



ETHNOBOTANICAL SURVEY OF PLANTS USED IN THE TREATMENT OF PILE IN EDE AND ITS ENVIRONS

¹Ajayi, Oyinlola A., ¹Olufade, Ikeolu I., ¹Owonibi, Sustain K. ¹Ogunsumi Israel, A. and ²Ajayi, Moses A.

¹Department of Biological Sciences, Federal Polytechnic, Ede.

²Statistics Department, Federal Polytechnic, Ede

*Correspondence: oyinajayiforsuccess@gmail.com

Abstract: Applications of local flora had been a major remedy in treating several ailments including pile in developing countries. In most cases pile is an ailment that often defies conventional drugs thus most people resort to herbs in treating pile and pile related issues. Ethnobotanical survey of plants used in treatment of pile was carried out in Ede and its environment using questionnaires and oral interview among 100 participants from major villages in the two Local Governments in Ede. The participants include traditional medicine practitioners, herbs-sellers and other local dwellers. Information from written questionnaire and oral interview were subjected to analysis using various ethnobotanical parameters such as relative frequency of citation (RFC) and fidelity level (FL). The study revealed a total of 37 plant species of 27 families. Curcubitaceae and Fabaceae were found to be most prominent among the families with 3 species each. Other families include 2 species each, of Amarylidaceae, Apocynaceae, Asteraceae, Combretaceae, Lamiaceae and Zingiberaceae. Most of the identified species had been used severally by the traditional medicine practitioners and local dwellers and had been declared to be effective. About 16.21% of the plants are being reported for the first time in treating pile while 83.79% have been documented in literature to be effective in treating pile. Thus, the study revealed the abundance and wide spread use of plant species in treating pile in the study area. These species of plants could serve as treasures for pharmaceutical companies.

Keywords: Curcubitaceae, Ethnobotanical, Fabaceae, local-flora and pile.

1.0 Introduction

Plants are vital components of the ecosystem on which animals depend for food and other useful products. Consequently, plants are natural sources of phytochemicals that are effective in the treatments of several ailments in the society. Herbal medicine is an ancient practice of man especially the rural dwellers. Herbal medicine in Nigeria is identified by diverse names such as folk medicine, traditional medicine and trado-medicine (Soladoye, *et al* 2010). It had been reported that about 70 to 80% of rural population relies on medicinal herbs for health care especially when mother health care fails (Adodo, 2004).

Medicinal plant is any plant which one or more its organ contains substances that can be used for therapeutic purposes or which are precursors for the synthesis of useful drugs. It had been reported that Nigeria flora has and will continue to make vital contributions to the health care of Nigerians (Sofowara, 1996, Soladoye *et al.*, 2010). The indigenous flora had been used by man since time immemorial for curing several ailments thus reducing human suffering. However, the knowledge of the specific active ingredient that cause the relief remains unknown. Thus, the potentially of some of these plants had been well documented and there is general campaign for the conservation of the flora species through various means. Several of these plants had been documented in different parts of Nigeria however, there had not been much literature on the documentation of such especially for the treatment of pile in Ede and its Environs.

Pile is an inflammation of the blood vessels in the anal canal. Pile is produced by the disruption of the anal cushions by the power of defecation, Pile can be internal or external. Internal piles extend inside along the anal while external pile extends close the anus. Internal pile is associated with painless blood loss while the external pile forms a thrombus which is painful and may result in painful blood loss (Thomson, 2001, Mohammed *et al.*, 2013). Pile is normal part of human anatomy which is present in different stages of life from infancy to elderly (Soladoye *et al.*, 2010). It had been reported that about one quarter of all Africans had been affected by pile at

age 50 and that 50% to 85% of the world population can be affected at one time or the other in their life time (Odewo *et al.*, 2014).

Pile affects both male and female, though the impact on males appear to be more severe due to its effect on their sexual ability. The disease can be transmitted from parents to their children, thus some babies suffer from this ailment. Several habits had been suspected to make human to be prone to piles, these include his erect posture while puts a lot of pressure on the veins of the anal and region, over eating and presence of unassimilated bulk foods and intoxicating liquors, artificial flavoring or spices and consumption of white bread (Gavy 1995, Soladoye *et al.*, 2010).

Pile had been conveyed to be an ailment that often defies synthetic drugs (Field Study, 2020). Thus, there is need to increase public awareness on the herbs that can be used in treating piles. The present study is to carry out an in-depth survey of indigenous plants that are used in treating piles and pile related issues in Ede and its environment by interacting with several traditional medical practitioners, herb sellers, local dwellers and other rural dwellers for proper documentation and ethnobotanical analysis.

2.0 METHODOLOGY

Ethnobotanical survey of medicinal plants used for the treatment of pile was conducted in some areas of Ede South and Ede North Local Government, Osun State, Nigeria, where elders in the villages were visited and information was given about the village history and names of the traditional medicine practitioners who were residing there. Information was obtained from the elders, herbal sellers, traditional medicine practitioners and others by means of semi-structured questionnaires and oral interview. The popular villages within Ede that were visited include: Babanla Agate (Obada side), Kuye (Orita Oloki), Jagunjagun (Akala side), Alajue 1 (Agip to sawmill and Cottage junction axis), Alajue 11 (village), Olodan (village), Babasanya (CAN Tower), Oloki Akoda (along Ibadan express way), Sekona (town), Loogun (Permanent site, Federal Polytechnic, Ede and Adeleke University). Oja Timi, Federal Polytechnic Ede, Bode /Talafia Imam, Oke Iresi and Total / Elerin.

The sample size is one hundred people chosen from all the wards in each of the two local governments. The business of herbal medicines production is practiced mostly by the men and women because the knowledge was inherited from their fore-fathers who took it as a generational business. Purposeful sampling method was also used in picking the appropriate plant used in pile treatment (Lawal *et al.*, 2020).

The map of study area is shown in figure below:



Figure 1A: Map of Nigeria showing Osun State (Goggle map) study area (Audu *et al.*, 2015)

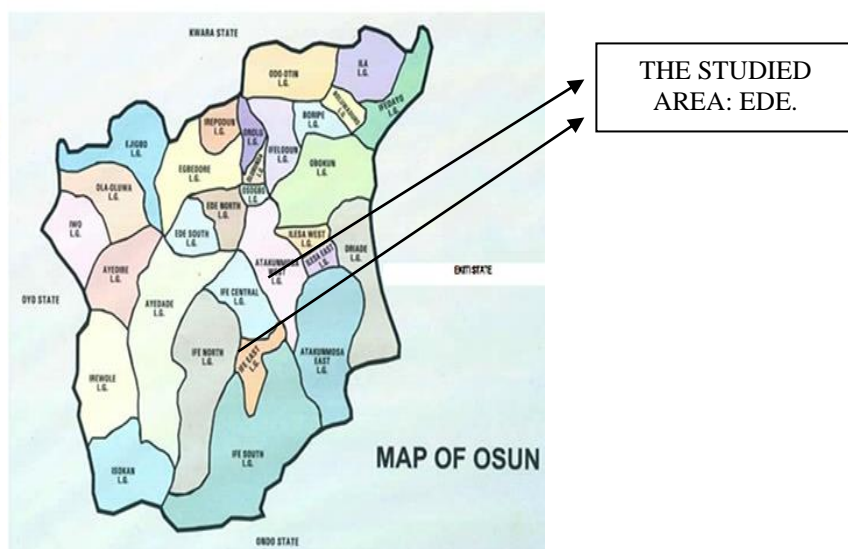


Figure 1B: Map of Osun Showing the study area

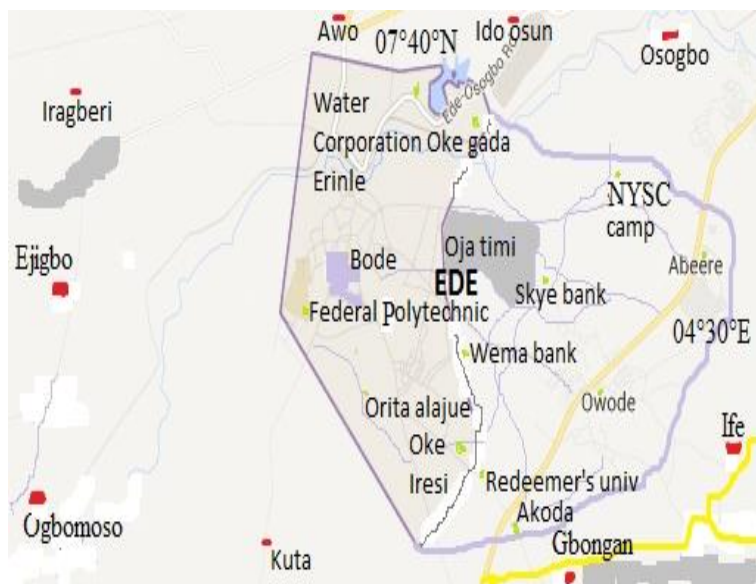


Figure 2: Map of Ede and its Environs (Audu *et al.*, 2015)

The demographic biodata of the participants is presented in Table 1.

Table 1: Demographic biodata of the Participants from Ede and its Environs

Biodata	Group	Number in Ede North	%	Number in Ede South	%
Gender	Male	60	60	60	60
	Female	40	40	40	40
Age (Years)	>25	5	5	3	3
	25-50	40	40	37	37
	50-75	50	50	58	58
	< 75	5	5	2	2
Residence	Rural	85	85	87	87
	Urban	15	15	13	13
Occupation	Herb selling	22	22	24	24
	Traditional Healing	18	18	18	18
	Trading	18	18	20	20
	Farming	42	42	38	38

Some of the plants were collected from the wild pressed and dried. The collected samples are treated with mercuric II chloride to reduce the fungal load. Identification and authentication of the plant specimens was done by at the herbarium of the Botany department, Obafemi Awolowo University. A field note showing the plant name and description, place and date of collection, name of collector, habit and local names of the plant species, was also attached to each herbarium specimen.

The information obtained on plants used in treating piles in the study area were analyzed using two ethnobotanical indices, relative frequency of citation (RFC) and fidelity level (FL) for plants species in the two local governments in the study area (Tardio and Manuel, 2008).

$RCF = FC/N$ Where FC = frequency of mention and N = Number of participants in the survey.

$FL = Ip/Iu \times 100$ where Ip = total number of participants that claimed a use of certain plant species to treat pile and Iu = total number of participants in the survey according to Friedman *et al.* (1986) as reported by Lawal *et al.* (2020).

3.0 Results and Discussion

The summary of plants used in treating piles in Ede and its environs are presented in Table 2. The table shows the local name, the botanical names, the common names, the part used the RFC and FL. The ethnobotanical survey revealed 37 species that are related to 27 families as shown in Figure 1. The most prominent families are Curcubitaceae and Fabaceae with three species each. This is followed by the Amarylidaceae, Apocynaceae, Asteraceae, Combretaceae, Lamiaceae and Zingiberaceae with two species each. Other families are represented by one species. Odewo *et al.* (2014) documented 20 species of medicinal plants used for treating pile in Ago Owu Forest Reserve, Osun State, Nigeria. These include *Argeratum conyzoides*, *Ficus exasperata* and *Momordica charantia* as reported in the present study (Table 2). However, most of the plants documented by Odewo *et al.* (2014) were not reported in this study probably because they are not present in Ede and its environs or they are recognized by the participants as being used in treatment of pile. Meenakshi and Arunima (2014) documented *Momordica charantia* as one of the medicinal plants used in pile treatment in India.

S/No	YORUBA NAME	COMMON NAME	BOTANICAL NAME	FAMILY NAME	PARTS USED	RFC	FL %
1.	Alubosa	Onion	<i>Allium cepa</i> L.	Amarylidaceae	Root	0.07	7
2.	Alubosaayu	Garlic	<i>Allium sativum</i> L.	Amarylidaceae	Root	0.25	25
3.	Eeru alamo	Ethiopian pepper	<i>Xylopia aethiopica</i> L.	Annonaceae	Pod & Seed	0.35	35
4.	Esoabeere	Miracle seed	<i>Picralima nitida</i> T. Durand and H. Durand	Apocynaceae	Fruit	0.05	5
5.	Orira	Poison Devil's pepper	<i>Rauwolfia vomitoria</i> Afzel.	Apocynaceae	Bark	0.03	3
6.	Egboakogun	Dutchman's pipe	<i>Aristolochia ringens</i> Vahl.	Aristolochiaceae	Root	0.35	35
7.	Akintola	Siam weeds	<i>Chromolaena odorata</i> (L) King, R.M and Rob, H	Asteraceae	Shrub	0.25	25
8.	Ewe ako ibepe	Pawpaw	<i>Carica papaya</i> Linn.	Caricaceae	Leaves	0.27	27
9.	Egbosapo	Murderer's mat	<i>Anthocleista vogelii</i> Afzel	Gentianaceae	Bark	0.03	3
10.	Epo okuku		<i>Pteleopsis suberosa</i> Engl.& Diels	Combretaceae	Bark	0.20	20
11.	Afara	Shingle wood	<i>Terminalia superba</i> Engl.& Diels	Combretaceae	Leaves	0.04	4
12.	Ewe bara	Bitter apple	<i>Citrullus colocynthis</i> (L.) Schrad	Curcubitaceae	Leaves	0.07	7
13.	Ejinrin wewe	Bitter gourd	<i>Momordica charantia</i> Linn.	Curcubitaceae	Leaves	0.70	70
14.	Tagiri	Pseudolocyth	<i>Adenopus hreviflorus</i> Benth.	Curcubitaceae	Juice	0.05	5
15.	Isu ibakaa	Water yam	<i>Dioscorea alata</i>	Dioscoreaceae	Tuber	0.02	2
16.	Ewe Lapalapa pupa	Bellyache bush	<i>Jatropha gossypifolia</i> Linn.	Euphorbiaeaceae	Leaves	0.50	50
17.	Orin ayan	African mesquite	<i>Prosopis Africana</i> Guill and Perr.	Fabaceae	Stem	0.07	7
18.	Ewe asun	Senna	<i>Cassia senna</i> Linn.	Fabaceae	Leaves	0.10	10
19.	Orogbo tutu	Pigeon pea	<i>Cajanus cajan</i> (L) Millsp.	Guttifereae	Root	0.03	3
20.	Epaikun	Curculigo	<i>Curculigo pilosa</i> (Schum and Thonn)	Hypoxidaceae	Fruit	0.02	2
21.	Efinrin wewe	curry leaf	<i>Thymus vulgaris</i> Linn.	Lamiaceae	Leaves	0.70	70
22.	Egbo aidan	West African laburnum	<i>Senna sieberiana</i> Dalziel	Fabaceae	Stem/Bark	0.40	40
23.	Owu	Western India cotton	<i>Gossypium arboretum</i> Linn	Malvaceae	Seed	0.20	20
24.	Egbo ato	Verger	<i>Chasmanthera dependens</i> Hochst	Menispermaceae	Root	0.04	4

25.	Kanafuru	Cloves	<i>Syzygium aromaticum</i> Linn.	Myrtaceae	Seed	0.70	70
26.	Aran ope	Red oil palm	<i>Elaeis guinensis</i> Jacq.	Arecaceae	Leaves	0.50	50
27.	Maflowokanmo mi	Mexican poppy	<i>Argemone Mexicana</i> Linn.	Papaveraceae	Juice	0.03	3
28.	Iyere	Black pepper	<i>Piper nigrum</i> Linn.	Piperaceae	Seed	0.80	80
29.	Osanwewe	lime	<i>Citrus aurantifolia</i> Chritism	Rutaceae	Fruit	0.50	50
30.	Oruwo	Brimstone tree	<i>Morinda lucida</i> Benth	Rubiaceae	Leaves	0.80	80
31.	Ata ile	Ginger	<i>Zingiber officinale</i> Roscoe	Zingiberaceae	Rhizomes	0.90	90
32.	Atare	Alligator pepper	<i>Aframomum melegueta</i> K. Schum.	Zingiberaceae	Seed	0.50	50
33.	Tiki	Teak	<i>Tectona grandis</i> Linn.	Verbenaceae	Leaves	0.04	4
34.	Eepin	Sand paper leaves	<i>Ficus exasperata</i> Vahl.	Moraceae	Leaves	0.05	5
35.	Efinrin	Scent leaves	<i>Ocimum gratissimum</i> Linn.	Lamiaceae	Leaves	0.95	95
36.	Imiesu	Goat weeds	<i>Ageratum conyzoides</i> Linn.	Asteraceae	Leaves	0.60	60
37.	Ewe taba	Tobacco	<i>Nicotiana tabacum</i> Linn.	Sonanceae	Leaves	0.02	2

TABLE 1: List of plant used in the treatment of piles in Ede and its Environs.
(Field study 2020)

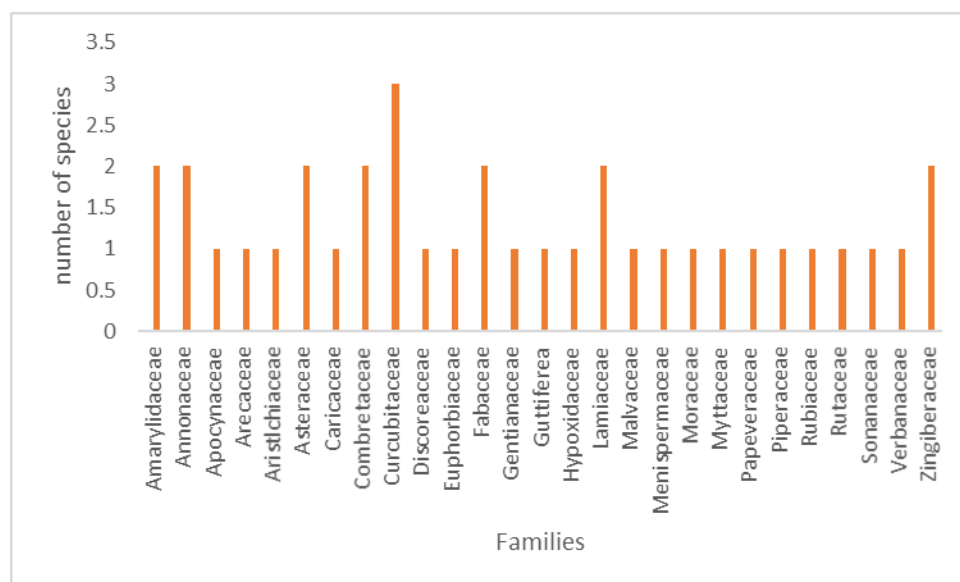


Figure 1: Families of plants used in treating pile in Ede and its environs.

The distribution of parts of the plant used is presented in Figure 2. The most prominent parts of plant used in treating piles is the leaves. There are 14 species (37.8%) whose leaves are used in the treatment of pile. This is followed by the root with 5 species of plants (13.5%) whose roots are used in the treatment of pile. There are 4 plant species (10.8%) whose barks are used in treatment of pile.

The pictures of the medicinal plants / parts used in the treatment of pile in Ede are presented in Plate 1. The six species that are being reported for the first time for the treatment of pile in literature are *Nicotiana tabacum*, *Chasmanthera dependis*, *Curculigo pilosa*, *Jatropha gossypifolia*, *Terminalia superba* and *Rauvolfia vomitoria* while other species had been reported in literature as being effective in the treatment of pile in Nigeria and other part of the world (Odewo et al, 2014).

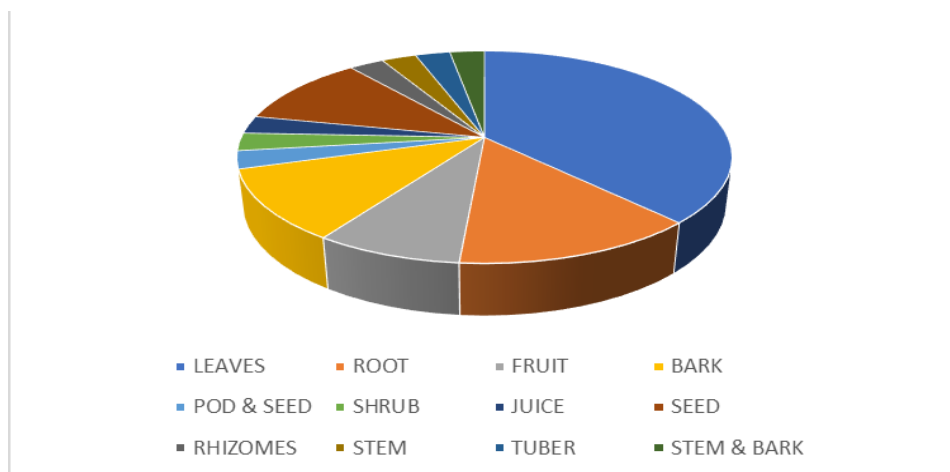


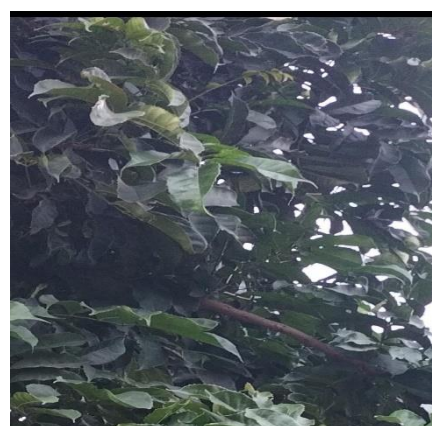
Figure 2: Distribution of Parts of plants used in treatment of pile



Vernonia amygdalina



Aframomum meneguata



Morinda lucida



Chasmsnthera dependi



Syzygium aromaticum



Zingiber officinale



Propolis Africana



Senna siebarina



Argemone mexicana



Citrus aurantifolia



Piper nigrum



Ocimum gratissimum



Jatropha gossypifolia



Adenopus breviflorus



Pteleiosis vogelli



Carica papaya



Argeratum conyzoides



Xylophia aethiopica

Plate 1: Plants species / parts used in the treatment of pile in Ede and its environs

The result of the ethnobotanical survey revealed that the local indigenes of Ede and its environs are dependent on the use of herbs in treating piles. This is in line with the findings of Lawal *et al.* (2020) who reported extensive use of plants for managing health issues in Ede South Local Government. The pharmaceutical companies may take advantage of the phytochemicals present in these herbs in manufacturing an effective drug for treating pile. The leaves are the mostly used part in treating pile. This is in line with Ugbogu and Akinyemi (2004) who reported that about 67% of vegetative parts are used for therapeutic purposes. Also, Ajayi *et al.* (2017) discovered that the phytochemicals are more concentrated in the leaves than the other parts of *T. diversifolia*.

Medicinal plants are extremely valuable for health and they form vital parts of the biodiversity in any ecosystem. However, there are several human activities that may result in loss of some of the vital components of the ecosystem, hence there is need for proper documentation and planned conservation of various medicinal plants around us.

CONCLUSION

This survey indicated and authenticated the fact that rural dwellers relied much on traditional media from herbs around them. The knowledge of the traditional health practitioners could be treasures by which pharmaceutical and different drugs can be manufactured. The treatment of piles with medicinal plants has been more successful without any side effect. However, conservation and propagation of medicinal plants in the environment are vital task to be planned in order to ensure the preservation and maintenance of the floral heritage.

REFERENCES

- Adodo, A. (2004). *Nature power, a Christian approach to herbal medicine* 3rd Edition Donbosco Printing Press, Akure 288p
- Ajayi, O.A., Akinola, Modupe O. and Awodoyin, R.O. (2017). Allelopathic potential of aqueous extract of *Tithonia diversifolia* in biological control of weeds in cowpea cropping system *International Journal of Agriculture and Economic Development* 5 (1): 11-28.
- Audu, S.O., Ejenna, E., Okorafor, I.B., Oyediran, A.G., Njoku, I.O. and Nebo, A.I (2015). Assessment of status of wetland in Ede, Osun State, Nigeria *Journal of Environmental Earth Science* 5: 107-112.
- Erinoso, S. and Aworinde, D. (2018). Current outlook and future promise of ethnobotany in Nigeria: A review and personal observation *African Journal of Plant Science* 12: 73-80.
- Friedman, J., Yaniv, Z., Dafni, A. and Palewitch, D (1986). A preliminary classification of the healing potential of medicinal plants based on a rational analysis of an ethnopharmacological field survey among Bedouins in Negev desert, *Israel Journal of Ethnopharmacology* 16: 275-287
- Gavy, J. and Martins (1995) *Ethnobotany: A people and Plant Conservation Manual* Chapman and Hall U.K. 268pp.
- Lawal, I.O., Olufade, I.I., Rafiu, B.O. and Aremu, A.O. (2020). Ethnobotanical survey of plants used in treating cough associated with respiratory condition in Ede South Local Government Area of Osun State, Nigeria. *Plants* 9 (647): 1-25.
- Meenakshi, P and Arunima (2014): Ethnobotanical survey of traditional medicines for haemorrhoid treatment. *International Journal of Advances in Agricultural Science and Technology* 2(27:74)-84.
- Muhammad, Khalid, H, Muhammad, T., Gulzaman, W. Muhammads, and Muhammad D.J.(2013): Ethnobotanical survey of wild plant used to cure piles in District Gujrat, Punjab Pakistan. *Global Journal of Pharmacology* 7(3): 37- 341.
- Odewo, S. A., Fapojuwomi, O. A., Ajani, B.A. Adepoju, O. D. and Sikiru, G.K. (2014): Ethnobotanical survey of some medicinal plant for curing pile or haemorrhoids in Ago Owu Forest Reserve Osun State. *Nigeria Journal of Natural Science Research* 4 20 13-20.
- Sofowora, A. (1993). *Medicinal plants and traditional Medicine in Africa* 2nd Edition spectrum book Ltd 387-390pp.
- Sofowora, A. (1996). Research on medicinal plants and traditional medicine in Africa *Journal of Alternative Complementary Medicine* 2: 365-372.
- Soladoye, M.O. Adetayo M.O., Chukuuma, E.C. and Adetunji, A.N. (2010). Ethnobotanical Survey of plants used in the treatment of haemorrhoids in south-western Nigeria. *Annals of Biological research* 1(4)1-15.
- Tardio, J. and Manuel, P. (2008). Cultural Importance Indices: A comparative analysis based on The useful wild plants of Southern Cantabria. *Economic Botany* 62: 24-39.
- Thomson, W.H.O (2001) *Oxford Textbook of Surgery*, Oxford University Press, Morris Peter Woodand William C. 2nd Edition.
- Ugbogu, O. A. and Odewo, T.K. (2004). Some medicinal plant in the traditional medicare of Nigeria. *Journal of Forestry Research and Management* 1&2: 29.
- WHO (1991): *Guidelines for the practice of Traditional Medicine TRM /Genera* 6p.