

JOURNAL OF RESEARCH IN AGRICULTURE

VOL. 4, NO. 3, 2007



INTERNATIONAL RESEARCH AND DEVELOPMENT INSTITUTE

THE UTILIZATION OF SNAILS (*Archachatina marginata ovum* (S) AND *Archachatina marginata saturalis* (S)) IN CROSS RIVER AND AKWA IBOM STATES OF NIGERIA

Ogogo A. U.^a and Ayodele, I. A.^b

Department of Forestry and Wildlife Res. Mgt., University of Calabar, Calabar, Nigeria
Department of Wildlife and Fisheries Mgt., University of Ibadan, Ibadan, Nigeria

ABSTRACT

The level of utilization of two snail species *Archachatina marginata ovum* (A.m.o.) and *Archachatina marginata saturalis* (A.m.s.) in Akwa Ibom (AKS) and Cross River States (CRS) was determined through questionnaires, interviews and market surveys. Multistage random sampling was used. Seven hundred and fifty questionnaires were distributed (50 each) in the 15 Local Government Areas randomly selected (9 in Akwa Ibom State and 6 in Cross River State) representing 31.25% sampling intensity. Analysis of variance, chi-square and percentages were used to analyse data. Results showed that the number of those who eat snails in the area studied was significantly ($P < 0.05$) higher than those who do not. Age and educational level did not significantly ($P > 0.05$) influence the acceptability of snails for food. The number of snails (A.m.o. and A.m.s.) sold in the study area was estimated to be 4,104, 401, 180,6615 or 656.7 ± 289.1 tonnes amounting to ₦41,044,010 per annum (at ₦10 per snail). Ailments claimed to be cured by snails in traditional medicine included eye pain, asthma, hypertension, anaemia, whooping cough and skin diseases. The snail shell is also used to scare away thieves from one's property. The average price of snails in the dry season was ₦12.50. This was significantly ($P < 0.05$) higher than the rainy season average price of ₦7.50 for the same species. It was recommended that model snail farms be established to increase the supply of snails at all seasons and thus stabilize prices and enhance conservation of the snail species.

Keywords: Utilization, snails Akwa Ibom and Cross River States, Nigeria.

INTRODUCTION

Human consumption of snails is almost as old as man himself and it appears that snails have been eaten in significant quantities in areas where they are now not eaten all (Elmslie 1982^a). West Africa and Western Europe have been identified as the two main area of snail consumption today. Cobbinah (1993) reported that the quantity of snails sold in Cote' de voire was 7,900 tonnes. The actual size and structure of the snail market in Nigeria is not yet known. This information is required for a reliable feasibility study to be carried out in order to encourage increased production of snails in snail farms in order to balance demand with supply and enhance the conservation of snails. Though numerous species of both land and aquatic snails are eaten in the study area, the commonest species being displayed for sale are the *Archachatina marginata saturalis* (S) and *Archachatina marginata ovum* (S). This work was undertaken in order to determine the level of utilization of A.M.S. and A.M.O in the study area for consumption and other purposes.

MATERIALS AND METHODS

A survey of the utilization of two species of the African giant snail *Archachatina marginata ovum* (S) and *Archachatina marginata saturalis* (S) was carried out in Cross River and Akwa Ibom States through the use of questionnaires and market surveys. A trial questionnaire was first prepared and administered to 50 people each in Akwa Ibom and Cross River States. Their responses led to the preparation of the final questionnaire that was fully administered in the area of study. In some of the questions like those concerning the type of species utilized, some explanation was given including showing the respondents samples of the species mentioned in the questionnaire. The question that required the respondents to state their annual income was deliberately left out because most people are scared of giving the correct information regarding their income for fear that such information will be used for their tax assessment. A multiphase sampling method was used in the survey. In the first phase, 9 Local Government Areas representing 30% of the 30 Local Government Areas in AKS, and 6 Local Government Areas representing 33% of the 18 Local Government Areas in CRS were randomly selected. In the second phase, 25% of the towns and villages in the selected Local Government Areas were randomly selected. In the third phase equal number of persons in each of the

(1989) also observed this trend which Elmslie (1982^b) attributed to the aggressive agricultural practices with better weed control, decreasing area under forest (the snails' habitat) and reduced number of rural people with time to go out for snail gathering.

CONCLUSIONS AND RECOMMENDATIONS

More than 50% of the people in the study area utilize snails for food. The utilization of a particular species in an area depended largely on its availability in the area. The quantity of snails sold in the area surveyed totaled 4,104,460 ± 1,806,625 (95% confidence limits) of 656.7 ± 289.1 tonnes amounting to 441.04 Million. Demand for snails outstripped supply. Apart from consumption, the most important use of snails was the use of their shells for decoration. Ailments claimed to be cured by snails in traditional medicine included asthma, eye pain, hypertension, anaemia and whopping cough. It was recommended that model snail farms be established in the area to teach snail farmers modern techniques of snail farming and to increase supply of snails, stabilize prices and enhance the conservation of the edible snail species.

REFERENCES

- Cobbinnah, J. R. (1993): Snail farming in West Africa. A practical guide C. T. A. Publications 50pp.
- Elmslie, L. J. (1982^a): The potential for snail farming. *Span* 25:35 – 40.
- Elmslie, L. J. (1982^b): Snails and snail farming. *World Animal Review* 41:20 – 25.
- Hodasi, J. K. (1984) Some observations on the edible giant land snails of West Africa. *World animal review* 52:24 – 28.
- Mead A. R. (1961): The giant African snail, a problem in economic Malacology. The University of Chicago Press USA 366 pp.
- Oguniaya, O. (1995): The utilization of snails in Nigeria. M.Sc. Thesis University of Ibadan Nigeria.
- Ogogo, A. U. (1990): The replacement of Cassava flour with groundnut Cake in the nutrition of the giant African snail *Archachatina marginata* (Swainson) M.Sc. thesis, Department of Wildlife And fisheries Management University of Ibadan, Nigeria. 92 pp.
- Shogobola, G. O. (1986): The African giant snail. A new cure of hypertension. Research paper presented to the New Agency of Nigeria (NNA). "Guardian" June 22, 1986 PAGE 10.

Table 1: Age of Respondents And Snail Consumption. Do You Eat Snails?

Age group	No response	Yes	No	Total%	Mean
	4	15	6	25	8.33
10-20	3	47	10	60	20.00
21-30	18	230	27	275	91.67
31-40	6	116	20	142	47.33
Above 40	19	112	17	148	49.33
Total	50	520	80	650	
Mean	10^a	104^b	16^a		

Note: Mean values on the same row with different superscripts are Significantly ($P < 0.05$) different.

Table 2: Educational level and snail consumption. Do you eat snails?

	No response	Yes	No	Total%	Mean
Educational level					
No response	8	20	4	32	10.67
Illiterate	0	12	4	16	5.33
FSLC	9	77	16	102	34.00
WASC/GCE	15	195	24	234	78.00
OND	8	78	12	98	32.67
HND/1 st Degree	3	116	19	138	46.00
Higher Degree	6	22	2	30	10.00
Total	49	520	81	650	
Mean	7.0^a	74.28^b	11.57^a		

Note: Mean values on the same row with different superscripts are significantly ($P < 0.05$) different.

Cross River and Akwa Ibom States of Nigeria.

Table 3 Species of Snail Preferred, Reasons For Preferring It And Uses Of Snails.

Species	Freq	%	Reasons freq	%	Uses no response	freq	%
No response	85	13.0	No response	113	No response	84	13.0
A.m.o.	390	60.0	Palatable	338	Livestock feed	63	9.7
A.a	60	9.0	Bigger size	197	Shell used for decoration	274	42.1
A.d	23	3.5	Others	2	Traditional medicine	229	35.2
A.m.s	35	5.4					
Others	58	8.9					
Total	650	100	650	100		650	100

Table 4 Frequency of Eating Snails And Reasons For Not Eating Snails

Frequency	Freq	%	Reasons	Freq	%
Eating of snails	81	12.5	Not eating snails	548	84.3
No response	202	31.0	No response	23	3.6
Once a month	114	17.6	Too expensive	21	3.3
Once a year	18	2.7	Taboo	38	5.8
Very occasionally	233	35.9	Naturally dislike snails	3	0.5
Other	2	0.3	Cannot find them	16	2.3
			Others	1	0.2
Total	650	100		650	100

Table 5 Estimated quality of snails sold in selected Local Government Areas of Akwa Ibom and Cross River States.

L. G. A.	Species Of snail	Mean Wt/ snail (g)	No of snails sold/ annum	Quality of snails sold p.a (tonnes)
Akwa Ibom state				
Urecffiong				
Oruko	A.m.s	150	69330	10.4
Ikofekpen	A.m.s	150	86667	13.0
Abak	A.m.s	150	121330	18.2
Essienudim	A.m.s	150	62400	93.7
Mbo	A.m.s	150	52000	7.8
Ikono	A.m.s	150	55460	8.3
Itu	A.m.s	150	86667	13.0
Uyo	A.m.s	150	121330	18.2
Total			697684.0	188.8
Mean			77420.44	21.0
Cross River State				
Akpabuyo	A.m.s	150	55460	8.3
Akamkpa	A.m.s	150	62400	9.4
Boki	A.m.	200	72800	11.6
Ikom	A.m.	200	57200	11.4
Obanliko	A.m.	200	26000	5.2
Calabar	A.m.s	150	312000	46.8
Total			585860	95.7
Mean			97643.33	15.95
Grand Total			5,174,644	284.5

A.m.s = Archachatina marginat saturalis

A.m.o = Archachatina marginat ovum (swainson)

Department of Forestry and wildlife
Resources Management,