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Plant Remedies Practiced by Keffi People in the Management of Dermatoses

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Hausa/Fulanis are major tribes of Keffi. Ethnic groups of this area are accustomed with local herbs and hold a flamboyant knowledge base with reference to the use of the herbal plants to treat various diseases. An ethnobotanical investigation among the Hausa/Fulani's resulted in the discovery of the medicinal plants that are used by them in the management of dermatosis. The Medicinal plants reported in this research are based on interview and interaction with herbalist, healers, spiritualist, hunters and farmers. A total of 37 medicinal plant species distributed in 18 families used by Hausa/Fulani alleviate/cure as many as 72 different types of skin diseases. The habit in terms of numbers and percentages includes; 2 (5.4%) bulbs; 9 (24.3%) herbs; 9 (24.3%) shrubs; and 17 (45.9%) trees separately. In terms of proportion in one-hundredths distribution of plant parts used, the percentages are as follows, Bark – 11 (29.7%); Leaves – 21 (56.8%); Root – 4 (10.8%); Seed – 1 (2.7%); Whole plant – 2 (5.4%). The highly common method used for administering medicine is Extract (40.5%) followed by paste (37.8%) and decoctions (21.6%). The survey was done to document medicinal plants in the management of dermatosis in Keffi and also assists Phytochemists, Pharmacologists and Pharmacologists in developing new drugs from their result and outcome. Results of the present study is organized in table form representing the scientific name, family, local name, habit and frequency of citation with a short comment on plant parts used and method of application.

Keyword: Hausa/Fulani's, Ethnobotany, Dermatoses, Medicinal Plants, Traditional Knowledge, Keffi.

1. Introduction

Traditional medicine has been used for centuries by herbalists, healers, spiritualists, hunters and farmers as a primary health care at community level. Herbalist, healers, spiritualists, hunters and farmers use indigenous plants for treating and averting illnesses and are believed to be a basis for primary health care provision. Traditional medicine has been shown to be effective and about 60% of rural population depend on it for their primary health care^[1, 2].

Traditional medicines apply the familiarity, experience and practices based on the ideas and beliefs to its ethos, for preservation of well-being. It holds a custom of community agreement, and is uniquely based on the knowledge achieved by community herbalists, healers, spiritualists,

hunters, and farmers at a particular period of time within a geographical region.

In Nigeria, traditional medicine is used in the treatments of almost all diseases if not all including "stubborn" illness as the land is blessed with not only different varieties of plants but also the wisdom of the traditional knowledge to cure, treat and heal sickness.

Several thousand people in Nigeria with partial access to systematized contemporary health support centres still depend on traditional systems of medicine to cater their primary health care needs. Their use is well established and widely acknowledged to be safe and effective^[3]. Herbalist, healers, spiritualist, hunters and farmers in Nigeria use many different species of plants as a usual source of medicine.

Ethno medicines have received global attention from researchers both within Nigeria and elsewhere in the recent past because of their native suitability, adequacy, appropriateness, tolerability and providing clue, indication and information to the innovation and breakthrough of novel drugs of plant source. Plant extracts used in ethno medical treatments is enjoying great popularity, however, it lacks scientific validation^[4, 5, 6].

Ethnobotanical studies are today recognized as the most viable method of identifying new medicinal plants or refocusing on those earlier reported for bioactive constituents^[7].

The use of traditional medicine has improved intensely over the years, due to its affordability, availability, accessibility and acceptability^[8]. However, scientific proof from trials done to assess the preventive and efficacy of traditional medicine products and practices is limited. For that reason, ethnobotanists, medicinal chemists, pharmacologist, economic botanist and ethnobiologist all over the globe have been actively working to gather record and preserve the indigenous therapeutic plants. Studies on the use of and hunt for plant based drugs have accelerated in recent times as they are safe and have fewer side effects. Ethno-pharmacologists, botanists, microbiologists, and pharmacemists are to comb in the hunt for novel bioactive compounds "leads" which could be developed as an effective drug for treatment of various infectious diseases^[4, 5].

Herbal or plant based medicines are considered reliable for the treatment certain diseases such as skin diseases. The skin is the largest organ in the body and it provides protection from the rigors of the environment and regulates body temperature. Almost everyone experiences some sort of skin disease in their life. Skin problems arise from a number of causes which include infections, overexposure to sunlight, toxic, hormonal imbalance, parasites, cell dysfunction and even stress. Skin diseases include several circumstances like herpes simplex, eczema, herpes zoster, leucoderma, acne, insect dermatitis, ringworm, contact dermatitis, drug rashes, erythema multiforme, pityriasis rosea,

pruritus cutis, scabies and many others without distinct symptoms. Contemporary medicines used in the cure of skin diseases have consequences. Traditional medicine uses several plant species for treatment of skin diseases caused by contagious germs. The method of ethnobotanical studies is reported to show greater percentage yield of bioactive useful medicinal compounds over other methods of random selection and screening^[9].

This survey will focus on Keffi metropolis. People of this area are accustomed with local herbs and hold a flamboyant knowledge base with reference to the use of the herbal plants to treat various diseases.

The aim of this survey is to document medicinal plants, assist Phytochemist, Pharmachemist and pharmacologist in developing new drugs from their result and outcome used in the management of dermatosis in Keffi and discover views towards designated management of these sources.

2. Materials and Methods

2.1 Study site

Keffi is a populated place in Nassarawa State, Nigeria with the region font code of Africa/Middle East. It is located at an elevation of 338 meters above sea level and its population amounts to 85,911. Its coordinates are 8°50'55" N and 7°52'25" E in DMS (Degrees Minutes Seconds) or 8.84861 and 7.87361 (in decimal degrees). Its UTM position is LQ77 and its Joint Operation Graphics reference is NC32-14.

2.2 Ethnobotanical Survey

The survey was conducted among Hausa/Fulani tribes found in Keffi. The Medicinal plants reported in this research are based on interview and interaction with herbalist, healers, spiritualist, hunters and farmers. Participants are within the age range of 30 – 70 years and are a total of 17 (14 men and 3 women) with a minimum of 10 year experience. The plant materials were collected by accompanying practitioners and making collections of the identified plants used in the medicinal practice. The plants were identified by the Plant Science and Biotechnology Unit of the Biological Science Department, Faculty of

Natural and Applied Sciences, Nasarawa State University, Keffi following collection. During the interviews, the local names of the plants, the part(s) used, the method of preparation and application/dosage and duration of treatment (where specific) were recorded. Information gathered was crosschecked with other practitioners in the locality.

Plant Remedies Practiced by Keffi people in the management of dermatosis is listed in Table 1. The plants are arranged in alphabetical order of their scientific names, family, local names, part used, habit, and the frequency of citation.

2.3 Data analysis

Collected data were carefully checked by the researcher for completeness and reliability. Descriptive statistics such as frequencies and percentages were used in the analysis of the data.

4. Results

This survey has identified plants useful in the management of dermatosis presented in Table 1 and the families of the plants were shown. The current research contains 37 species of ethnomedicinal plants distributed in 35 genera belonging to 18 families used commonly in the management of dermatosis. For each of the plant species' scientific name, methods of preparation, administration and ailments treated are provided in Table 2, it should be noted that this is only a representative of Hausa/Fulani folk medicine for the management of dermatosis, there may be a number of variations depending on study area. There is a rich variety of approaches employed in the treatment of dermatosis. The total of 37 medicinal plants used for managing dermatosis, 2

(5.4%) bulbs; 9 (24.3%) herbs; 9 (24.3%) shrubs; and 17 (45.9%) trees separately.

It was observed that, the Hausa/Fulani's used almost all parts of the plant in ethnomedicine. Plant material such as roots, stems, leaves, flowers, fruits, bark or seed, are used as whole/ portion/ fine particle/ extract. In terms of proportion in one- hundredths distribution of plant parts used, the percentages are as follows, Bark – 11 (29.7%); Leaves – 21 (56.8%); Root – 4 (10.8%); Seed – 1 (2.7%); Whole plant – 2 (5.4%). Several herbal preparations to manage dermatosis are produced by extraction, fractionation, purification, concentration, or other physical or biological processes. They also include preparations made by crushing, decoction, steeping, poultice, mixing, powder, infusion, peeling or heating herbal materials in other biological extracts, liquor beverages and/or honey, or in other materials such as cow/ cow urine/milk *et cetera*. The most common method used for administering medicine is Extract (40.5%) followed by paste (37.8%) and decoctions (21.6%).

The listed 37 plants alleviate and/or cure as many as 72 different types of skin diseases. A maximum of 8 plants are used to treat measles, 6 plants for eczema, 10 plants for small pox, 6 plants each for chicken pox and ringworm respectively, 5 plants for scabies, 4 plants each for skin cancer and leprosy respectively, 2 plants for *Candida albicans* and 14 for other skin infections. Single plant source was used for treating skin diseases like acne, pimples, odour, inflammation, injuries, rashes and dandruff and wounds respectively.

Table1: List of plant remedies practiced by Keffi people in the management of dermatosis

Scientific name	C. N.	Family	Local name	Part used	Habit	F. C.
<i>Acacia tortilis</i> Hayne	22 AL	Mimosoideae	Námijin bágáruwáá (H) / bulbi baleehi (F)	Root	Tree	18
<i>Allium cepa</i> L.	36 AL	Amaryllidaceae	Álbásáá (H)/ tingyere (F)	Whole plant	Bulb	29
<i>Allium sativum</i> L.	11 AL	Amaryllidaceae	Táfánnúúwáá (H)/ arngalaa-re /-je (F)	Whole plant	Bulb	47
<i>Annona senegalensis</i> Pers.	30 AL	Annonaceae	Gwándán dàájìi (H)/ dukuu-hi /-je ladde (F)	Leave	Shrub	24
<i>Azadirachta indica</i> A. Juss	09 AL	Meliaceae	Dóógón yááròò (H)/ ganyi (F)	Leave	Tree	76
<i>Calotropis procera</i> Aiton	28 AL	Asclepiadaceae	Túmfaáfiiyáá (H)/ ba(m)bam-	Leave	Shrub	59

			bi/e (F)			
<i>Carica papaya</i> L.	37 AL	Caricaceae	Gwándà(H)/dukku-hi/je (F)	Seed	Tree	41
<i>Citrus aurantifolia</i> (Christm.) Swingle	14 AL	Rutaceae	Lèèmóó (H)/ lemmu-re/je (F)	Leave	Tree	35
<i>Commiphora kerstingii</i> Engl.	21 AL	Burseraceae	Árarráábii (H)/ kaabii-hi/je	Root	Tree	65
<i>Diospyros mespiliformis</i> Hochst.	01 AL	Ebenaceae	Báròò (H)/ nelbí (F)	Bark	Tree	53
<i>Eugenia caryophyllus</i> L. Merrill.	19 AL	Myrtaceae	Karanho (H)/ gurumbal (F)	Leave	Tree	41
<i>Euphorbia convolvuloides</i> Hochst.	29 AL	Euphorbiaceae	Nòònòn kùrciyáá (H)/ yindamhi (F)	Leave	Herb	35
<i>Ficus thonningii</i> Blume	05 AL	Moraceae	Céédíyáá (H)/ biskee-hi/je	Bark	Shrub	65
<i>Gossypium spp.</i> L.	32 AL	Malvaceae	Áudúgáá (H)/ li'ee-re/je (F)	Leave	Shrub	29
<i>Guiera senegalensis</i> J. F. Gmel	17 AL	Combretaceae	Sààbàràá (H)/ geelooki (F)	Bark	Shrub	53
<i>Hibiscus cannabinus</i> L.	35 AL	Malvaceae	Kéékáshéshè (H)/ gabaywol (F)	Leave	Herb	71
<i>Leucas martinicensis</i> (Jacq.) Ait. f.	03 AL	Lamiaceae	Dáddóóyàr karee (H)/ (e)risku (F)	Leave	Herb	53
<i>Ludwigia octovalvis</i> L.	31 AL	Onagraceae	Shààshàátáú (H)/	Root	Herb	24
<i>Mangifera indica</i> L.	27 AL	Anacardiaceae	Màngwàrò (H)/ mangoroo-hi/je	Bark	Tree	59
<i>Mitracarpus hirtus</i> L. (De)	13 AL	Rubiaceae	Gòògàá máású (H)/ gududal (F)	Leave	Herb	71
<i>Moringa oleifera</i> Lam	06 AL	Moringaceae	Zóógálé (H)/ gaware (F)	Leave	Tree	76
<i>Nauclea diderrichii</i> (De Wild. & T. Durand) Merrill	33 AL	Rubiaceae	Táfááshíyá (H)/	Leave	Tree	29
<i>Ocimum basilicum</i> L.	16 AL	Lamiaceae	Dáddóóyá (H)/ urngol (F)	Leave	Herb	47
<i>Ocimum gratissimum</i> L.	24 AL	Lamiaceae	Dáddóóyá tá gidáá (H)/ kacukacunga (F)	Leave	Herb	41
<i>Parkia biglobosa</i> (Jacq.) R.Br. ex G.Don	04 AL	Fabaceae	Dòóráwá (H)/ naree-hi/je (F)	Bark/ Leave	Tree	94
<i>Prosopis Africana</i> (Guill. & Perr.) Taub.	20 AL	Fabaceae	Kírýá (H)/ kahi (F)	Bark	Tree	41
<i>Pseudocedrela kotschyii</i> (Schweinf.) Harms	15 AL	Meliaceae	Tùùnàs (H)/ boodi (F)	Bark/ Leave	Herb	18
<i>Psidium guajava</i> L.	23 AL	Myrtaceae	Góóbàá (H)/	Leave	Shrub	82
<i>Securidaca longepedunculata</i> Fres.	08 AL	Polygalaceae	Sányáá (H)/ aalali (F)	Root	Tree	76
<i>Senna occidentalis</i> L.	12 AL	Fabaceae	Táfásáá (H)/ tabsahi (F)	Leave	Herb	65
<i>Sterculia setigera</i> L.	18 AL	Malvaceae	Kúkkúúki (H)/ bofo-ri/re (F)	Bark	Tree	29
<i>Striga hermonthica</i> (Delile) Benth.	25 AL	Orobanchaceae	Wùtááwùtáá (H)/ duule/li (F)	Bark	Tree	53
<i>Vernonia amygdalina</i> Delile	02 AL	Asteraceae	Shiwáákáá (H)/ kadkadde (F)	Leave	Shrub	65
<i>Vitellaria paradoxa</i> Kotschy	10 AL	Sapotaceae	Kádéé (H)/ karee-hi/je (H)	Bark	Tree	29
<i>Waltheria indica</i> L.	34 AL	Malvaceae	Hánkúfáá (H)/ kafaffi (F)	Leave	Shrub	29
<i>Ximenia Americana</i> L.	26 AL	Olacaceae	Tsáádá (H)/ ca6buu-li/le (F)	Bark	Shrub	12
<i>Ziziphus spina-christi</i> (L.) Desf.	07 AL	Rhamnaceae	Kúrná (H)/ kurnaa-hi/je (F)	Leave	Tree	47

H= Hausa local name; F= Fulani (Fulfulde) local name; C. N. = Collection number; F. C. = Frequency of citation

Table2: List of plant remedies practiced by Keffi people in the management of dermatosis and the method of application to treat the infection

Scientific Name of the Plant	Plant part used and method of application
<i>Acacia tortilis</i> Hayne	Extract is prepared from root plant with water is taken is taken orally three times a day to treat any skin infection.
<i>Allium cepa</i> L.	Fine particle prepared from the whole plant is taken orally with cow's milk for a couple of days to treat measles, chicken pox and small pox.
<i>Allium sativum</i> L.	Fine particle prepared from the whole plant is taken orally with cow's milk for a couple of days to treat measles, chicken pox and small pox.
<i>Annona senegalensis</i> Pers.	Extract is prepared from leave plant with water is taken is taken orally three times a day to treat small pox.
<i>Azadirachta indica</i> A. Juss	Clean leaves made into a paste with water and the paste is externally applied twice a day to treat skin infection, small pox and chicken pox.
<i>Calotropis procera</i> Aiton	Extract is prepared from leave plant with water is taken is taken orally three times a day to treat eczema, ringworm and scabies.
<i>Carica papaya</i> L.	The seeds are orally taken with cow's milk for acne, eczema, ringworm and scabies
<i>Citrus aurantifolia</i> (Christm.) Swingle	Powder prepared from leave is taken orally with cow's milk for a couple of days to treat measles, skin infection and small pox.
<i>Commiphora kerstingii</i> Engl.	Few of the dried roots are pounded and made into paste with shea butter. It is externally applied twice a day to treat skin infection.
<i>Diospyros mespiliformis</i> Hochst.	Clean leaves made into a paste with water and the paste is externally applied twice a day to treat chicken pox.
<i>Eugenia caryophyllus</i> L. Merrill.	Clean leaves made into a paste with water and the paste is externally applied twice a day to treat skin infection.
<i>Euphorbia convolvuloides</i> Hochst.	Clean leaves made into a paste with water and the paste is externally applied twice a day to treat eczema and ringworm infection.
<i>Ficus thonningii</i> Blume	Few of the dried bark are pounded and mixed with shea butter. It is externally applied twice a day to treat eczema, scabies and the ringworm infection.
<i>Gossypium spp.</i> L.	Extract is prepared from leave plant with water is taken is taken orally three times a day to treat skin cancer.
<i>Guiera senegalensis</i> J.F. Gmel	Few of the dried stem bark are pounded and made into paste with shea butter. It is externally applied twice a day to treat skin infection and rashes.
<i>Hibiscus cannabinus</i> L.	Fine particle prepared from leave is taken orally with cow's milk for a couple of days to treat measles, skin infection and small pox.
<i>Leucas martinicensis</i> (Jacq.) Ait. f.	Extract is prepared from root plant with water is taken is taken orally three times a day to treat skin cancer and leprosy.
<i>Ludwigia octovalvis</i> L.	Extract is prepared from root plant with water is taken is taken orally three times a day to treat any skin injury.
<i>Mangifera indica</i> L.	Few of the dried bark are pounded and made into paste with shea butter. It is externally applied twice a day to treat eczema, scabies and the ringworm infection and inflammation.
<i>Mitracarpus hirtus</i> L. (Dc)	Extract is prepared from root plant with water is taken is taken orally three times a day to treat leprosy and pimple.
<i>Moringa oleifera</i> Lam	Extract is prepared from leave plant with water is taken is taken orally three times a day to treat measles, chicken pox and ringworm infection.
<i>Nauclea diderrichii</i> (De Wild. & T.Durand) Merrill	Extract is prepared from leave plant with water is taken is taken orally three times a day to treat small pox.
<i>Ocimum basilicum</i> L.	Few of the dried stem bark are pounded and made into paste with shea butter. It is externally applied twice a day to treat leprosy.
<i>Ocimum gratissimum</i> L.	Few of the dried stem bark are pounded and made into paste with shea butter. It is externally applied twice a day to treat skin infection and cancer.
<i>Parkia biglobosa</i> (Jacq.) R. Br. ex G. Don	Dried leave ground to paste with small quantity of shea butter; the paste is applied externally on body prior to bathing for 7 – 10 days to treat leprosy, skin cancer, measles, small pox and reduce bad body odour. The bark is used for <i>candida albicans</i> .
<i>Prosopis africana</i> (Guill. & Perr.) Taub.	Extract is prepared from stem bark plant with water is taken is taken orally three times a day to treat small pox.
<i>Pseudoecedrela kotschyii</i> (Schweinf.) Harms	Fine particle prepared from leave is taken orally with cow's milk for a couple of days to treat chicken pox.
<i>Psidium guajava</i> L.	Extract is prepared from leave plant with water is taken is taken orally three times a day to treat skin infection, small pox and measles.
<i>Securidaca longepedunculata</i> Fres.	Paste prepared from root of the plant in water is applied externally once in a day for a week to treat dandruff.
<i>Senna occidentalis</i> L.	Extract is prepared from leave plant with water is taken is taken orally three times a day to treat chicken pox.
<i>Sterculia setigera</i> L.	Few of the dried bark are pounded and cooked with water is taken orally two times a day for chicken pox.
<i>Striga hermonthica</i> (Delile) Benth.	Few of the dried bark are pounded and made into paste with shea butter. It is externally applied twice a day to treat skin infection.

<i>Vernonia amygdalina</i> Delile	Clean leaves are pounded and mixed with lime and potash (paste) for <i>candida albicans</i> .
<i>Vitellaria paradoxa</i> Kotschy	Extract is prepared from leave plant with water is taken is taken orally three times a day to treat eczema, skin infection and ringworm
<i>Waltheria indica</i> L.	Extract is prepared from leave plant with water is taken is taken orally three times a day to treat measles.
<i>Ximenia Americana</i> L.	Extract is prepared from leave plant with water is taken is taken orally three times a day to treat skin infection.
<i>Ziziphus spina-christi</i> (L.) Desf.	Paste made from a dried leaves with shea butter is applied externally to wounds to promote healing.

5. Discussion

This research and previous ones^[9, 10, 11, 12] indicate the plants used for skin diseases and wound healing in various parts of the world by different groups of native communities. Different parts of medicinal plants were used as medicine by the native traditional doctors to treat skin diseases. Among the different plant parts, the leaves were most commonly used for the treatment of diseases followed by the bark, root, whole plant and seed. External therapy were more chosen and used than internal utilization and use of the formulations for the treatment of skin related diseases^[11, 13, 14]. It was observed that, most of the remedies consisted of single plant part and more than one method of preparation. However, this mode of application of plants to cure ailments is safe with no side effects, if taken as per the directed. It is hoped that, this information gives a room for phytochemical studies and research. These plants which are certainly effective could be studied with the objective of developing new drugs from their result and outcome.

6. Conclusion

This research has highlighted various plants remedies practiced by Keffi people in the management of dermatosis, some of which have had their effects proven scientifically, and their compounds recognised.

The knowledge of effectiveness of these botanicals can enhance the healthcare system of the state and the country. The medicinal plants with established compounds can serve as leads to the progress of powerful medicines, while those medicinal plants that are unique to the local government can be a guide to a source of novel drugs.

There is need for government to recognise the traditional medical practice with target of

improving the healthcare delivery system; this research provides remarkable basis of information for drug industries as usefulness of many plants can be a lifetime breakthrough to the scientific world.

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8. Reference

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