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# PREFERENCES FOR SNAIL MEAT AND CONSTRAINTS AFFECTING ITS CONSUMPTION IN EKITI STATE, NIGERIA

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## ABSTRACT

*The objective of this study was to determine the preferred species of the snail to consume by the residents and constraints affecting its consumption in Ekiti State. A consumer survey was conducted in all 16 Local Government Areas of Ekiti State. Ten respondents were selected each from the administrative headquarters of all the sixteen local government respectively making a total of 160 respondents selected for this study. Descriptive statistics such as frequency distribution and percentages were used to describe the data.. The results revealed 62.5% of the respondents preferred the Giant African Snail to other species, 2.5% preferred Tiger Snail, 5% preferred East African Giant Land Snail and 7.5% did not consume any. The main constraints to snail consumption were availability and price. The study concluded that more Nigerians prefer the Giant African Land Snail compared to other types of snail. It may be possible to increase snail consumption if constraints such as availability and price can be reduced. It was recommended Snail farming should be started on a small scale to experience the benefits and challenges of the raising the Giant African Land Snail*

**Keywords**; **preference, snail, meat constraints, consumption**

## INTRODUCTION

Apart from snail being rich in protein contents, it has low or no cholesterol, low fat contents, high contents of iron and calcium. The nutrients needed for life, growth and repair of body tissues are carbohydrates, protein, fats, minerals, water and vitamins, but protein is very low in supply. Protein is from two origins; plant and animal. In support of this, Akunusi, et al, (2007) stated that animal proteins are known to be preferable and better when compared with plant proteins based on their balanced amino acid profile. A rich source of animal protein that has not been tapped for years in Nigeria yet is snail. Snails are invertebrates with soft bodies that are in hard calcerous shells. Chinwuke (2007) observed that snails are not only considered as a delicacy but also a medicinal and dietary therapy for hypertension, conjunctivitis, diabetes and iron-deficiency anaemia. Okafor (2009) also reported that Orthocalcium phosphate extract from snail could cure kidney diseases, tuberculosis, asthma, anaemia, diabetes and certain circulatory disorders. Developing the snail industry/farm is the latest means of bridging the protein deficiency gap presently prevailing in many countries because snail is highly prolific and very nutritive. The nutritional benefits of snail meat cannot be overemphasized because it offers all the amino acids required by man (Adeyeye, 1996). Snail meat is high in protein, iron, and low in fat (Agbogidi *et al*, 2008). Snail consumption has increased in Africa due to more people avoiding red meat for health reasons (Omole et al, 2006). Unlike other extinction- prone wild animals that attract public or government intervention, the Giant African Land Snail has received little to no intervention; if measures like snail farming are not promoted, the Giant African Land Snail may disappear from our forests. As of 2009, there were 1.5 million African immigrants residing in the U.S (McCabe, 2011). With this population, the demand for Giant African Snail will exceed supply because only a few Nigerian grocery stores sell snail meat, and they carry only frozen meat. This creates scarcity and high prices for snail meat at these grocery stores. The Pittsburgh African community is a typical example, where Giant African Snail is only available locally at Global Foods. In Cote d'Ivoire, an estimated 7.5 million Kg of snails are eaten annually (*Cobbinah et al*. 2008) In Cameroon, the government has improved the snail

farming industry by creating snail- processing facilities for local snail consumption and export. These facilities create jobs, provide workshops, and act as a cooperative board by buying snails from local producers France is the world's leading consumer of snails followed by Italy, Spain, and Germany. Therefore, the objective of this study was to determine the preferred species of the snail to consume by the residents and constraints affecting its consumption in Ekiti State

**SNAIL SPECIES USED FOR FOOD**

The popular species found edible for mankind in Nigeria are East African Giant Land Snail (Archatina fulica), Tiger Snail (Archatina archatina) and Giant African Land Snail (Archachatina marginata). In Nigeria, Giant African Land Snail is the most popular; Archatina archatina is considered best for consumption in Ghana. Land snails collected from the forest have traditionally been a major part of the West African diet (Ejidike, 2002).

**Giant African Land Snail** (Archachatina maginata): This is a jumbo sized, oval

Shaped, fast growing specie with yellowish background with stripes having short life span and prefer cooler areas. Unlike other Archachatina species, its shell is less pointed. It is grey, with a head that is darker than the rest of its body. Due to its African rain forest origin, it is best suited for snail farming in Nigeria It has a live body weight of about 800g and it has ability to lay 4 to 18 eggs per clutch.

**Tiger Snail** (Archatina achatina): This specie is conical in shape with dark brown background and stripes. It has ability to lay 150 – 500 eggs/clutch and prefer warmer conditions (up to 30ºC) and can tolerate slightly lower relative humidity conditions of 70-80%. It is adaptable to all ecosystems thus considered the easiest to culture. It has a characteristic stripe pattern and pointed shell. They have long life expectancy of 5-6 years due to their smaller body size. Their eggs which have a high hatchability percentage of 90-100% hatch in 2-3 weeks. It has body weight of 500g.

**East African Giant Land Snai**l (Archatina fulica): This has narrow conical reddish brown shell with faint yellow markings. Egg laying frequency depends on climate particularly during the wet season. It can lay up to 15 - 25 eggs/clutch. It should be noted that the smaller the size of snail the more the eggs laid and the longer its life span. It has the live body weight of about 20 - 45g.

**METHODOLOGY**

The study was conducted in Ekiti State in southwestern Nigeria. Ekiti State is located $7825^0$ –$8820^0$ N, $5800^0$ – $6800^0$ E in the rainforest belt of southwestern Nigeria ( Ekiti State Government(EKSG) 1997) and lies south of Kwara and Kogi States, east of Osun State and bounded by Ondo State in the east and south (EKSG, 1997). The research report is thus based on the questionnaires administered on the residents of 16 Local Government Areas of the State. Ten respondents were selected each from the administrative headquarters of all the sixteen local government respectively making a total of 160 respondents selected for this study. The administrative headquarter of each Local Government Areas were purposively selected for the study. Data were obtained from 160 respondents by random sampling. Descriptive statistics such as frequency distribution and percentages were used to describe the data. The survey covered Ado Ekiti (Ado Ekiti), Efon (Efon Alaaye Ekiti), Ekiti East(Omuo Ekiti), ,Ekiti West (Aramoko Ekiti), Ekiti South West( Ilawe Ekiti) Emure ( Emure Ekiti), Gbonyin (Ode Ekiti), Ido/Osi(Ido Ekiti), Ijero (Ijero Ekiti), Ikere (Ikere Ekiti), Ikole (Ikole Ekiti), Ilejemeje (Iye Ekiti), Irepodun/ Ifelodun (Igede Ekiti), Ise / Orun (Ise Ekiti), Moba (Otun Ekiti), Oye (Oye Ekiti).

**Results and Discussion**

Table 1 shows socio economic characteristics of the respondents. It shows that majority (60%) were male, and 40% were female. 81.25% were married while 18.75 were single. 62.5% were Christian while 37.5 were muslim, 6.25% of respondents indicate they had no formal education and the majority (50%) of the other respondents had post-secondary education. The majority (50%) of survey respondents had an annual household income between ₦1,000,000 – ₦5,000,000.

**Table 1: Socio economic characteristics of the respondents**

| Variables | Frequency | Percentage |
|---|---|---|

| | | |
|---|---|---|
| **Level of education** | | |
| No formal education | 10 | 6.25 |
| Primary education | 20 | 12.5 |
| Secondary education | 50 | 31.25 |
| Post-secondary education | 80 | 50 |
| **Religion** | | |
| Christianity | 100 | 62.5 |
| Islam | 60 | 37.5 |
| **Sex** | | |
| Male | 96 | 60 |
| Female | 64 | 40 |
| **Marital status** | | |
| Single | 30 | 18.75 |
| Married | 130 | 81.25 |
| **Annual household income(₦)** | | |
| Below 500,000 | 48 | 30 |
| 500,000 -1,000,000 | 16 | 10 |
| 1,000,000 - 5,000,000 | 80 | 50 |
| 5,000,000 - 10,000,000 | 8 | 5 |
| Above 10,000,000 | 8 | 5 |

Table 2 shows that 7.5 percent of the respondents did not eat snails, and of the respondents who ate snail, most (62.5%) preferred the Giant African Land Snail and 5% like to consume east African land snail.

**Table 2: Preferred species to consume by survey respondents**

| Preferred species | Frequency | Percentage |
|---|---|---|
| Giant African land snail | 100 | 62.5 |
| Tiger snail | 40 | 25 |
| East African land snail | 8 | 5 |
| None | 12 | 7.5 |
| **Total** | **160** | **100** |

Constraints to snail consumption (indicated by 85 respondents) included availability (17.5%), price (50%), cleaning (25%) and religion/culture (7.5%), as shown in Table 3. The religion as the constraint may be due to the fact that some people see snail as the meat for god

**Table 3: Constraints affecting snail consumption**

| Constraint | Frequency | Percentage |
|---|---|---|
| **Price** | 80 | 50 |
| **Availability** | 28 | 17.5 |
| **Cleaning** | 40 | 25 |
| **Religion** | 12 | 7.5 |
| **Total** | **160** | **100** |

## CONCLUSION AND RECOMMENDATIONS

The study showed that majority of the respondents (60%) were male. Majority (81.25%) were married, majority (62.5%) were Christian, and majority (50%) of the other respondents had post-secondary education. The majority (50%) of survey respondents had an annual household income between ₦1,000,000 – ₦5,000,000. It also showed that majority (62.5%) preferred the Giant African Land .Constraints to snail consumption (indicated

by 85 respondents) included availability (17.5%), price (50%), cleaning (25%) and religion/culture (7.5%). It may be possible to increase snail consumption if constraints such as availability and price can be reduced. It was recommended Snail farming should be started on a small scale to experience the benefits and challenges of the raising the Giant African Land Snail.

Tertiary institutions offering agricultural Science should include snail farming as one of the courses to be taught, institutions of learning at all level teaching heliciculture should have snail farms for skill acquisition by learners and Federal Ministry of Agriculture and Rural Development through Extension agents should undertake massive farmer education on heliciculture and nutritional value of snails.

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