

## Trade and Knowledge Level of Local Herb Vendors in Utilization of Medicinal Plants in Port Harcourt, Nigeria

<sup>1</sup>Oladele A.T, <sup>2</sup>Alade G.O and <sup>1</sup>Hart P. E

<sup>1</sup>Department of Forestry and Wildlife Management, University of Port Harcourt, Nigeria

<sup>2</sup>Department of Pharmacognosy and Herbal Medicine, Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria

### Abstract

**Introduction:** Local trade in herbal medicine materials generates income for the vendors in Nigeria. This study investigated the profitability, return on investment (ROI) and knowledge level on utilization of medicinal plants among herb vendors (HVs) in Port Harcourt metropolis.

**Method:** Ten (10) markets were purposively selected (Creek road, Oil mill, Mile 3, Mile 1, Rumuokoro, Rumuokwuta, New layout, Choba, Oyigbo, Umuebulu 1) based on availability of HVs. Well structured pre-tested questionnaires were administered among 77 randomly selected HVs. Data were analyzed using descriptive statistics, profitability, and ROI. Sensitivity analysis was carried out on ROI to determine the threatened point for each medicinal plant.

**Results:** Female HVs were in the majority (76.6%) with some level of formal education (77.9%). Most of the HVs belong to Igbo (84.4%) and Yoruba (9.1%) tribes. *Aframomum melegueta* and Jedi-Jedi mixture (Pile) recipe have the highest ROI (400.00% and 260.00% respectively). Sensitivity analysis on ROI revealed Jedi-Jedi mixture was viable at 160.00% increase in cost. Knowledge of *Azadirachta indica* as anti-malaria drug was prevalent (74.03%) among the HVs while most of the traded plants are orally taken as decoctions.

**Conclusion:** The study further established there are impressive profits and ROI on local herbal materials vending which sustains livelihood among herb vendors in Port Harcourt metropolis.

**Keywords:** Herb vendors, medicinal plants, knowledge, profitability, sensitivity

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### I. Introduction

Medicinal plants have served man since the early ages of socio cultural development in the areas of disease treatment and management of ill health conditions. Herbal medicines are produced from plants and are commonly referred to as phytomedicines, plant medicines, green medicine, traditional medicine, herbal potions, traditional remedies, plant drugs, and forest health products among others (Alade *et al.*, 2016). According to Okoli *et al.* (2007), herbal medicines evolved from environmental resources, which the people of a community adopted in desperation for survival from diseases. There is growing interest on herbal products due to increasing side effects of synthetic drugs.

Globally, herbal medicines are earning around \$100 billion per annum while annual growth rate is estimated at 6.4% (Gunjan *et al.*, 2008). Up till date, herbal medicine markets keep expanding in all regions of the world. China and India are two of the world's largest markets for medicinal plants (FAO, 2005). An estimated 400 000 tones of medicinal and aromatic plants are traded annually and the demand for them is globally increasing (Leaman, 2006). For example, Mafimisebi *et al.*, (2013) reported that the demand for traditional medicine products is higher than demand for chemical medicines in Japan. Trade in medicinal plant in South Africa is on the rapid increase and valued between R750 million and R1 billion per annum (Tewari, 2004) while Morocco alone exports average of 58.7 tons of medicinal plants annually (Sofowora *et al.*, 2013).

Herbal medicine trade is growing steadily in Nigeria recently due to its' affordability and accessibility (Kadiri, 2008). Following the strangulated and depressed economy, patronage of herbal medicine has witnessed an upsurge locally in Nigeria. Trade in herbal medicine in Nigeria is diverse in form and space; street hawking, display in scheduled open local markets (daily/weekly/fortnight), lock-up shops, motor parks and sometimes in supermarkets. Marketing of herbal medicine is largely unregulated in Nigeria and many other West African countries. Similarly the trade is not documented at local and regional levels hence contribution to GDP is not known. In many organized periodic local markets across Nigeria, provisions are made for sections where herbal medicine ingredients are sold. The HVs usually organize themselves into groups to secure lock-up shops for the display of herbal material stocks either fresh or dry. Also it is a common practice to see apprentice with the HVs

which could include relations sometimes. Large numbers of families depend on medicinal plant trade locally for livelihood and sustenance either as retail or wholesale. Major patrons comprised of Traditional Medicine Practitioners (TMPs), Traditional Birth Attendants (TBAs) and individuals. HVs learn or get their knowledge mostly through long experience of dealing with TMPs and TBAs. It has been documented that good proportion of herb vendors are well knowledgeable in the utilization of medicinal plants (Omobuwajo *et al.*, 2008) especially in treating pediatrics ailments and common diseases such as Malaria, cough and skin diseases. The thrust of this work is to evaluate the herbal vendors' trade and knowledge level in the utilization of medicinal plants in Port Harcourt metropolis.

## **II. Methodology**

### **Study Area**

The study was carried out in Port Harcourt metropolis, Rivers state. The study covered ten local markets (Daily/Weekly) within the metropolis where herb vendors are prevalent. Port Harcourt is the capital city of Rivers state and it is cosmopolitan in nature on coordinates 4° 49' 27" N, 7° 2' 1" E. Port Harcourt urban area has an estimated population of 1,315,169 inhabitants as of 2006 census (FGN, 2009). Port Harcourt metropolis is made up of four Local Government Areas (Port Harcourt City – 538,558, Obio-Akpor – 462,350, Ikwerre – 188,930 and Oyigbo – 125,331). Port Harcourt is the centre of the Nigerian oil economy and consequently urbanized.

### **Sampling Techniques**

Purposive sampling of Ten (10) markets with prevalent herb vendors was done following reconnaissance survey of the city for herb vendors. Herb vendors were then selected randomly within the selected markets. The selected local markets include; Choba (4.8834753<sup>0</sup>Lat, 6.9096775<sup>0</sup>Long), Creek road (4.7599964<sup>0</sup>Lat, 7.0278343<sup>0</sup>Long), Rumuokoro (4.8686283<sup>0</sup>Lat, 7.0140326<sup>0</sup>Long), Oil mill (4.8620725<sup>0</sup>Lat, 7.0678624<sup>0</sup>Long), New layout (4.75767<sup>0</sup>Lat, 7.0332101<sup>0</sup>Long), Umuebulu (4.9026596<sup>0</sup>Lat, 7.1405278<sup>0</sup>Long), Mile 1 (4.7954648<sup>0</sup>Lat, 7.1432305<sup>0</sup>Long), Mile 3 (4.8042846<sup>0</sup>Lat, 6.9916425<sup>0</sup>Long), Rumuokwuta (4.8974064<sup>0</sup>Lat, 6.9076796<sup>0</sup>Long), Oyigbo (4.8787632<sup>0</sup>Lat, 7.1427265<sup>0</sup>Long).

## **III. Data Collection And Analysis**

Data was collected through the use of pre-tested structured questionnaires, personal observation, and face to face interview. Seventy seven (77) local herb vendors were chosen randomly for interview. The collected data was analyzed using descriptive statistical tools such as frequencies, means, and percentages. The profitability and sustainability of the trade was analyzed using Return on Investment (ROI) and sensitivity analysis.

The profitability of the trade was ascertained using the Rate of Return on Investment which depicts the level of profitability of an investment and it is an important criterion in determining the choice of investment. It is given as;

$$\text{Rate of Return on Investment (ROI)} = \frac{\text{TR} - \text{TC}}{\text{TC}} \times 100\% \quad \text{----- Equation 1}$$

Where, TR= Total Revenue, TC= Total Cost

The sustainability of the trade was ascertained by using sensitivity analysis. Sensitivity analysis can be said to be the degree of responsiveness of a project or an enterprise to increase or decrease in one or more variables while other variables remain constant.

## **IV. Results And Discussions**

### **Demographic Characteristics of Herb Vendors in Port Harcourt Metropolis**

The demographic characteristics of herb vendors are shown in Table 1. Females (76.6%) constitute most of the HVs. This is in congruent with the findings of Ogbuehi and Ebong (2015) who reported that 50.3% of herb vendors in Onitsha are females, however the study contradicts that of Adebowale (2014), which states that there are more male herb vendors' in traditional medicines practice in Osun state, Nigeria. The reason why women are prevalent in the business may be attributed to less strenuousness of the business and efforts to support family income.

Age grades of the HVs varies from 21 and stretch above 60 but middle aged vendors' (21- 60) form the bulk of HVs (Table 1). Similar trend was obtained in Ibadan, Nigeria in a related survey of HVs by Ajaiyeoba *et al.* (2003). Some of the HVs were born into the business and stick to it due to its profitability and scarcity of white collar jobs despite of its less dignifying in nature. Even though substantial percentage of the HVs received education to high school level (50.6%); the venture is seen to be better than several white collar jobs where stipends were usually offered as income following the strangulated economy that offers paltry sum of N30000 (about \$66.7 @ N450/USD rate) as monthly salary on minimum wage. The herb vendors are exposed to formal educational opportunities; primary education (27.3%) and Secondary/SSCE/WASC (50.6%). Most HVs are

married (62.3%) and largely from Igbo tribe (84.4%) with few Yorubas (9.1%), the dominance of Igbo stock may be associated with close proximity of Igboland to Port Harcourt metropolis.

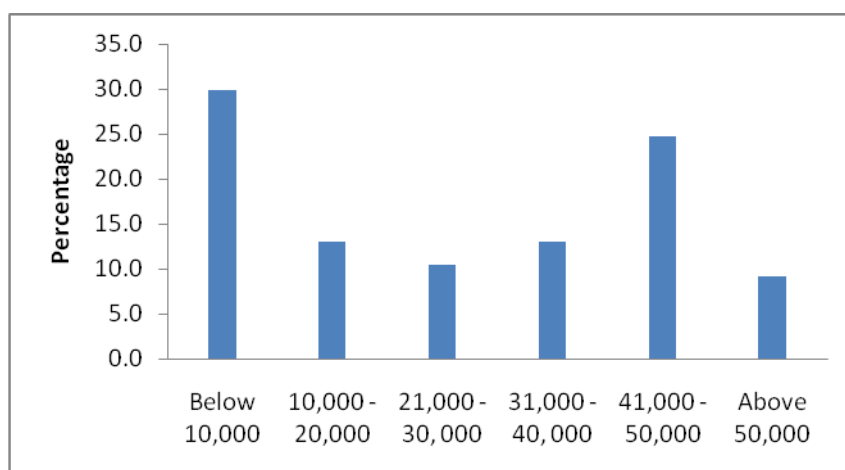
**Table 1: Demographic characters of herb vendors in Port Harcourt Metropolis**

Demographic factors	Frequency	Percentage	
Sex	Male	18	23.4
	Female	59	76.6
	<b>Total</b>	<b>77</b>	<b>100</b>
Age	21 - 40	36	46.1
	41-60	37	48.1
	Above 60	4	5.2
	<b>Total</b>	<b>77</b>	<b>100</b>
Marital status	Married	48	62.3
	Unmarried	17	22.1
	Widow(er)	12	15.6
	<b>Total</b>	<b>77</b>	<b>100</b>
Tribe of Herb Vendor	Igbo	65	84.4
	Yoruba	7	9.1
	Ijaw	4	5.2
	Efik	1	1.3
	<b>Total</b>	<b>77</b>	<b>100</b>
Educational qualifications	Non formal	16	20.8
	Primary	21	27.3
	SSCE/WASC	39	50.6
	Tertiary	1	1.3
	<b>Total</b>	<b>77</b>	<b>100</b>

Source: Field survey 2017

**Start-up Capital for Herb vendors in Port Harcourt Metropolis**

Herb vendors with start-up capital below ₦10000 formed 29.9% while HVs who started the venture with ₦41000 - ₦50000 formed 25.0%. In all, about 90.0% of HVs started the trade with less ₦50000 capital (Fig. 1). Herbal vending does not require huge sum to take off in local markets, the trade is less capital intensive except for wholesalers, start-up capital usually come from personal savings and family donations which attract no interest (Evbuomwan *et al.*, 2013; Oyewo and Badejo, 2014). In some developing countries including Nigeria most micro scale enterprises start up their ventures with less ₦50000 (approximately USD\$ 100 @ ₦450/\$1), hence they are usually categorized as petty trading (Okoh *et al.*, 2009; Fikremariam, 2019)



**Fig. 1: Start-up capital of herb vendors' in Port Harcourt metropolis**

Source: Field survey 2017

**Profitability of herbal medicine in Port Harcourt**

The average profit margin/kg (₦) and return on investment (ROI) of herbal products among HVs in Port Harcourt metropolis were very high (Table 2), The high ROI recorded by HVs may be attributed to high rate of turn over due to frequent utilization by the populace. Patronage of HVs cut across all social classes; poor masses and the elites (Usifoh and Udezi, 2013). Herbal medicine usage is not limited to only low income earners that usually cannot afford orthodox medical care, high echelons in the society also utilize herbal drugs in disease conditions due to cultural acceptability and the erroneous belief of lack of side effects. *Aframomum melegueta* had the highest ROI (400.0%) and closely followed by Jedi-Jedi mixture (260.0%) while the least was recorded for *Citrus aurantifolia* fruits (11.11%). Return on investment (ROI) of medicinal plants used for

prevalent diseases was high in all the markets among HVs in Port Harcourt metropolis; ROI for *Morinda lucida* was 100%, *Azadirachta indica* was also high and profitable. High ROI for *Azadirachta indica* and *Morinda lucida* may be linked to the common usage of the species in treating malaria which is a prevalence disease in the area. The Jedi-Jedi mixture contains several stem barks, roots fruits soaked in water or alcohol used solely to treat pile in adults. Also, it is generally believed among the lowly educated folks that Jedi-Jedi (Pile) disorder has the capacity to weaken manhood during intercourse hence this mixture is usually used with the believe of enhancing manhood performance. This claim is yet to be backed with scientific findings, yet the mixture enjoys high patronage and subsequent returns on investment in the trade. Many workers (Achoja, 2020; Jegede *et al.*, 2019; Njoku, 2015; Kadiri, 2008) have reported high profit margins for medicinal plants materials in Africa and Asian regions. Sensitivity analysis (increasing cost) on ROI of medicinal plants shown in Table 3 revealed the response of profit margin to change in cost of herbal products among HVs in Port Harcourt metropolis. Jedi-Jedi mixture is resilient and profitable at 160% cost increase while *B. nitida*, *C. aurantifolia*, *G. cola*, Ghana soap and *P. guinense* were very sensitive and responded negatively (Profit margin) at 40% cost increase.

Knowledge on the treatment of prevalent diseases such as malaria, skin infections and pediatrics ailments have been reported to be common among herb vendors in Ondo state of Nigeria (Jegede *et al.*, 2019). Several species cited in this study by the HVs on utilization have been documented for similar uses in other areas; *Azadirachta indica* and *Morinda lucida* have also been implicated as anti-malarial remedies across Africa (Njoroge and Bussmann, 2006; Mshana *et al.*, 2001; Iwu, 1993; Ayitey-Smith and Addae-Mensah, 1977). The use of *Anthocleista vogelli*, *Citrullus colocynthis*, for the treatment of sexually transmitted diseases (syphilis, gonorrhoea) has been documented (Omobuwajo *et al.*, 2008; Kadiri, 2008). Most of the plants identified in the study are consumed orally in the form of decoction. Plant species identified in the study were employed both singly and in combination with other plants for efficacy. It is interesting to report our observation that HVs in Port Harcourt metropolis charge specially for consultation and prescription which are usually added to cost of plant materials. Knowledgeable HVs record higher sales due to consultation and prescription services rendered. Many buyers' especially nursing mothers prefer consulting knowledgeable HVs to traditional doctors for pediatrics herbal drugs.

## V. Conclusion

The study further established there are impressive profits and ROI on local herbal materials vending which sustains livelihood among herb vendors in Port Harcourt metropolis. Most of the herb vendors are knowledgeable on medicinal plants utilization based on their interaction with patients and herbalists over time. It also show that the HVs play important role in delivering health care services to the populace by prescribing herbal remedies for prevalent ailments. However, the HVs require awareness on proper storage of herbal drug plants to retain the potency/active constituents of the medicinal plants.

**Table 2: Average cost, sales price, profit margin and ROI of Medicinal plants in Port Harcourt local markets**

Specie	Local name	Average cost /kg(₦)	Average sale price/kg(₦)	Average profit margin/kg (₦)	ROI (%)
<i>Aframomum melegueta</i>	Alligator pepper	10.00	50.00	40.00	400.00
Jedi-jedi Mixture		166.67	600.00	433.33	260.00
Native soap (Black)		15.00	50.00	35.00	233.33
Yoruba soap		40.00	100.00	60.00	150.00
<i>Strophanthus hispidus</i>	Osisikaguru	41.67	100.00	58.33	139.98
<i>Cymbopogon citratus</i>	Lemon grass	21.36	50.00	28.64	134.08
<i>Xylopi aethiopica</i>	Udah	134.80	292.86	158.06	117.26
<i>Vitellaria paradoxa</i>	Ori	47.39	100.00	52.61	111.03
<i>Azadirachta indica</i>	Obirilu	37.92	80.00	42.08	110.99
Aju Mbaise		66.67	137.50	70.83	106.24
Ajuru		50.00	100.00	50.00	100.00
Arbijiji		50.00	100.00	50.00	100.00
<i>Aristolochia repens</i>	Akaugwo	50.00	100.00	50.00	100.00
<i>Citrullus colocynthis</i>	Bara	100.00	200.00	100.00	100.00
Ejeba		50.00	100.00	50.00	100.00
<i>Enanthia chlorata</i>	Owakpa	50.00	100.00	50.00	100.00
Man power root		50.00	100.00	50.00	100.00
<i>Morinda lucida</i>	Ogwummanu	50	100	50.00	100.00
Nju oyi		50.00	100.00	50.00	100.00
Ogumbede		50.00	100.00	50.00	100.00
<i>Uvaria chamae</i>	Black root	50.00	100.00	50.00	100.00
<i>Elaeis guinensis</i>	Kernel oil	370.00	700.00	330.00	89.19
Honey (1litre)		1256.41	2166.67	910.26	72.45
<i>Cocus nucifera</i>	Coconut	300.00	500.00	200.00	66.67

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<i>Tamarindus indica</i>	Ajedi	150.00	250.00	100.00	66.67
<i>Citrus paradise</i>	Grape	30.95	50.00	19.05	61.55
<i>Sorghum bicolor</i>	Blood tonic	31.67	50.00	18.34	57.90
Nzu		33.33	50.00	16.67	50.02
<i>Anthocleista vogelli</i>	Ogbodo	44.44	66.67	22.22	50.00
<i>Monodora myristica</i>	Ehuru	34.17	50.00	15.84	46.35
<i>Zingiber officinale</i>	Ginger	57.41	83.33	25.93	45.16
<i>Python sebae (skin)</i>	Abuba-eke	139.39	200.00	60.61	43.48
<i>Hibiscus sabdariffa</i>	Zobo	35.00	50.00	15.00	42.86
Lime water		700.00	1000.00	300.00	42.86
<i>Allium sativa</i>	Garlic	59.45	83.33	23.89	40.18
Ghana soap		268.75	375.00	106.25	39.53
<i>Garcinia cola</i>	Aki-ilu	60.32	75.00	14.68	24.34
<i>Buchholzia coriacea</i>	Wonderful kola	83.33	100.00	16.67	20.00
<i>Baphia nitida</i>	Moju powder	175.00	200.00	25.00	14.29
<i>Piper guineense</i>	Uziza	208.48	237.50	29.02	13.92
<i>Citrus aurantifolia</i>	Lime	45.00	50.00	5.00	11.11

Source: Field survey, 2017

**Table 3: Sensitivity analysis (increasing cost) on return on investment (ROI) of Medicinal plants in Port Harcourt**

Specie	Local name	Average cost /kg(₦)	Average sale price/kg(₦)	Average profit margin/kg(₦)	ROI (%)	40.0%	80.0%	120.0 %	160.0%
Aju Mbaise		66.67	137.50	70.83	106.24	47.31	14.58	-6.25	
<i>Allium sativa</i>	Garlic	59.45	83.33	23.89	40.18	0.13	-22.12		
<i>Anthocleista vogelli</i>	Ogbodo	44.44	66.67	22.22	50.00	7.15	-16.66		
<i>Azadirachta indica</i>	Obirilu	37.92	80.00	42.08	110.99	50.71	17.22	-4.09	
<i>Baphia nitida</i>	Moju powder	175.00	200.00	25.00	14.29	-18.37			
<i>Cymbopogon citratus</i>	Lemon grass	21.36	50.00	28.64	134.08	67.20	30.05	6.40	-9.97
<i>Citrullus colocynthis</i>	Bara	100.00	200.00	100.00	100.00	42.86	11.11	-9.09	
<i>Citrus aurantifolia</i>	Lime	45.00	50.00	5.00	11.11	-20.63	-38.27		
<i>E. chlorata</i>	Owakpa	50.00	100.00	50.00	100.00	42.86	11.11	-9.09	
<i>Elaeis guinensis</i>	Kemel oil	370.00	700.00	330.00	89.19	35.14	5.11	-14.00	
<i>Garcinia cola</i>	Aki-ilu	60.32	75.00	14.68	24.34	-11.19			
Ghana soap		268.75	375.00	106.25	39.53	-0.33			
<i>Hibiscus sabdariffa</i>	Zobo	35.00	50.00	15.00	42.86	2.04	-20.63		
Honey		1256.41	2166.67	910.26	72.45	23.18	-4.19		
Jedi-jedi		166.67	600.00	433.33	260.00	157.14	100.00	63.64	38.46
Man power root		50.00	100.00	50.00	100.00	42.86	11.11	-9.09	
<i>Monodora myristica</i>	Ehuru	34.17	50.00	15.84	46.35	4.53	-18.70		
Ogumbede		50.00	100.00	50.00	100.00	42.86	11.11	-9.09	
<i>Piper guineense</i>	Uziza	208.48	237.50	29.02	13.92	-18.63			
<i>Python sebae</i>	Abuba-eke	139.39	200.00	60.61	43.48	2.48	-20.29		
<i>Sorghum bicolor</i>	Blood tonic	31.67	50.00	18.34	57.90	12.79	-12.28		
<i>Strophanthus hispidus</i>	Osisikaguru	41.67	100.00	58.33	139.98	71.41	33.32	9.08	-7.70
<i>Uvaria chamae</i>	Black root	50.00	100.00	50.00	100.00	42.86	11.11	-9.09	
<i>Vitellaria paradoxa</i>	Ori	47.39	100.00	52.61	111.03	50.74	17.24	-4.08	
<i>Xylopia aethiopica</i>	Udah	134.80	292.86	158.06	117.26	55.18	20.70	-1.25	
Yoruba soap		40.00	100.00	60.00	150.00	78.57	38.89	13.64	-3.85
<i>Zingiber officinale</i>	Ginger	57.41	83.33	25.93	45.16	3.69	-19.35		

Source: Field survey, 2017

**Table 4: Knowledge of Herb Vendors on Utilization of Medicinal Plants in Port Harcourt**

*Trade And Knowledge Level Of Local Herb Vendors In Utilization Of Medicinal ..*

S/N o	Plant Name (Family)	Local Name (Ibo/Ikwerre)	Disease	Part Used	Preparation	Mode Of Administration	Citation
1	<i>Morinda lucida</i> Benth. (Rubiaceae)	Ogummanu	Malaria Typhoid	Root	It is cooked (Decoction) The stem is cooked with <i>A. indica</i> (Obirilu) leaves and lime	1 glass (15cl) is drunk twice daily. The water can be used to bath	5
2	<i>Elaeis guineensis</i> Jacq. (Palmae)	Palm	Cold	Seed	Cooked with lemon grass and lime The kernel is roasted to extract the oil, it can be mixed with shear butter (Ori) and crude oil	It is used to massage all part of the body	12
			Cough		The oil is mixed with honey or ginger, garlic, salt	A tablespoon at regular interval	5
			Convulsion		Mix the oil with crude oil, garlic and ginger the body	A tablespoon at regular interval	2
3	<i>Anthocleista vogelii</i> Planch. (Loganiaceae)	Ogbodo	Gonorrhoea, Syphilis	Root	Cooked with BTS, black root, ginger, garlic, nkwe and lime water. It can be soaked in hot drink	1 glass (15cl) twice daily until symptoms disappear	21
4	<i>Zanthoxylum xantholzyloides</i> (Lam.) Waterm. (Rutaceae)	Uriata	Gonorrhoea	Root	Cooked with <i>Enanthia chlorata</i> (Owakpa) and Bara	Cooked with obirilu, akaugo, <i>Citrullus colocynthis</i> (Bara), <i>Pterocarpus nitida</i> (Abere), wonderful kola	2
5	<i>Nicotiana tabacum</i> L. (Solanaceae)	Tobacco	Gonorrhoea, syphilis, fibroid	Leaves	The leaves are boiled with nkwe, BTS, mmimi ohia and white potash	1 shot (5cl) twice daily	1
6	<i>Strophanthus hispidus</i> DC. (Apocynaceae)	Osisikaguru		Root	It should be boiled with garlic, wonderful kola, <i>Hillaria latifolia</i> (akaato ) and golden seeds	It can be used to make pap or a shot is drunk twice daily	6
7	<i>Azadirachta indica</i> A. Juss Meliaceae	Obirilu	Malaria, typhoid	Leaves, stem, barks, roots	Cooked with lime lemon grass	1 glass (15cl) twice daily	57
8	<i>Vitellaria paradoxa</i> C. F. Gaertn (Sapotaceae)	Ori	Cough	Seed	It is mixed with honey	A table spoon at regular intervals	5
			Pains			Use it massage all parts of the body	6
9	<i>Garcinia kola</i> Heckel (Clusiaceae)	Aki ilu	Cough	Seed	It is crushed with ginger, and garlic to extract the juice and mixed with honey	A table spoon at regular intervals	17
10	<i>Sorghum bicolor</i> (L.) Moench	Blood tonic	Weak erection,	Leaves	Cooked or soaked in hot drink or	A shot (5cl) twice daily	5
	Poaceae		low blood level		soda water		
11	<i>Cocos nucifera</i> L. (Arecaceae)	Coconut	Smooth skin	Oil	It is cooked with ikeaguagadi	Mixed with ori, python fat it can be applied like that or put in a cream	5 2
12		Jedi-jedi	Dysentery	Bark	Soak in hot water	1 shot (5cl) twice daily	15
13		Jedi-jedi	Jedi-jedi	Bark	Soak in hot water	1 tea spoon for children and a shot (5cl) for adult twice daily	18
			Stomach pain		Boil with garlic and ginger	A cup (15cl) twice daily	2
14	<i>Tamarindus indica</i> L. Fabaceae	Ajedi	Jedi-jedi	Seed	Decoction	1 tea spoon for children and a shot for adult twice daily	2
15		Aju mbaise	Post partum	Leaves and barks	It can be boiled or it can be used to make a light soup	It should be taken 2 times daily	4
16	<i>Python sebae</i> (Pythonidae)	Abuba eke	Scar	Fat		Rub or massage on the scarred part	8
17	<i>Entandrophrama angolense</i> (Welw.) C. DC. Meliaceae	Mmimi ohia	Arthritis	Stem	boiled with white gbogbonise and white potash	1 shot (5cl) twice	2
			Rheumatism		boiled with white gbogbonise and white potash	1 shot (5cl) twice	2
18	<i>Monodora myristica</i> (Gaertn.) Dunal (Annonaceae)	Ehuru	Rheumatism	Seed	Boil it with eyimocha	A cup (15cl) twice daily	7
19		Arbijiji	Pains	Stem	Decoction	A cup (15cl) twice daily	3
20		Nju oyi	Internal heat	Stem	Boiled with ajuru	A cup (15cl) twice daily	3
21	<i>Uvaria chamae</i> P. Beauv. (Annonaceae)	Black root	Pile	Stem	Boiled with jedi-jedi, nkwe, black stone, and aka ugwo	A cup (15cl) twice daily	3

Source: Field survey, 2017

### References

- [1]. Achoja F.O. (2020). Analysis of Marketing of Medicinal and Aromatic Plants in Delta State, Nigeria. Int'l Journal of Agric. and Rural Dev. 23(1): 4752-4757
- [2]. Adebowale, B. (2014). Traditional Medicine Practice: Attitude of Practitioners towards Marketing Principles and Impact on Patronage. European Journal of Business and Management, 6: 2222-2839.
- [3]. Ajaiyeoba E.O, Onocha P.A, Nwozo S.O, Sama W. (2003). Antimicrobial and cytotoxicity evaluation of *Buchholzia coriacea* stem bark. Fitoterapia 74 (7-8): 706-709
- [4]. Alade, G. O., Okpako, E., Ajibesin, K and Omobuwajo, O. R. (2016). Indegenous knowledge of Herbal Medicines among Adolescents in Amassoma, Bayelsa State, Nigeria. Global Journal of Health science, 8(1): 217-237.
- [5]. Ayitey-Smith E and Addae-Mensah I. (1977). A preliminary pharmacological study Winnine: A piperine type of alkaloid from the roots of *Piper guineense*. W. Afr. J. Pharmacol. Drug Res. 4: 7-8.

- [6]. Evbuomwan, G.O, Ikpi, A.E. Okoruwa, V.O and V.O. Akinyosoye (2013). Sources of Finance for Micro, Small and Medium Enterprises in Nigeria. Congress Proceedings of 19<sup>th</sup> International Farm Management Congress, SGGW, Warsaw, Poland, July 2013 Vol. 1, pp 1- 4
- [7]. FGN. (2009). Federal Republic of Nigeria Official Gazette, Volume 96, No 2, pp42
- [8]. Fikremariam Z. G. (2019). Determinant Factors of Finance for Petty Traders in the Informal Sectors: With Reference to Jimma Town, Oromia Region, Ethiopia. *Research Journal of Finance and Accounting*, 10(3): 8-15
- [9]. Food and Agricultural Organisation. (2005). Trade in medicinal plants. Available at [www.Food and Agricultural Organisation.org/docrep/008/af285e/af285eoohtm](http://www.Food and Agricultural Organisation.org/docrep/008/af285e/af285eoohtm) – Retrieved 11 September 2017
- [10]. Gunjan M, Garg, A. K, Singh, R. K, Soni, L, Sanjay, B. K. and Naidu, J.R. (2008). Return to Nature for Efficacious and Safer Medicinal Prospects: A Review. *World Journal of Pharmaceutical Research*, 7(16): 213-228
- [11]. Iwu, M.M., Igboko O.A., Okunji C.O and Tempesta M.S. (1990). Antidiabetic and aldose reductase activities of biflavanones of *Garcinia kola*. *J. Pharm. Pharmacol.*, 42: 290-292.
- [12]. Jegede, C.T, Opatola, M.O and Jegede, N.O. (2019). Cultural Trade: Promoting Entrepreneurial Women Cultural Herbs Traders in Nigeria. *American Journal of Management Science and Engineering*. 4(4): 56-65
- [13]. Kadiri, A. B (2008). "Evaluation of Medicinal Herbal Trade (Paraga) in Lagos State of Nigeria," *Ethnobotanical Leaflets*: Vol. 2008: Iss. 1, Article 90.
- [14]. Leaman, D.J. (2006). Sustainable wild collection of medicinal and aromatic plants: development of an international standard. R.J. Bogers, L.E. Craker, & D. Lange (Eds.), *Medicinal and Aromatic Plants: Agricultural, Commercial, Ecological, Legal, Pharmacological and Social Aspects*. *Frontis* (17): 97-107. Netherlands: Springer. ISBN: 978-1-4020-5448-8. Available at: <http://library.wur.nl/ojs/index.php/frontis/index>.
- [15]. Mafimisebi TE, Oguntade AE, Ajibefun IA, Mafimisebi OE, Ikuemonisan ES (2013) The Expanding Market for Herbal, Medicinal and Aromatic Plants In Nigeria and the International Scene. *Med Aromat Plants* 2: 144 - 153.
- [16]. Mshana R. N., Abbiw D. K., Addae-Mensah I., Adjanouhou E., Ahyi M. R. A., Ekpere J. A., Enow-Rock E. G., Gbile Z. O., Noamesi G. K., Odei M. A., Odunlami A., Oteng-Yeboah A. A., Sarpong K., Sofowora A., Tackie A. N. (2001). *Traditional Medicine and Pharmacopoeia; Contribution to the Revision of Ethno botanical and Floristic Studies in Ghana*. Science and Technology Press, CSIR.
- [17]. Njoku A. (2015). Marketing of Indigenous Herbal Medicines in Ebonyi State, Nigeria, An unpublished Msc Theses, Department of Agricultural Economics, Federal University of Technology, Owerri, Nigeria
- [18]. Njoroge G.N and Bussmann R.W. (2006). Diversity and utilization of Antimalarial Ethnophytotherapeutic Remedies among the Kikuyus (Central Kenya). *J. Ethnobiol. Ethnomedicine* 2: 8.
- [19]. Ogbuehi, H. I and Ebong, O. O. (2015). Traditional Medicine Treatment of Malaria in Onitsha, South East Nigeria. *Greener Journal of Medical Sciences*, 5(1):011-018.
- [20]. Okoh, R.N, Ugwumba C.O.A. and S.U. Isitor. (2009). Microfinance for Small-Scale Enterprises Development in Anambra State, Nigeria: A Gender Analysis. *The Nigerian Journal of Research and Production*, 15(2): 1-15
- [21]. Okoli, R. I., Aigbe, O., Ohaju-Obodo, J. O., Mensah, J. K. (2007). Medicinal Herbs used for Managing some common Ailments among Esan People of Edo State Nigeria. *Pakistan Journal of Nutrition* 6(5): 490-496.
- [22]. Omobuwajo, O. R., Alade, G. O and Sowemimo, A. (2008). Indigenous Knowledge of Women herb sellers in Southwestern Nigeria. *Indian Journal of Traditional Knowledge*. 7(3): 505-510.
- [23]. Oyewo B. M and Badejo S.O. (2014). An Empirical study of the Capital Structure of Micro, Small and Medium Scale Enterprises in Nigeria. *International Journal of Business and Social Science* 5, No 8(1): 281-292
- [24]. Sofowora, A., Ogunbodede, E. and Onayade, A. (2013). The Role and Place of Plants in the Strategies for Disease Prevention. *African Journal of Traditional, Complementary and Alternative Medicines*, 10(5): 210-229.
- [25]. Tewari, S. (2004). The Medicinal plants Economy of South Africa: Profile and Future Perspective. *Journal of Interdisciplinary economics*, 15(3-4): 293-300.
- [26]. Usifoh S.F and A. W. Udezi (2013). Social and economic factors influencing the patronage and use of complementary and alternative medicine in Enugu. *Journal of Pharmacy and Bioresources*, 10(1): 17-24

Oladele A.T, et. al. "Trade and Knowledge Level of Local Herb Vendors in Utilization of Medicinal Plants in Port Harcourt, Nigeria." *IOSR Journal of Business and Management (IOSR-JBM)*, 23(02), 2021, pp. 43-49.