

# Ethnobotanical Survey of Medicinal Plants Used for the Treatment of Skin Disease in Keffi, Nigeria

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## ABSTRACT

**Objective:** The study was aimed at surveying the Ethnobotanical plants used traditionally to cure skin diseases in Keffi Local Government Area of Nasarawa State, Nigeria.

**Methods:** Administration of structured questionnaires /interview were employed. Herb sellers, traditional medicine practitioners, farmers and aged people were the respondents. Plant species were photographed and identified at the Department of Biology, Nasarawa State University, Keffi Nigeria.

**Results:** A total number of 40 plants species belonging to 30 families were observed to be used in treatment of Skin diseases such as eczema, rashes, wounds, boils, acne, and measles. The family Euphorbiaceae provided the largest plants species (4) followed by Compositae (3), Rutaceae (2), Malvaceae (2), Liliaceae (2), Asteraceae (2) and Poaceae (2). The other plant families have one member each in the distribution of species within the families. Example of some plants in this families include *Jatropha curcas*, *Tridax procumbens*, *Citrus aurantium*, *Sida acuta*, *Aloe vera*, *Chromolena odorata*, *Cymbopogon citratus*, *Mangifera indica*, *Azadirachta indica* etc. The preparation methods of this herbal recipe includes infusion (7) which is mostly used method, grinding (6) followed closely and then decoction (2) while (6) others are applied directly. The result shows that plants leaves are the most commonly used part (35), followed by seeds and sap (3), then stem bark has (2) and oil (1). The result also reveals that Keffi residents view herbal treatments as more effective and cheaper compared to the orthodox medicine.

**Conclusion:** Medicinal plants used in this area form a rich source of indigenous knowledge which can function for therapeutic purposes.

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## INTRODUCTION

Ethnobotany is the scientific study of relationship that exists between people and plants. It interface between indigenous people and their wild exploit of plants around them, which is a significant aspect of biological diversity conservation.<sup>1</sup> Herbs are generally valued for virtues as food as well as medicine.<sup>12</sup> Through a long process of trial and error, our four fathers were able to select hundreds of wild plant in their various localities for a specific use. The information on economic front of plant use was handed down from one generation to another orally through the word of mouth or without any published records.<sup>12</sup> Ethnomedicinal plants are utilised for the treatments of diseases and disorders like dysentery, skin diseases, hypertension, headache, boils and blisters, rheumatism and gout, arthritis, piles, jaundice, haemorrhoids, ophthalmic diseases, fever, toothache, diarrhoea, bone fracture, cough, insect and snake bites, worm infection, cuts and wounds, cold and catarrh, bronchitis, asthma, leprosy etc.<sup>14</sup> Disease is the impairment of health, a condition of irregular functioning and conditions that affect the body of an organism. It is often construed as a medical state associated with specific symptoms and signs.<sup>11</sup> It may be caused by factors originating from an external source, such as infectious disease, or it might be caused by internal dysfunctions, such as autoimmune disease.<sup>4</sup>

### Medicinal Plant

Plants have always been the principal source of drugs for the prevention and treatment of disease and also for the production of some drugs currently used in modern medicine.<sup>2</sup> People with simple cultures and those with advanced

civilization have relied on myriad medicinal and dietary uses; this might have been traced in part of their immobility. Plant produces chemicals as a way of interacting with other organisms in their environment either for mutual gain such as enlisting animal in the transport of pollen grains or as mechanism for defence, to repel or poison predators or parasites. Modern societies depend on chemical agents in plants for 25% of prescription of drug and nearly all recreational chemicals, examples are caffeine in coffee, the nicotine in tobacco and theophylline in tea all found in plant.<sup>2</sup>

Some phytochemicals have advantageous effects on long term health when humans consume them and can be used effectively to treat human disease. This phytochemicals are separated into primary metabolites such as sugar and fats, found in all plant and secondary metabolites which are in smaller range of plant serving specific function, for example secondary metabolites as well as others are some pheromones used to draw insects for pollination. It is secondary metabolites on pigments which can have therapeutic actions in humans and can be refined to manufacture drugs. Examples are insulin (from root of dahlias), quinine (from cinchona), morphine and codeine (from poppy) and diquoxin (from foxylove).<sup>16</sup>

Chemical compound in plant mediate their consequence on human body through identical processes to those already known for the chemical compound in conventional drugs; thus herbal drugs do not differ greatly from conventional drugs in terms of their working pattern.<sup>16</sup> Medicinal plants can handle two or more ailment while other takes care of just one. Some of these

common Medicinal Plants around Keffi include;

- *Aloe vera* leaves, widely used to cure wounds, burns and other skin ailments.
- *Euphobia hirta*, used traditionally to cure bronchitic asthma.
- *Momordica charantial*, used as an agent to reduce the blood glucose level.
- *Vernonia amygdalina*, used to cure intestinal ailments e.g. dysentery.
- *Allium sativum*, widely used as an antibiotic.
- *Zingiber officinale*, used to relieve nausea.
- *Moringa olifera*, use for food as well as and traditional medicines.<sup>5</sup>

The Hausas of the Nort Central Nigeria believe that all plants are medicinal. Different people use different combinations of plants to treat one type of ailment or the other and this varies from one community to another and in different ecosystem. Therefore, virtually all the plant found in nature is of value to man for medicine and it implies that every native plant species has potential medicinal properties.<sup>12</sup>

### Skin Diseases

Skin is body's outer covering, that protects from heat and light, injury and infection. Skin controls body temperature, stores water, fat, including vitamin D.<sup>13</sup> The skin, which measures up to 6 pounds, is the body's largest organ. It is made up of two main layers: the epidermis (outer layer) and the dermis (inner layer). The epidermis is mostly made up of flat, scale-like cells called squamous cells. Under the squamous cells are round cells called basal cells. The innermost part of the epidermis also contains melanocytes (cells that produce melanin), which gives the skin its colour. The dermis contains blood as well as lymph vessels, hair follicles, and glands that produce sweat, which helps regulate body.<sup>13</sup>

Skin is the human largest organ, and essential to the human health are the plants showing dermatological qualities and the ability to arrest bleeding, cure wounds and cuts.<sup>8</sup> Skin diseases comes in different forms, basically classified as non-contagious and contagious diseases, the primary which are bacteria, fungi, viral and parasites diseases. These diseases occur all around the world but are prevalent in the rural and tropical regions.<sup>7</sup>

Adebayo.<sup>1</sup> recorded that part of the following ten plants are being used by traditional medical practitioners in Western Nigeria e.g. *Khaya senegalensis*, the plants bark are used against various fungal infections. *Ceiba pentandra*, belongs to family Bombaceaea and its bark is used in curing sores, ulcers, cancerous sores while the bark of *Parkia biglobosa* (Jacq.) which belongs to the family Meliaceae is as well used to cure Ringworms, localized skin eruption, measles, chicken pox, wound, athlete's foot and fungal infections. The other seven are *Rhaphiostylis beninensis*, *Perquetin nigrescens*, *Colocynthis citrullus*, *Funtumia elastica*, *Butyrospetmum paradoxum*, *Curculigo pilosa*, and *Setaria caudula*. They belong to families Icacinaceae, Periplocaceae, Curcubitaceae, Apocynaceae, Sapotaceae, Hypoxidaceae and Paniceae respectively.<sup>1</sup> They are for local treatment of bacterial infections, septic sore, heat rashes wound and snake bites in Nigeria. A preliminary investigation stated that people of Akoko also use *Azadirachta indica* to cure small pox and chicken pox. *Ficus cupensis* and *Pupalia lappacea* are been used for treatment of leprosy. Skin infections such as eczema, pimples, and rashes are treated by rubbing the leaves of *Jatropha gossypifolia*, *Borreria* Spp., *Hymensocardia acida* and *Allamanda cathartica* on the infected part of skin. *Acalypha hispidais* known to confer anti-bacterial as well as anti-fungal properties

and therefore leaf decoction is administered to infants for skin rashes. For sexually transmitted diseases, the people rely on *Vernonia amygdalina* for vagina itch and *Azadirachta indica* for syphilis. These herbal drugs give strength to the body organs it also stimulate normal functioning. They also act selectively and gently with no disturbing of other system. Modern medicine affects a number of metabolic activities in the human system and they have side effects which makes body more susceptible to other disease<sup>6</sup>.

#### Traditional Method for Preparing and Administering of Herbal Recipes

##### Decoctions

Is a method of choice when working with tougher and more fibrous barks, that is the plants bark and roots which have water soluble chemicals. The plant material is boiled for a longer period of time or steeping overnight before use to make softer the harder woody material and release its active constituents. Other solvent used traditionally in decoction include alcohol, lime juice and palm wine. Plant parts are boiled in these solvent for 30minutes or more, and strained into cup to drink.

##### Infusion

Is used usually for delicate herbs and fresh young plants. Water is boiled and poured over the herbs or a combination of herbs in a ceramic pot, which is covered then allowed to steep for 10-15minutes or more. It also can be prepared by pouring heated water over the herb in a cup or by dropping the herb into the pot covered with water and heated over a period of time. The ratio of herb to water can vary depending on remedy.

##### Tinctures

Tincture is alcohol and water extract, which is used in plant with active chemical that are not so very soluble in water and/or when a larger quantity is prepared for convenience and wanted for a long-term storage. The percentages of alcohol usually help to determine its shelf life: the more alcohol used, the longer the shelf life. The alcohol used traditionally can vary from seaman's Schnapps, Chelsea, local gin (ogogoro).

##### Macerations

Fresh /dried plant material is covered in water and soaked overnight. The herb is strained out and the liquid is taken. This is often used for plants with delicate chemicals and might lose their active chemicals when heated which might be degraded in alcohol. A whole lime fruit might be slash into pieces and put inside the bottle containing these plant parts. Other materials that are added in maceration include alum, salt etc.

##### Bath and bathing remedies

In this method, herbs are prepared as vapour bath, or medicinal plants are added to bath water and the patient is soaked inside it. Plant part may also be pounded with black soap and used for bathing.

##### Poultices and compresses

Many herbal remedies are added to skin directly as poultices. Poultice are prepared in different ways; by chewing fresh leaves /roots and spitting them out on the skin, or by mashing of fresh leaves /roots with hand/ mortar and pestle. Sometimes hot water is poured over dried / fresh plant material to soften them. Then the wet herbs are placed directly on the skin or between pieces of cloth and lay on the skin. Light cotton bandage to bind the poultice area is generally used. Compresses are by

soaking cloth in prepared infusion, tincture or decoction and laying cloth on the affected part of body.<sup>10</sup>

## MATERIALS AND METHODS

### Study Area

The Ethnobotanical survey was conducted between March 2015 and July 2015 to obtain information about medicinal plants used for the treatment of skin diseases. The information gathered was based on oral interview also with the aid of structured questionnaire and only data from willing respondent were documented. Plants specimens were identified and authenticated by using their local names as well as standard text. The Survey Area was Keffi Local Government Area, Nasarawa State in Nigeria. Keffi is located in North Central Nigeria with an Area of 138km<sup>2</sup> and a population of 92,664 (NPC, 2006). The Area lies within 8°50'55"N and longitude 7°52'25"E with a tropical humid climate characterized by two distinct Season; the wet (rainy) season which starts from ending March and it ends in October. And dry season which is between November and February. Keffi Local Government Area has temperature range of 36°C – 39°C (maximum) and 21°C - 25°C (minimum). The soil types predominantly found in Keffi are sandy soil and silt loamy. The vegetation of the area is guinea savannah. The occupations of the people is majorly farming and trading. It has 1,400mm per annum rainfall.<sup>3</sup>

### Methods

Some major herbal practitioners were contacted for adequate information on plant species and their medicinal uses with reference to skin diseases, using structured questionnaire. This herbal practitioners includes; Baba Osun, MallamYaro, Alhaji mai maganigargajiya, Mama Yaara etc. Major information was gathered from

practitioners though not all were given by these herbs sellers in form of plants used also a brief details on how they are prepared, methods of administration and dosage. During the course of this survey, a camera was used to take the pictures of the identified plants. A field note and pen was also used for jotting the common names, description, local names and uses of the plants mentioned by respondents.

### Data Collection

Data was collected between March - July of 2015, each herbal practitioner was interviewed once. Information collected from herbal practitioner include; sex of the respondent, age, nationality, source of knowledge, vernacular names of plants, uses of the plants, method of preparation and also administration etc. Use of structured questionnaire and oral interview were adopted to gather ethno medicinal data. Questionnaire was administered directly (same word to the respondents) those who could read and write, while others were filled after being interview orally using an interpreter. The questionnaire was subdivided into three sections.

First section dealt with recipes used in treatment of common skin disease, their arrangements, herbal preparations (dry or freshly collected), traditional solvent of choice (e.g. palm wine, alcohol, hot pap, extract from fermented maize etc). Traditional extraction methods e.g. grinding, boiling, infusion, strong heating etc.

Then questionnaire was translated and interpreted to some set of people orally in local language (Hausa) because of their low literacy level. Responses were filled into the questionnaire after each interview but literates once among them filled the questionnaires themselves.

The second dealt with demographic information such as sex, age, practice

specification, nationality, duration of practice and educational background.

Third section answers professional experience on the treatment of diseases using question like; disease treated, frequency of treatment, sources of knowledge (either ancestral or training or both) local names of plant used, plant parts availability, accompanied side effects (e.g. nausea, vomiting, dizziness, headache etc), accompany verbal instructions.

### Data Analysis

Descriptive statistics was used in analysing the data collected, this include mean and tables were used to summarize the data.

## RESULT AND DISCUSSION

Results of the demographic structure of respondents in Keffi Local Government area, of Nasarawa State revealed that 20 of the respondents were mainly herb sellers, 10 were traditional medicine practitioners and 20 were traditional medicine practitioner /herb sellers. Majority respondents were male (39) while the traditional medicine practitioners were mostly females (11) (Table 1).

The professional experience of respondents as observed in Table 2; shows that 28 of them inherited this knowledge from their ancestors while 15 got theirs by training, 7 of them acquired this knowledge from both their ancestor and by training. The consequence of this is that most knowledge on herbal remedies is handed down by older members of the community (41-60 and 60-70 years of age) it also proved that ethnomedicinal knowledge is concentrated among the senior members of the families, and it is relatively difficult to transfer the knowledge from the elderly to the younger generation.<sup>10</sup>

This result also revealed that most medicinal plants used were always obtained

from home and gardens (35), those obtained from the forest (10) followed closely, while those obtained from the markets showed the least number (5). Most of the treatments were void of side effects (44) i.e. patients do not experience any side effect. Some respondents claimed being nauseated when treated (2). A Few of the respondents claimed to always feel dizzy whenever they make use of these herbs (2) as observed in Table 2. The implication of this is that, the herbal preparations had little or no detectable side effect when used or that the respondents never took notice of such side effect.<sup>15</sup>

The information gathered from all respondents showed that about 40 plant species are used in Keffi for the treatment of skin diseases. These plants are from 30 different families. Botanical names, local names, common names, habits, plant part used are presented in Table 3.

Species distributions according to the families are shown in (Table 4). This study revealed that the family Euphorbiaceae had the highest number of plants (4) used in treatments of skin diseases in Keffi, followed closely by the families Compositae (3), Rutaceae (2), Malvaceae (2), Liliaceae (2), Rubiaceae and Asteraceae (2) others such as Fabaceae, Solanaceae etc had just one member of their family each.<sup>15</sup>

Table 5 shows the method of preparation as well as administration of recipe used in the treatments of the Skin Diseases. It was observed that recipes are prepared from combination of different parts from two or more plant species including leaves, seeds and stem (bark). Preparations mostly preferred are by infusion and decoction others include grinding, cream and paste. The structured questionnaire revealed that preferred method of herbal administration in Keffi include; external application (bathing), drinking,

steam inhalation, steam covering, cream and paste.

The 40 medicinal plant species mentioned were represented by all plant forms (Figure 1). Trees were the most used plants (20) followed by herbs (12), shrubs (7) and climber (1).

Percentage representation of the plant parts used revealed that 72% of the identified plants part for curing of Skin diseases in Keffi are leaves, 16% is seeds, fruits and stem has 6% representation each (Figure 2), this may be as a result of the easy access to the extract from leaf as compared to the other parts.<sup>13</sup>

## CONCLUSION

The study affirmed that herbal medicines have great potentials to cure different kinds of skin diseases and the indigenous rural communities in Keffi depend on traditional health care system. The study also revealed that there was high diversity of medicinal plants and traditional knowledge about the use, preparation and applications of these medicinal plants in Keffi. However, the knowledge of herbal medicine has been found among elders and this may not enhance continuity in the use of these plants if such elders' are no more. The decline on the use of plants by the younger generation may gradually lead to the extinction of indigenous knowledge associated with medicinal plants. Awareness and program should also be organized by the government against deforestation, because some of the plants mentioned are almost in extinction and are no more available in residential areas. Government should provide a forum for growers, traders and manufacturers of herbal medicine and professional in the field of traditional and alternative therapies to share knowledge, experience and ideas.

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**Table 1.** Demographic structure of respondents in Keffi Local Government area, Nasarawa State

Parameter	Specification	Number of respondents
Practice specification	Herb sellers	20
	Traditional medicine practitioner (TMP)	10
	Traditional medicine practitioner/Herb sellers	20
Sex	Male	39
	Female	11
Age (years)	1-20	0
	21-40	29
	41-60	16
	>60	5
Nationality	Nigerian	50
	Non-Nigerian	0



**Table 2.** Professional experience

Parameter	Specification	Number of Respondents
Treatments Pattern	Regular	40
	Irregular	10
Treatment Duration	1day	0
	2-3 day	0
	4-5 days	21
	6-12 days	9
	2-3 weeks	17
	4-6 weeks	3
	Non respondents	0
Knowledge source	Ancestral	28
	Training	15
	Ancestral/Training	7
	Divination	0
Plant availability Plant parts	Forest	10
	Around house/home garden	35
	Market	5
	Not available	0
Side effect	Nausea/Vomiting	2
	Dizziness	4
	Others	0
	None	44
Instruction Accompanied verbal	Yes	50
	No	0
	Non respondents	0

**Table 3.** List of Plant used for the Treatment of Skin diseases In Keffi

Botanical	Families	Local Name	Common Name	Part used	Habits
1. <i>Nicotiana tabacum</i>	Solanaceae	Taba	Tobacco	Leaves	Shrub
2 <i>Lawsonia Inermis</i>	Lythracea	Laale	Henna plant	Leaves	Tree
3 <i>Daniella Oliveri</i>	Fabaceae	Kadua	Basalm tree	Bark	Tree
4 <i>Jatropha curcas</i>	Euphobiaceae	Cini da zugu	Physic nut	Leaves/sap	Shrub
5 <i>Jatropha Gossypifolia</i>	Euphobiaseae	Binidi zugu	Wild Cassava	Leaves/sap	Herd
6 <i>Ipomea batata</i>	Convulvulaceae	Dankali	Potato	Leaves	Climber
7 <i>Calotropis Procera</i>	Asclepidaceae	Tumfaafiiyaa	Sodom apple	Leaves	Shrub
8 <i>Citrus Aurantifolia</i>	Rutaceae	Leemoo tsami	Lime	Leaves/sap	Tree
9 <i>Senna alata</i>	Caesalpinaceae	Marga	Crawcraw plant	Leaves	Shrub
10 <i>Tridax Procumbens</i>	Compositae	Kalgo	Tridax	Leaves	Herb
11 <i>Euphobia hirta</i>	Euphobiaceae	Nonan kurchiya	Hairy purge	Leaves	Herb
12 <i>Cochorus Olorus</i>	Tiliaceae	Ayoyo	Jute	Leaves	Herb
13 <i>Talinum triangule</i>	Portrulaceae	Alehu-ruwa	Waterleaf	Leaves	Herb
14 <i>Cynbopogon Citratus</i>	Poacea	Tsauri	Lemon grass	Leaves	Shrub
15 <i>Mucuna sloanel</i>	Leguminoseae	Carara	Stinging beans	seeds	Tree
16 <i>Momordica Charanta</i>	Cucurbitaceae	Kakayi	Bitter guord	Leave/seeds	Tree
17 <i>Moringa Oleifera</i>	Moringaceae	Zoogale	Horseradish Tree	Leaves	Tree
18 <i>Cola nitida</i>	Sterculiaceae	Goro	Kola nut	Leaves	Tree
19 <i>Elaeis guinensis</i>	Palmaceae	Kwara	Palm tree	Leave	Tree
20 <i>Azadirachta indica</i>	Maliaceae	Dogoyaaro	Neem Plant	Leaves	Tree
21 <i>Pakia biglobosa</i>	Mimosaceae	Doorowa	Locust beans	Leaves	Tree
22 <i>Ficus Exasperate</i>	Mosaceae	Achedinini	Sand Paper	Leaves	Tree
23 <i>Sida acutra</i>	Malvaceae	Tsadar lamarudu	Broom weed	Leaves	Herb
24 <i>Aleo vera</i>	Liliaceae	Aleo	Aleo	Leaves/juice	Herb
25 <i>Amaranthus Spinosus</i>	Amaranthaceae	Alehu	Slenda amaranrh	Leaves	Shrub
26 <i>Aspilia Africana</i>	Compositae	Nanake	wild sunflower	Leaves	Shrub
27 <i>Viterilia paradota</i>	Sapotaceae	Kadee	Shae butter	Seed	Tree
28 <i>Vernonia amygdalina</i>	Compositae	Shiwaaka	Bitter leaf	Leaves	Shrub
29 <i>Carica papaya</i>	Carraceae	Gwanda	Pawpaw	Leaves	Tree
30 <i>Ageratum conyzoides</i>	Asteraceae	Ahehen	Goat weed	Leaves	Shrub
31 <i>Cocos nucifera</i>	Arecaceae	Kwakwa	Coconut	Oil/bark	Tree
32 <i>Gossypium barbadense</i>	Malvaceae	Audugaa	Cotton	Leaves	Tree
33 <i>Nauclea latifolia</i>	Rubiaceae	Marga	Nauclea	Leaves	Tree
34 <i>Citrus paradise</i>	Rutaceae	Babban lemu	Grape orange	Juice	Tree
35 <i>Aleo barteri</i>	Liliaceae	Zabuwa	Aleo	Leaves	Herb
36 <i>Chromolena adorata</i>	Astereaceae	Obiarakaraka	Siam weed	Leaves	Shrub
37 <i>Occinum canum</i>	Labiaceae	Dadoya	Basil leaf	Leaves	Shrub
38 <i>Bambusa Vulgaris</i>	Poacea	Gora	Banboo	Leaves	Tree
39 <i>Mangifera indica</i>	Anarcadeceae	Mangoro	Mango	Leaves	Tree
40 <i>Phyllanthus Muellerianus</i>	Euphobiaceae	Geron tsunsaye	Phyllanthus	Leaves	Tree

**Table 4.** Distribution of Species within the Families

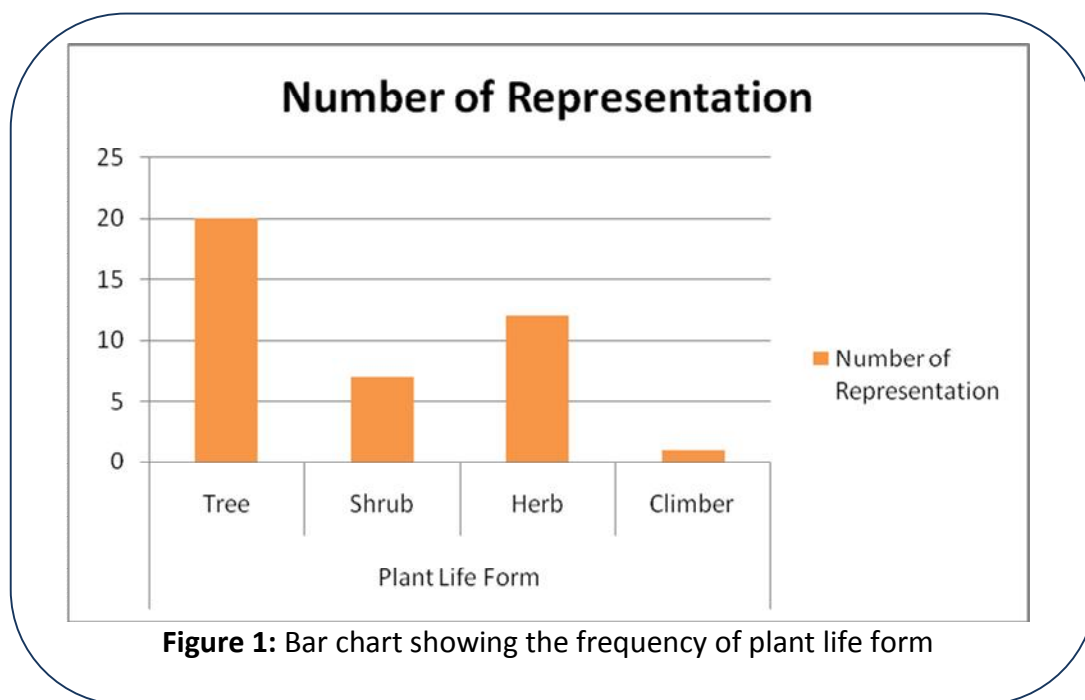
FAMILY	FREQUENCY
Solanaceae	1
Lythraceae	1
Fabaceae	1
Asclepidaceae	1
Euphorbiaceae	4
Convulvulaceae	1
Rutaceae	2
Caesalpinaceae	1
Compositae	3
Liliaceae	1
Portulacaceae	1
Leguminosae	1
Cucurbitaceae	1
Moringaceae	1
Sterculiaceae	1
Palmaceae	1
Meliaceae	1
Mimosaceae	1
Moraceae	1
Malvaceae	2
Liliaceae	2
Amaranthaceae	1
Sapotaceae	1
Caricaceae	1
Asteraceae	2
Areraceae	1
Rubiaceae	1
Poaceae	2
Labiaceae	1
Anarcadeceae	1
Total	40

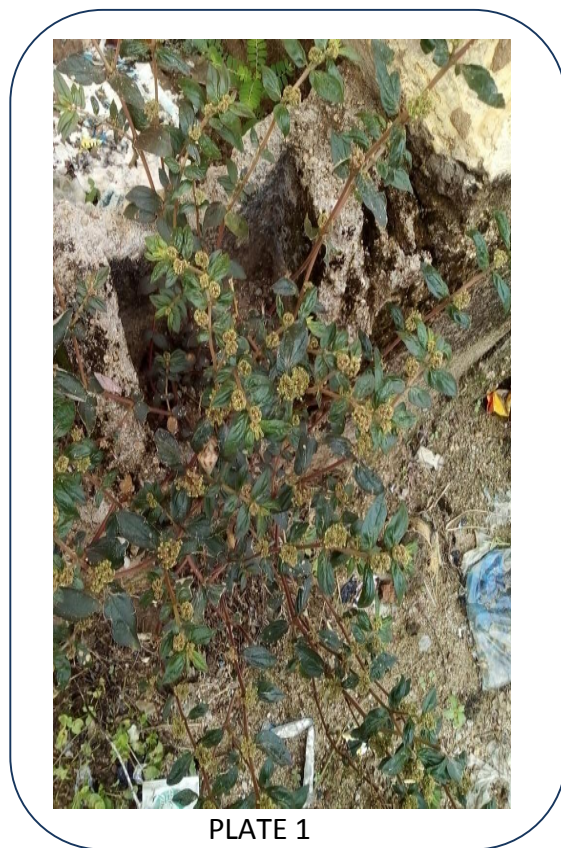
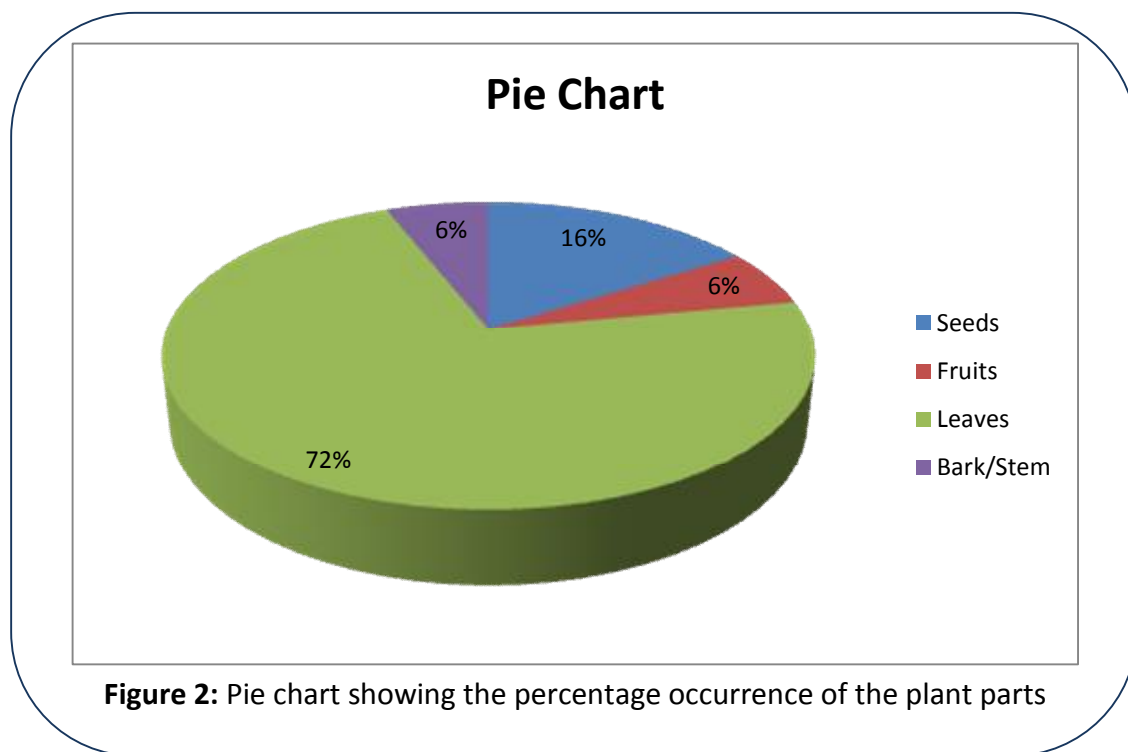
**TABLE 5: Preparation and Administration Methods of Recipe used in the treatments of Skin Diseases.**

Recipes	Plant parts used	Method of Preparation	Method of Administration
<b>A. Wounds</b>			
i. <i>Lawsonia inermis</i>	Leaves	Grinding	Apply paste to wounds.
ii. <i>Jatropha curcas</i>	Stem	Infusion	Latex are applied to wounds and bleeding sites.
iii. <i>Chromolena odorata</i>	Leaves	Infusion	Juice is used to stop bleeding.
iv. <i>Euphorbia hirta</i>	Leaves	-	Leaves or whole herb treats wounds.
v. <i>Ipomea batata</i>	Leaves	-	Leaves are placed on wounds.
<b>B. Eczema</b>			
i. <i>Senna alata</i>	Leaves	Infusion	Extract is applied to eczema until symptom disappear.
ii. <i>Euphorbia hirta</i>	Leaves	-	Scratch affected area with leaves.
iii. <i>Vernonia amyadalia</i>	Leaves	-	Scratch affected area with leaves.
<b>C. Rashes</b>			
i. <i>Bambusa vulgaris</i>	Leaves	Decoction	Drinking intermittently and also for bathing.
<b>D. Boil</b>			
i. <i>Sida acuta, Amaranthus spinosus</i>	Leaves	Infusion	Extract is applied to boil until purse is released.
ii. <i>Talinum triangulae</i>	Leaves	Grinding	Apply paste to boil.
iii. <i>Euphorbia hirta</i>	Leaves	-	Apply milky latex to boil.
iv. <i>Ficus exasperate</i>	Leaves	Grinding	Apply paste to boil until it disappears.
v. <i>Ageratum conyzoides</i>	Leaves	Infusion	Extract is applied to affected area.
vi. <i>Jatropha curcas</i>	Latex and leaves(resp)	Infusion	Extract from leaves and stem is applied to affected area.
<b>E. Itching</b>			
i. <i>Sida acuta, Tridax Procumben</i>	Root and Leaves	Grinding	Apply paste to affected area.
ii. <i>Azadirachta indica</i>	Bark	Soaking	Bath affected area with juice obtained.
<b>F. Whitlow</b>			
i. <i>Sida acuta, Amaranthus spinosus</i>	Leaves	-	Squeeze until soft. Wrap wet plant around affected finger or nails.
<b>G. Pimple</b>			

i. <i>Citrus aurantium</i> ,	Seeds and fruit (Resp)	Grinding	Powder mixed with soap or cream.
<b>H.Measles</b>			
i. <i>Calotropis procera</i> , <i>Nicotiana tabacum</i>	Leaves	Grinding	Bath with soap until symptoms disappear.
ii. <i>Vernonia amygdadalina</i>	Leaves	Infusion	Mixture is rubbed on affected area.
iii. <i>Gossypium barbandense</i> , <i>Cymbopogon citrates</i> , <i>Citrus aurantium</i>	Leaves	Decoction	Take decoction 2-3 times daily, bathes with mixture, also work well inhaled.
<b>I.Craw-craw</b>			
i. <i>Senna alata</i>	Leaves	Cooking	Drink it often and also used it to bath.

(resp): respectively.





Botanical Name: *Euphorbia hirta*

Local Name (Hausa): Nonankurchiya

Common Name: Hairy spurge

Family: Euphorbiaceae

Part(S) Used: Leaves

Description: an erect or decumbent annual herb with shortly stalked flowers without petals. Stem is severally branched arising from a central taproot with yellowish hairs and milky latex.

Ethnomedicinal Uses: poultice of leaves and whole herb are used for treatment of boils, pimples. Crushed leaves can stop bleeding and speed the healing wounds.

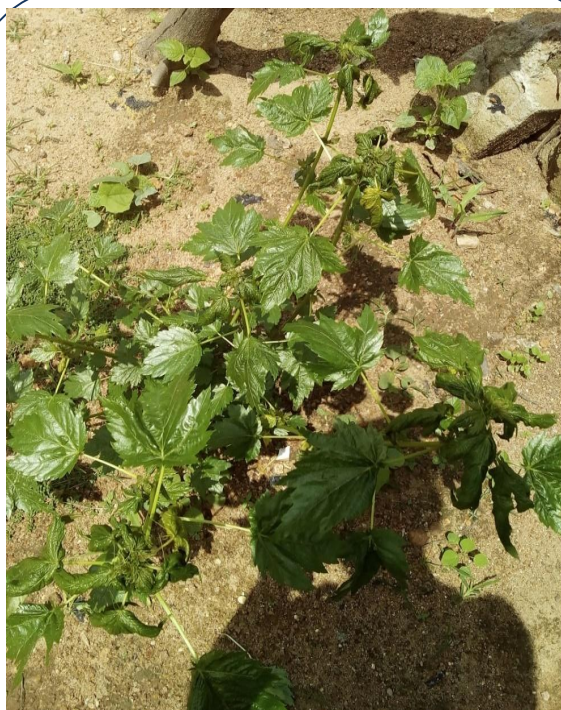


PLATE 2

Botanical Name: *Corchorus olitorus*

Local/Vernacular Name (Hausa): Ayoyo

Common Name: Jute

Family: Tiliaceae

Part(S) Used: Leaves

Description: Annual herb with soft stem. It grows to about 30 cm in height. The leaves are alternate, simple, lanceolate, with an acuminate tip and a finely serrated or lobed margin. The flowers are small and yellow, with five petals; the fruit has many-seeded capsule. It performs well almost anywhere, and can be grown year-round.

Ethnomedicinal Uses: Preparation of leaves as soup and the abundant of intake of this soup are used for treatment of measles and rashes. This treatment must be taken alongside other verbal prescription.



PLATE 3

Botanical Name: *Cymbopogon citratus*

Local/Vernacular Name (Hausa): Tsauri

Common Name: Lemon grass

Family: Poaceae

Part(S) Used: Leaves

Description: A densely tufted grass, usually growing up to 120 cm. The leaves are grass like, have blade edges and are tapered to both ends; up to 90 cm long and 1.25 cm wide. It seldom flowers and when they do, they occur in panicles with inflorescences of 30-60 cm long.

Ethnobotanical Uses: Decoction of leaves for treating ringworm, chicken pox and other skin infections.





PLATE 4

Botanical Name: *Mucuna sloanei*

Local/Vernacular Name (Hausa): karara

Common Name: Stinging bean

Family: Leguminosae

Part(S) Used: Seeds

Description: its a shrub. leaves are 3-palmate, alternate or spiraled, the flowers are pea-like but larger, with distinctive curved petals, and occurring in racemes. Like other legumes, *Mucuna sloanei* plants bear pods. Generally bat-pollinated and it produce seeds that are buoyant sea-beans.

Ethnomedicinal Uses: oil extracted from seeds is used for preparation of skin cream.



Botanical Name: *Momordica charantia*

Local/Vernacular Name (Hausa): Kakayi

Common Name: Bitter guord

Family: Cucurbitaceae

Part(S) Used: Leaves and seeds

Description: A climber that grows to 5m. It bears simple, alternate leaves with lobes. The fruit is rough, green and red when ripe.

Ethnomedicinal Uses: Leaf extracts treat rashes and sores.