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Demand and market pattern of selected medicinal plants in the southwestern Nigeria

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ABSTRACT

Demand and market pattern of *Aframomum melegueta* K. Schum, *Garcinia kola* Heckel, *Senna alata* (L.) Roxb., *Tetrapleura tetrapetra* (Schum & Thonn) Taub., and *Piper guineense* Thonn & Schum for medicinal purposes were carried out among the states in the south-western part of Nigeria with the study area comprising of Oyo, Ekiti and Ogun states. The population consisted mainly of Yoruba but mixed with other ethnic groups and foreigners who have settled down especially in the state capitals. Primary data were collected through a survey of the medicinal plants in the study area. Structured questionnaires were administered using the participatory method with the buyers and suppliers of the products. The result of the study showed that majority of the respondents (64.79%) prefer daily market to other marketing patterns and over 80% of them offered all plant parts for sale. It was also discovered that the parts of medicinal plants sold depended on location.

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Keywords: Demand, Market pattern, Medicinal plants.

INTRODUCTION

The south-western part of Nigeria is a vast area of rainforest with a high diversity of plants. Small scale farmers in the region use traditional shifting cultivation system to produce over 80% of the food they required (Leaky and Ladipo, 1996). Many rural families in the zone rely so much on wild fruits as food supplement, food condiments and medicinal plants for their health needs (WHO, 2003). Studies conducted in West African sub-region and other areas in the tropics have indicated that products of indigenous trees are marketed locally on a small scale to generate income to supplement a subsistent farming lifestyle (Falconer, 1990). Most of these products are frequently

collected in the natural forests or from wild trees retained on farmlands and are well traded on regional and international markets. The list of these non-timber forest products (NTFPs) is not exhaustible and it depends on geographical regions and climate which dictate the type of vegetation of an area. Simon (1981) observed that the availability of these products depends on environment and that they satisfy different needs in many parts of the world. As a result of the availability these NTFPs low value is placed on them, they are abused, misused and mismanaged. Market studies have demonstrated a strong demand for NTFPs in the humid forests of southwestern Nigeria. Examples of such include *Crysophyllum albidum*,

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Ricinodendron heudelotii, *Irvingia gabonensis*, *Gnetum africanum* and a host of other medicinal plants (Uzo, 1980). Medicinal plants are used to cure some diseases and sickness like mental disorder, malaria fever, sickle cell anaemia, convulsion, rheumatism, etc. This study was, therefore, undertaken to determine the demand and market pattern of some selected medicinal plants in the southwestern Nigeria.

MATERIALS AND METHODS

The study area comprised of Oyo, Ekiti and Ogun states all in the south western part of Nigeria. The population in these states is dominated by Yoruba with the mixture of other ethnic groups and foreigners who had settled down especially in the state capitals. Structured questionnaires containing both open and close ended questions were administered to obtain primary information. Questionnaire administration was also supplemented with oral interview using the participatory method for the buyers and suppliers of the medicinal products. Purposive stratified random sampling technique was used in selecting the local governments in each of the states based on the availability of the targeted respondents in the study area. A total of 405 questionnaires were administered giving a total of 135 for each of the selected states. Information was obtained on the source of the medicinal plants, needs for the selected plants, trends of demand and supply of the medicinal plants in the study area. The data collected were subjected to both descriptive and inferential statistical analyses. Descriptive statistical techniques such as percentages and frequency counts were used to analyse the demographic variables while inferential statistics such as chi-square was used to analyse the data.

RESULTS

The study revealed that majority of the respondents fell in the age group of 51 and above (Table 1), while 20.55%, 24.43%, 8.68% represented age groups 41-50, 31-40 and 21-30 respectively. Small percentages of

the respondents (2.51%) fell within 1-20 years of age. In the study area, 45.48%, 12.80% and 5.74% of respondents attended primary, secondary and tertiary schools respectively while 35.98% had no formal education (Table 1). The source of medicinal plants for marketing and utilization in the study area is shown in Table 3. The sources of medicinal plants for the majority of the respondents are the natural forests. For instance, 68.57%, 11.65%, 9.67% and 3.30% of the respondents obtained their products from the natural forest, secondary forest, family farm and fallow land respectively. The rural people in the study area depend directly on *Aframomum melegueta*, *Garcinia kola*, *Senna alata*, *Tetrapleura tetrapetra*, and *Piper guineense* as major active ingredients in herbal preparations. Food condiments and incorporated medicinal plant species had 43.08% and 44.62% respectively by the respondents for daily use. Lower percentage of the respondents (12.31%) relied on western drugs mainly because of their educational status and/or income level. The market patterns and the nature of demand for medicinal plants in the study area showed are shown in Table 3. About 64.79%, 22.66%, 3.81% and 8.74% of the respondents indicated daily, weekly, annual and periodic markets respectively. Pearson chi-square of 9.95 at probability level of 0.05 indicates that there is no significant difference between the marketing patterns among the states in the study area (Table 6). Regarding the frequency of demand for medicinal plants, a high percentage (81.37%) of marketers indicated that medicinal plants are always on high demand by users while small percentage (18.69%) of the marketers indicated that medicinal plants are rarely demanded (Table 3). The result of the surveys showed that all plant parts are useful and always on demand across the study area (Table 3). The finding indicated that over 80% of the respondents offered all plant parts (leaf, stem, bark, root, fruit and seed) for sale. Chi-square of 46.6 at probability level of 0.05 showed that plant parts sold depend on the location.

Table 1: Age distribution and literacy level of the respondents.

Age group (yrs)	Ogun	Ekiti	Oyo	Total	Percentage
1-20	0	0	11	11	2.51
21-30	15	11	12	38	8.68
31-40	39	23	45	107	24.43
41-50	28	34	28	90	20.55
51 above	64	73	55	192	43.84
Total	146	141	151	438	100
Literacy level					
No formal education	48	71	44	163	35.98
Primary school	80	50	76	206	45.48
Secondary school	20	17	21	58	12.80
OND	6	4	11	21	4.64
HND	0	1	4	5	1.10
Total	154	143	156	453	100

Table 2: Sex distribution of the respondents.

Sex	Ogun	Ekiti	Oyo	Not specified	Frequency	Percentage
Female	119	138	140	-	397	8.25
Male	8	9	5	-	22	12.74
Not specified	-	-	-	36	36	7.9
Total	127	147	145	36	455	100

Table 3: Market pattern, demand and parts of medicinal plants sold.

Market pattern	Ogun	Ekiti	Oyo	Total	Percentage
Daily	105	96	88	289	64.79
Weekly	32	24	45	101	22.66
Annually	3	6	8	17	3.81
Periodic	11	14	14	39	8.74
Total	151	140	155	446	100
Demand for medicinal plants					
Always	127	111	123	361	81.31
Rarely	23	29	31	83	18.69
Total	150	140	154	444	100
Plant parts sold					
Leaf	1	2	3	6	1.43
Roots	8	3	15	26	6.19
Bark	3	0	18	21	5.01
Fruits and seeds	4	18	8	30	7.14
All the parts	123	109	105	337	80.23
Total	139	132	149	420	100

Table 4: Average daily patronage and source of the plants.

Average daily patronage	Frequency	Percentage
1-10	54	11.87
11-20	161	35.38
21-30	100	21.98
31-40	49	10.77
41 above	86	18.90
Not specified	5	1.10
Total	455	100
Source of supply		
Supplier	26	5.71
Family farm	44	9.67
Fallow land	15	3.30
Secondary forest	53	11.65
Natural forest	312	68.57
Not specified	5	1.1
Total	455	100

Table 5: Different uses of the plants.

Preferential use of medicinal plants	Ogun	Ekiti	Oyo	Total	Percentage
Spice only	62	58	76	196	43.08
Spice and medicinal plants	64	71	68	203	44.62
Orthodox drugs	19	15	22	56	12.31
Total	145	144	166	455	100
Reasons for using medicinal plants					
Active ingredient in local concoction	142	115	130	387	85.05
Non active in local concoction	28	25	15	68	14.95
Total	170	140	145	455	100

Table 6: Chi – square test result.

Respondents'	X ² cal	X ² tab	df	Remark
Gender vs. utilization of medicinal plants	9.95	12.59	6	Not significant
Marketing pattern vs. utilization	22.84	21.03	12	Significant
Utilization vs. sources of supply	13.25	9.49	4	Significant
Needs vs. prevalence of medicinal plants	43.77	12.59	6	Significant

DISCUSSION

The age group of the marketers involved in the marketing medicinal plant products was the active, hale and hearty people that possess the required strength and

vigour to face the stress involved in the distribution of the product. It was also evident that majority of the respondents were female which agreed with the findings of Popoola and Oluwalana (1998). Persson (1986) asserted to

the fact that the business of forest products usually classified as minor was always in the hands of women. Women were also specialized in collection, preparation and administration of medicinal plants due to their inherent knowledge of child caring from their mothers or elders. Literacy level of the respondents showed that majority of those in this business attended primary and secondary schools. Hedge et al. (1996) supported this finding that literacy level had a direct bearing on non-timber forest products such that those that were educated tend to have less preference for NTFPs business. This is probably why only small percentage of the marketers (5.74%) who had a higher educational status partakes in the marketing of medicinal plants and participation may even be due to recent awareness on the importance of herbal medicine while majority are the less educated people. Findings also revealed that supply of medicinal plants are from the forest which would have direct bearing on the depletion and degradation of the forest ecosystem as the gatherers were not making any attempt to regenerate these non-timber forest products. Hence, medicinal plants were no longer available in nearby secondary forest and fallow land. The use of medicinal plant for curing ailments is very common among rural dwellers as it was discovered that over 80% of the respondents gathered their herbal requirement for curative purpose. Most of the respondents believed that selected plants were active in local concoction (Table 5) while 14.95% of the respondents had a contrary view. The preference of herbal remedies to orthodox drugs is attributed to the potency, availability, and less harmful effect of the former (Adekunle, 2005). Several plant parts such as bark, roots, leaves, fruits and seeds are usually offered for sale but the patronage depends solely on the taste and preferences of the buyers of the medicinal plant parts. Across the study area however, majority of the population undertake daily market patterns.

This is an indication that marketing of medicinal plants has been the source of their income, a pointer to high dependence on the trade for sustaining their livelihood.

Conclusion

The study has investigated the demand and market pattern of medicinal plants of *Aframomum melegueta*, *Garcinia kola*, *Senna alata*, *Tetrapleura tetrapetra*, and *Piper guineense* from the selected study area in the south-western Nigeria. It was discovered from the study that medicinal plants have a great potential for employment creation, income generation and sustainability of the rural populace. The gatherers and marketers of these medicinal plants do harvest and sell all plant parts such as leaf, bark, root, fruits and seeds without considering any conservation strategies for regeneration. This action then leads to the depletion of these valuable plant parts which are utilized for curing different types of ailments. All hands must therefore be on deck to maintain the concept of sustainability for the continuous production of these medicinal plants and for continuous flow of income for those in the business of medicinal plant parts.

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