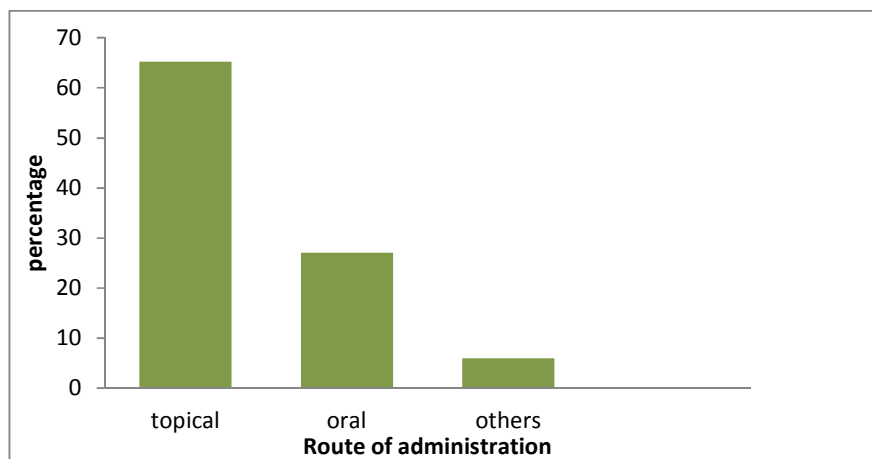
Majority of the traditional healers were found to have poor knowledge of dosage and antidote while giving prescription of remedy to the patients. Most preparations were reported to have few side effects like watery stool and vomiting. This may be attributed to the low toxicity of the remedy prepared (Haile and Delenasaw, 2007). The most important threat to the availability of the medicinal plant was deforestation, this could be attributed to the fact that the trees have other uses in addition to their role in ethno-medicine. Extensive use of these trees as sources of fuel, wood and building materials could be the major reason for their increased disappearance. Ethno medicinal knowledge transferred to the younger generation from the older generation seems to be very poor. This may be due to the secrecy involved in knowledge transfer and no concern given to the value of indigenous knowledge (Mann *et al.*, 2008).

**Table 1:** List of ethnomedicinal Plants used for the Treatment of Skin infections In Itas/Gadau area of Bauchi State

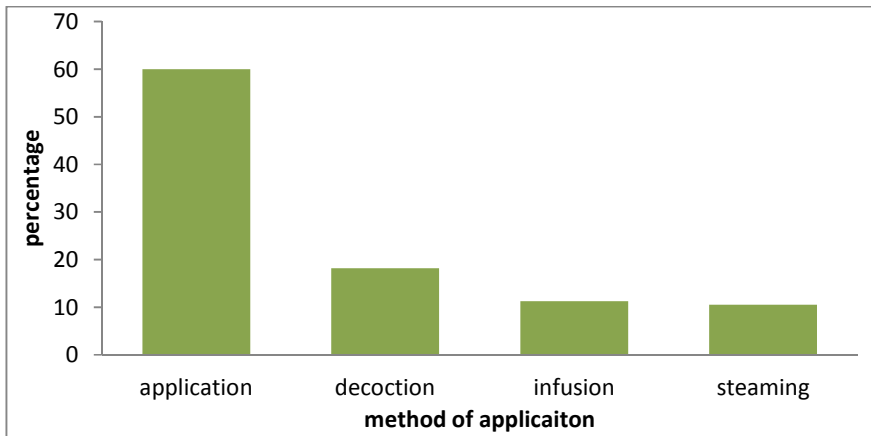
Scientific name	Family	Hausa name	Common name	Plant part	Habitat
<i>Nicotiana tabacum</i>	<i>Solanaceae</i>	Taba	Tobacco	Leaves	Shrub
<i>Lawsonia inermis</i>	<i>Lythraceae</i>	Lalle	Henna	Leaves	Tree
<i>Daniellia Oliveri</i>	<i>Fabaceae</i>	Kaduaara	Basalm	Bark	Tree
<i>Jatropha gossypifolia</i>	<i>Euphorbiasee</i>	Binidazugu	Physic nut	Leaves	Shrub
<i>Ipomea batatas</i>	<i>Convolvulace</i>	Dankali	potatoe	Leaves	Climber
<i>Calotropis Procera</i>	<i>Asclepiadacee</i>	Tumfafiya	Sodom apple	Leaves bark	Shrub
<i>Diosprosmesipiliformis</i>	<i>Ebenaceae</i>	Kanya	Ebony tree	Bark	Tree
<i>Carissa edulis</i>	<i>Apocynaceae</i>	Macentsada	Bush plum	bark	Shrub
<i>Detarium microcarpum</i>	<i>Fabaceae</i>	Taura	Sweet detar	bark	tree
<i>Anogeissus leiocarpus</i>	<i>Combrataceae</i>	Marke	African birch	leaves	tree
<i>Mitracarpu shirtus</i>	<i>Rubiaceae</i>	Gogamasu	Tropicalgirlpod	leaves	shrub
<i>Mangifera indica</i>	<i>Anacardiaceae</i>	Mangwara	Mango	bark	tree
<i>Ficus sycomorus</i>	<i>Moraceae</i>	Baure	sycomore fig	leaves	tree
<i>Aloe vera</i>	<i>Asphodilacee</i>	Alobera	aloeceae	bark	shrub
<i>Balanites aegyptiaca</i>	<i>Balanitaceae</i>	Aduwa	Desert tree	leaves\	
<i>Tridax procumbe</i>	<i>Compositae</i>	Kalgo	Tridax	stem	



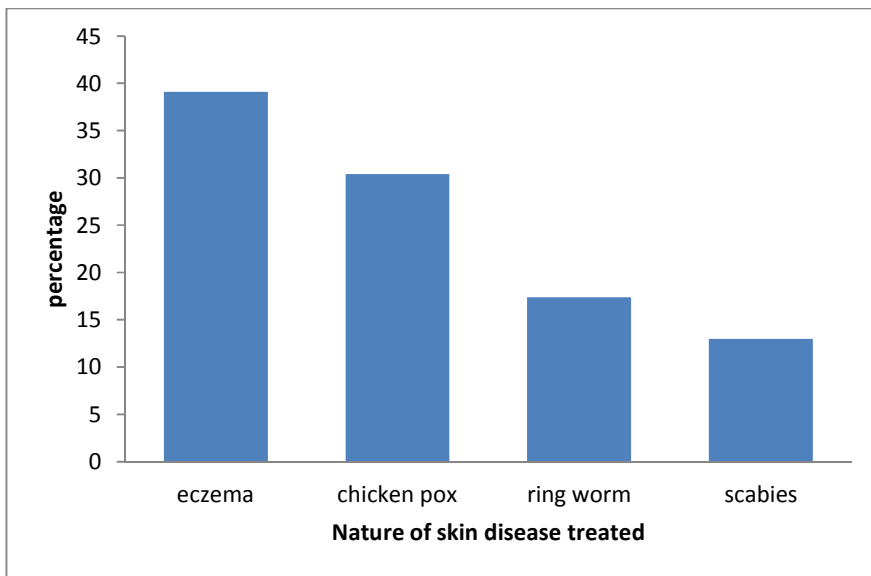
**Figure 2:** Parts of plant used in treating opportunistic skin infection in northern Bauchi, Nigeria.



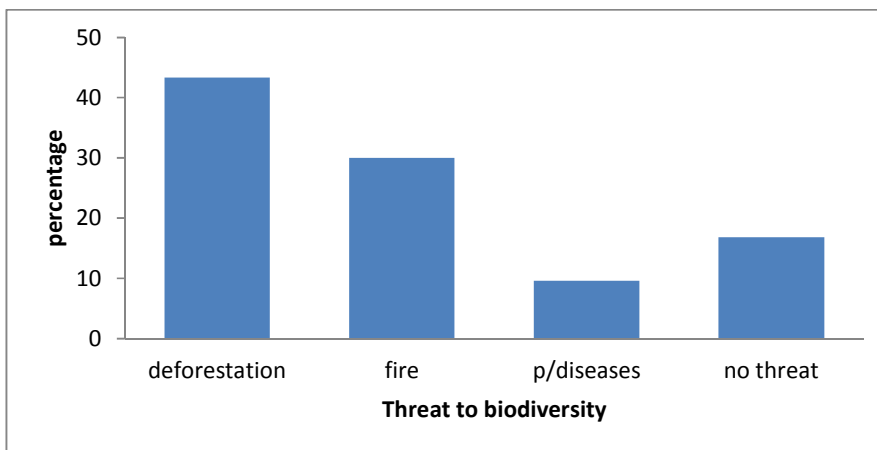
**Figure 3:** Route of administration of traditional medicine used in treating opportunistic skin infection in Northern Bauchi, Nigeria.



**Figure 4: Mode of preparation of traditional medicine used in the treatment of opportunistic skin infection in Northern Bauchi State, Nigeria**



**Figure 5; Frequency of opportunistic skin infection in Northern Bauchi State, Nigeria**



**Figure 6: Threats to the biodiversity in Northern Bauchi State, Nigeria.**

## CONCLUSION

In this study, many plants of ethno medicinal importance used to treat opportunistic skin infections in the study area were determined, assessed and documented.. The most common plants used were *Anogeissus leiocarpus* locally called MARKE (hausa), *Detarium microcarpum* locally called TAURA (hausa) and *Carissa edulis* locally called TSADA (hausa). These plants were

reported to be used in the treatment of skin infections like eczema, ringworm, scabies, skin allergies, heat rash and other related skin infections. It was observed that few of the plant species were rare in abundance. This will attract an urgent need for conserving these vital resources so as to optimize their use in primary health care system.

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