ASSESSMENT OF UTILIZATION OF SNAILS IN OGUN STATE, NIGERIA

ADEOKUN, A.A., OPEIFA, D.A., BABALOLA. K.O., AKINSULU, A.A., ADESINA, M.W.
Department of Agric. Economics and Extension, College of Agriculture and Hospitality Management, Tai Solarin University of Education, Ijagun, Ogun State Nigeria.
Correspondence email: lekchad4u@yahoo.com

ABSTRACT
The pattern of utilization of snails among the people of Ogun state, Nigeria was examined. Multi-stage random sampling technique was used to select 300 respondents for the study. Information was received from the respondents using structured questionnaire. Data collected were analyzed using descriptive tools such as percentages, means, and standard deviation. The hypothesis stated was tested through the use of Chi-square statistical tools. The results revealed that snails were accepted by majority of respondents (66.33%) and were important not only as food that is, source of required animal protein, but also as an ingredient in traditional medicine among other uses. Some socio-economic factors like marital status, age and occupation were found at 5% level of significance to affect the utilization of snails in the study area. It was recommended that the Government, NGOs and individuals should be involved in the production of more snails and processing of snails into forms that will encourage full utilization in Nigeria.

Keywords: snails utilization, traditional processing, cultural values, Ogun state, Nigeria.

INTRODUCTION
Snails belong to a group of animals called Mollusca. Snails had gained worldwide recognition for its usefulness to mankind in various dimensions (Elmslie, 1983). Snails can be consumed as food, useful in medicine and also used for ornamental purposes by rural and urban populace (Awesu, 1980). In Nigeria, the population is increasing at a geometric rate while food production especially meat protein is increasing at an arithmetic rate. Most of Nigeria livestock are at present fed on poor forage with low nutritive value due to lack of adequate fodder caused by natural disasters and variations in climate and soil. There is a big gap between the supply and demand of animal protein. The production of micro livestock such as snail has therefore been stepped up to augment yield from livestock. The place of snail in diet declined in the transition of nomadic to agrarian societies where production was insufficient to feed the increasing population. This is due to clearing of snail's habitat by deforestation. Several other factors like hunting method and increasing demand for snail meat have added to the reduction of the wild population of the specie. Nevertheless, snail is poured as a means of adding varieties to the diet which consisted primarily of cereals and other carbohydrate foods (Odunaiya, 1991). As stated by Shogbola (1986), snail is one of the most important animals reared in the tropics to alleviate poverty and food crisis. Furthermore, there is more to snail's taste quality, and their pharmacological values are used by hypertensive patients, especially in the unfried and seasoned forms. According to Awesu (1980), snails are neither fish nor beef and their consumptions are permitted on meatless days. Mead (1961) further stressed that the

presumed great medicinal properties of snails have provided the motivation for their consumption worldwide. Many people are becoming interested in snail farming, marketing and utilization in Nigeria and this has been well documented. Based on aforementioned relevance of snail to Nigerians and mankind in general, this study therefore considered the processing and utilization of snails in Ogun State. The following hypothesis was tested in the study:

Ho: there is no significant relationship between snail utilization and the following socio- economic factors: education, religion, marital status, age, income and occupation.

MATERIALS AND METHODS

The study was conducted in Ogun State which is one of the states in Southwest, Nigeria. Majorly the questionnaire method was used but information was also retrieved from respondents from past works, documentaries and through focus group discussion. Information was sought on the socio-economic characteristics of the respondents, meats preferences, snail utilization and constraints. Three hundred (300) questionnaires were randomly administered to respondents in the State. The data collected were subjected to simple descriptive statistics. The study hypothesis was tested using chi square (χ^2) to determine relationships among variables.

RESULT AND DISCUSSION

Socio-economic Characteristics of the Respondents

Table 1 shows the socio-economic characteristics of the respondents. Majority of the respondents were male (49.33%), single (57%), students/unemployed (50%), Christians (95.33%), ages between 20 and 40 (68%). Majority of the respondents had secondary education (46.7%) and earns less than ₦30,000 /month. The result showed that educated people consume more snail than the illiterates. The result is in agreement with the findings of Aduloju, *et al* (2019) who established that majority of snail consumers in his study areas were all educated and non-farmers. In line with this study, the adoption of new ideas in the area of snail's production and consumption would be encouraged.

Uses of Snails in the Study Area

Table 2 shows the distribution of the uses of snail in the study area. The result showed that *Limicolaria* (nwarela) is the most abundant in the study area even though the respondents agreed that *Archachatina marginata* is the most consumed. *Typanotonis* (ejula) is also relished in the study area. *Thapsia spp* is not consumed at all in the study area because it is considered to be poisonous. The respondents used snails as food (57.00%) sacrifice (15%), medicine (21%), decoration (2.67%) animal feed (1.67%) and ash trays in hotels (6.67%) and as abrasive for washing plates and pot (7%). Majority (40%) of the respondents consume snail weekly. The result is in agreement with the findings of Akesh and Prabhat (2024) who found out in addition to the nutritional usage that snail meat as well as mucus could be used as a bioactive and health-promoting food component with specific health benefits for humans. Snails can play a crucial role as an alternative nutrient source for livestock, in addition to their applications as food.

Utilization of Snails by the Respondents

Table 3 shows the pattern of utilization of snails in the study area. Various uses of snail do exist in the study area. The survey revealed that snails are very important in traditional medicine in the study area. Various parts of this animal are utilized in preparing concoction for curing numerous ailments. When mixed with other ingredients, the fluid from giant snail is

Journal of Molluscan Research

Table 1: Distribution of Socio-Economic Characteristics of the Respondents

Characteristics		Frequency	Percentage %
Sex	Male	148	49.33
	Female	152	50.67
Marital status	Single	171	57.00
	Married	126	42.00
	Divorced/separated	3	1.00
Occupation	Students/unemployed	150	50.00
	Civil servant	64	21.33
	Traders/business men	86	28.66
Religion	Christianity	286	95.33
	Islam	44	1.33
	Traditional	10	3.33
Age	Less than 20	64	21.33
	20-40	204	68.00
	41 and above	32	10.6
Educational level	No schooling	20	6.67
	Primary	60	20.00
	Secondary	140	46.67
	Tertiary	80	26.67
Income/month	Less than 15,000	160	53.33
	15,000 – 30,000	80	26.67
	Above 30,000	60	20.00
Religion	Christianity	190	63.33
	Islam	12	4.00
	Traditional	98	32.67

used to cure diseases like malaria, headache, asthma, anemia and hypertension. The shells from snails when mixed with other ingredients are used in preparing concoction for pregnant women during labour. Snail is also used as fertility drug and as animal feed. This is supported by Ajayi *et al*. (1978), Shogbola (1986) and Diana *et al* (2024) in a separate study reported that snail was used to cure and prevent diseases like hypertension, anemia and asthma, so also in the treatment of burns, excision wounds and diabetic ulcer. Snails are used as objects for traditional education, that is, in proverbs and stories.

The results of the chi-square analysis for testing the stated hypothesis indicating relationships between selected socio-economic characteristics such as education, religion, marital status, income, age and occupation is shown in Table 4. The result of the analysis showed that there is no significant relationship at 5% level of significance between marital status, age and occupation and utilization of snails in the study area.

Table 2: Distribution of Uses of Snails by Respondents

Factors		Frequency	Percentage (%)
Snail types	*Limicolaria* (ikoto)	86	28.67
	Achatina achatina(Aginiso)	22	7.33
	Lanistes (Isa wuru)	67	22.33
	A. marginata (ekusu)	88	29.33
	A. fulica	-	0.00
	Tympanotonis (elete)	32	10.67
	Thapsis limepe	5	16.67
Consumption	Yes	279	93.00
	No	21	7.00
Uses	Food	171	57.00
	Sacrifice	45	15.00
	Medicine	63	21.00
	Aesthetic uses	8	2.67
	Animal feed	5	1.67
	Ash tray	2	6.67
	Abrasive	1	3.33
	Not used at all	5	1.67
Rate of consumption	Daily	20	6.67
	Weekly	120	40.00
	Monthly	99	33.00
	Occasionally	40	13.33
	Not applicable	21	7.00
Acceptability	Accept	199	66.33
	Not accept	20	6.67
	Neutral	81	27.00
Relationship between religion and snail consumption	Positive	38	12.67
	Negative	180	60.00
	Neutral	82	27.33
Relationship between taboo and snail production	Positive	224	74.67
	Negative	20	6.67
	Neutral	56	18.67

Table 3: The Pattern of Utilization of Snail in the Study Area.

Part of body used	Food	Medicine used	Cultural value and tribal prejudices	Adjunct uses
Whole body	For preparation of pottage and soup	Concoction for infertility, cure for convulsion in babies, concoction for easy delivery	Talisman for protection.	
Foot (meat)	As meat at homes and hotels	Eaten by hypertensive, anaemia and diabetic patients.	Pregnant women are advised not to eat snails	
Shell		For treating dysentery and stomach ache	Used during festival	Includes in animal feed, talisman for decoration (flower use) in homes and ash trays in hotels
Fluid	Ingredient in medicine for curing headache and preparing concoction for body diseases and asthma		Used during festival like Aji and New year	Source of animal calcium

Table 4: Result of chi-square (X^2) analysis for the study area.

Factors	χ^2 calculated	D.F	χ^2 tabulated	Significance
Education	0.33	6	1.640	Accept Ho
Religion	0.42	4	0.711	Accept Ho
Marital status	1.181	4	0.711	Reject Ho
Income	0.433	4	0.711	Accept Ho
Age	0.964	4	0.711	Reject Ho
Occupation	1.24	4	0.711	Reject Ho

CONCLUSION AND RECOMMENDATIONS

It has been established that snails are well consumed in Ogun state, Nigeria. The study further confirmed that snails were utilized for food, medicine, sacrificial animals, aesthetic materials, ash trays and animal feed, some socio-economic factors have been found to influence the consumption of snails in the study area. Some snail species are fully utilized, some partially while some are not utilized at all. The future of snail utilization therefore depends on the development of improved processing technologies and of improved products that can meet the challenging needs of urban people, and its suitability for alternative uses such as animal feeds and glass production. The utilization of snails could be better enhanced by people orientation

and education through vibrant agricultural extension system to provide more information on snail processing and utilization. There should be synergy between agricultural extension experts and the scientists in their efforts towards better utilization of snails and snail products in Nigeria. The likelihood of commercial take-up of new snail resource should be considered and the ability to catch or raise snails at lower rates and in quantities which are economical should be considered.

REFERENCES

Aduloju A. R., Oyelami, B. A. and Alarape, A. B. (2019). Socio-Economic analyses of snail consumption pattern In Ibarapa Central Local Government, Oyo State. *Journal of Forestry Research and Management*. Vol. 16(3).27-33.

Akash,G and Prabhat, K (2024): The uses of Snail . *Journal of Agriculture and Food Research* 18.:101330 who.

Ajayi, S. S., Tewe, O. O., Moriaty, C. and Awesu, M. U. (1978). Observations on the biology and nutritive of African giant land snail *Archachatina marginata*. *E. Afri wildlife J.* 16 (2) 65-89

Awesu M. O. (1983). The potential for snail farming (*Achatina achatina* L). *Snail farming Research* 1 (1): 50-53.

Diana, F., Putra, S and Puta, M (2024): Utilization of Snails for wound healing: A Review *Journal of Tropical Biology* 9(3): 90236.

Odunaiya, O. (1991). Comparative studies on growth performance of the giant African land snail *Archachatina marginata* fed pawpaw leaves, water melon leaves and maize chaff.

Shogbola, G. O. (1986). The African giant Snail. A New Cure of Hypertension. A research paper made available to NAN Guardian June 22, 1996, p 10