PJN
ISSN 1680-5194

PAKISTAN JOURNAL OF NUTRITION

ANSInet
308 Lasani Town, Sargodha Road, Faisalabad - Pakistan
Mob: +92 300 3008585, Fax: +92 41 8815544
E-mail: editorpjn@gmail.com

Pakistan Journal of Nutrition 5 (5): 474-477, 2006
ISSN 1680-5194

An Assessment of the Factors Influencing the Consumption of Duck Meat in Southern Nigeria

I.T. Oteku[1], J.O. Igene[2] and I.M. Yessuf[1]
[1]Department of Animal Science, Ambrose Alli University, Ekpoma, Nigeria
[2]Department of Animal Science, University of Benin, Benin City, Nigeria

Abstract: Consumer acceptability, consumption pattern, and preference for the duck and its meat products in Southern Nigeria were assessed, using Edo state as a case study. A field survey using about 250 well structured and computer-validated questionnaires were randomly administered to about 200 respondents. Familiarity, degree of likeness, sanitary condition of duck and the consumption constraints were assessed. Also determined were consumption frequency, sensory comparison of duck and chicken meats as well as motivational and preferred methods of preparation of the meat. Duck meat was nevertheless acceptable and rated fairly by most of the respondents. Consumption of duck meat was however constrained by non-availability, non-familiarity, inability to slaughter the live duck and some traditional and religious taboos associated with the meat. There was a significant indication that consumption level of the meat will improve considerably when established duck meat shop and processed meat products are available.

Key words: Acceptability, consumption, duck meat, meat shop, Southern Nigeria

Introduction

A World Bank Assisted National Agricultural Research Strategy Plan (1996-2010) for Nigeria has projected animal protein supply of 5.322g/head/day, for the estimated population of 159 million by 2010. Okojie (1999) reported 3.8g/h/d as animal protein intake in Nigeria against the FAO (2001) recommended minimum requirement of 34g/h/d for a healthy living of humans. Comparatively, Igene (1992) and Lamorde (1993) reported the average animal protein intake per head per day in North America, Western and Eastern Europe as 66, 39, 33 g/h/d respectively.

RIM (1992) and FMEDR (2000) reported that the meat supply situation in Nigeria remained critical in spite of the relatively large animal production of over 13 million cattle, 34 million goats, 24 million sheep, 3.4 million pigs and 104.3 million local poultry and about 20 million exotic poultry. About 1.7 million domestic rabbit and 72 million chickens were also estimated. Ikpi and Akinwunmi (1979) described the development of the poultry industry as the fastest means of bridging animal protein deficiency gap prevailing in Nigeria.

Prominent among the poultry species neglected by the established poultry operators and the local farmers in Nigeria is the duck. It is the yet uncultivated, good source of animal protein, B-vitamins and iron in the country. Furthermore, ducks subsist on low-cost diets and can be used to control weeds in plantations. In spite of these benefits, most commercial and backyard poultry farmers do not consider duck farming to be a worthwhile venture in Nigeria.

This neglect probably arose from the uncertainty and fear, concerning the demand and sale of duck meat products. It is against this background that this survey study was predicated and therefore examines the consumer acceptability, consumption pattern, constraints against consumer preference and the general attitude towards duck and its meat in Nigeria.

Materials and Methods

Location: This experiment was carried out in Southern Nigeria using Edo state as a Case study. About 250 copies of the questionnaires were randomly and extensively distributed to cover the rural locals in the 18 Local government areas of Edo state. The central area (Ambrose Alli University, Ekpoma, Edo State, Nigeria) where the study was coordinated is located at latitude 6.46°N and longitude 6.40°E. It is 370m above the sea level, with distinct rainy (April-October) and dry (November-March) climatic seasons. It has an annual rainfall of 1556mm and mean temperature of 26°C.

Field survey: A field survey was conducted to determine the awareness, attitude, acceptability and preference for the Duck (water bird) and its meat among randomly selected adult populations of Edo state in Southern Nigeria. It was carried out by a well structured and computer validated questionnaire, which was administered randomly to about 250 (males and females) respondents of between 18-70 yrs of age. Data collected included consumer acceptability, preference for rabbit and its meat, factors influencing consumption pattern and among others. About 211 copies of the completed questionnaires were recovered and the data analyzed. The d base IV was used in data analysis and the chi-square test was further used to determine the level of significance at 5% confidence.

Table 1: Familiarity with duck meat

Familiarity characteristics		No. of respondents (frequency)	Valid %
Have you seen duck meat before?			
	Yes	198	93.8
	No	13	6.2
	Total	211	100.0
Have you tasted duck meat before?			
	Yes	131	62.1
	No	80	37.9
	Total	211	100.0
Do you eat duck meat regularly?			
	Yes	70	33.5
	No	139	66.5
	Total	209	100.0

Table 2: Degree of likeness of duck meat

Degree of likeness	No. of respondents (frequency)	Valid %
Liked extremely	24	11.4
Liked	34	16.1
Liked moderately	31	14.7
Liked slightly	27	12.8
Indifferent	43	20.4
Disliked	52	24.6
Total	211	100.0

Table 3: Sanitary condition of the duck

Sanitary characteristics		No. of respondents (frequency)	Valid %
Perceived dirty?			
	Yes	140	67.3
	No	68	32.7
	Total	208	100.0
Dirtiness affects preference?			
	Yes	128	61.2
	No	81	38.8
	Total	209	100.0
Duck meat recommendable?			
	Yes	133	64.6
	No	73	35.4
	Total	206	100.0

Results and Discussion

About 93.8% of the respondents have seen the duck before the time of this investigation (Table 1). About 62.1% have tasted the duck meat while 33.5% eat the meat regularly (Table 4). The high familiarity rate with duck and its meat may be associated with the location of the area investigated, which is largely in the rain forest and derived savannah zones. Rivers and water ponds are numerously scattered in this zone (Southern Nigeria).

About 11.4%, 16.1% and 14.7% of the respondents respectively scored the duck meat as liked extremely, liked and liked moderately (Table 2). About 27% liked the meat slightly and 44.4% were either indifferent or disliked the duck meat. The dislike may be due to the dirty habits of the duck and the indifference may be attributable to the non-availability of the duck meat products. The neglect of duck farming which probably arose from the uncertainty and fear, concerning the demand and sale of duck meat products is perhaps responsible for the non-availability (Ikpi and Akinwunmi, 1979). The frequency of duck meat consumption (per wk) assessment revealed that the rate of intake is very low (Table 4). About 1.9% or less eat duck meat 3 times or more per wk. About 24% of the respondents eat the meat about 2 times per wk and 71% do not eat it at all. This high rate of non-consumption of the duck meat may be due to the constraints mentioned below and the dark colour of the meat as a result of high level of iron content.

Table 4: Frequency of duck meat consumption (per week)

Consumption frequency	No. of respondents (frequency)	Valid %
5 times and above	2	1.0
4 times	2	1.0
3 times	4	1.9
2 times	51	24.4
Not eaten at all	150	71.8
Total	209	100.0

Table 5: Sensory comparison of duck and chicken

Sensory characteristics	No. of respondents (frequency)	Valid %
Tastier:		
Chicken	142	70.3
Duck	60	29.7
Total	202	100.0
Tougher:		
Chicken	66	32.8
Duck	139	67.2
Total	201	100.0
Preferred:		
Chicken	163	81.1
Duck	38	18.9
Total	201	100.0

The respondents agreed that there are definite constraints limiting duck meat consumption (Table 7). These were low familiarity rate with the duck/meat (30.1%), non-availability (28.7%), price (7.7%) and inability to slaughter the duck (4.3). The slaughtering problem may be due to time-consuming preparation procedure of duck meat, which requires culinary skills and some cultural believes among local communities in Southern Nigeria. Barbut (2002) reported that processing industry in Europe is gradually improving the availability and acceptability of non-conventional meats in a large variety of processed ready-meals thus

Table 6: Preferred preparation method of duck meat

Preparation method	No. of respondents (frequency)	Valid %
Boiled-fried:		
Yes	33	71.7
No	13	28.3
Total	46	100.0
Smoke-dried:		
Yes	175	97.8
No	4	2.2
Total	179	100.0
Raw-fried:		
Yes	19	40.4
No	28	59.6
Total	47	100.0

Table 7: Constrains limiting duck meat consumption

Constrain	No. of respondents (frequency)	(Valid) %
Price	16	7.7
Availability	60	28.7
Inability to slaughter duck	9	4.3
Not familiar with duck/meat	63	30.1
No constrain	61	29.2
Total	209	100.0

meeting the demands of consumers. However, about 29.2% of the respondents did not associate any constrain to the consumption of duck meat. Other factors found to influence the low consumption of the duck meat were the sanitary conditions of the bird (Table 3). About 67.3% of the respondents perceived the duck as a dirty bird and agreed that the dirtiness is responsible for their low preference for meat.

About 64.6% agreed that the duck meat is recommendable as one of the ways to address the problem of animal protein shortage in Nigeria if the acceptance could be improved through product development (Table 8). Smoke-dried products were most preferred and followed by boiled-fried ones (Table 6). About 93.1% of the respondents agreed that the preferred motivation methods to improve duck meat consumption are awareness campaign, demystifying myths surrounding duck, exhibition of duck meat products and perhaps increased duck production (Table 6). Sensory comparison of duck meat and chicken revealed that chicken is most preferred. Chicken was found tastier and duck meat was tougher (Table 5).

The believe that the availability of further processed duck meat products in Southern Nigeria could increase the acceptance and increased consumption of the meat underscores the necessity for higher standards in product delivery in order to improve the safety, sensory characteristics and functional properties (Mulder, 1999). Processors should be persuaded to practice improved

Table 8: Preferred motivation methods that could improve consumption

Motivation method	No. of respondents (frequency)	Valid %
Awareness campaign:		
Yes	106	93.8
No	7	6.2
Total	113	100.0
Demystifying myths:		
Yes	36	65.5
No	19	34.5
Total	55	100.0
Exhibition (duck products):		
Yes	62	93.9
No	4	6.1
Total	66	100.0
Increased Duck Production:		
Yes	67	93.1
No	5	6.9
Total	72	100.0

voluntary traceability systems and indicators on labels aimed at enhancing consumer confidence in duck meat products (Bernues *et al*., 2003; Grunert *et al*., 2004).

Conclusion: The constraints, especially the unavailability, inability to slaughter the live duck, the uncertainty and fear, concerning the demand and sale of duck meat products in Southern Nigeria probably limit the acceptance, preference and consumption of the duck meat. The development of appropriate and acceptable duck meat products and the establishment of duck meat drops are likely to improve acceptance and consumption of the meat. In addition, training in the methods of cooking and preparing duck meat products, and substantial advertisement of products is likely to improve acceptance and consumption rates.

References

Barbut, S., 2002. Poultry meat processing and product technology. In: Poultry products processing. An industry guide. CRC Press, 1-29.

Bernues, A., A. Olaizola and K. Corcoran, 2003. Labelling information demanded by European consumers and relationship with purchasing motives, quality and safety of meat. Meat Sci., 65: 1095-1106.

FAO, 2001. Assessment of the World Food Security Situation. Committee on World Food Security. 27th Session.

FMEDR, 2000. Federal Ministry of Economic Development and Reconstruction, Third National Development Plan (1975-1980).

Grunert, K.G., L. Bredahl and K. Brunsø, 2004. Consumer perception of meat quality and implications for product development in the meat sector - a review. Meat Sci., 66: 259-272.

Igene, J.O., 1992. Food technology, National food self-sufficiency and Food-agro indudrialisation: The Nigerian experience. Inaugural Lecture Series. 91/92 session. University of Maiduguri, Nigeria, 5.

Ikpi, E.A. and J.A. Akinwunmi, 1979. The future of the Poultry Industry. Proceedings of the 1st National serminar on Poultry Production. ABU, Zaria, Nigeria, 13-17.

Lamorde, A.G., 1993. Balance diet, wealth and health for all Nigerians by the year 2000. Problems and prospects. 8th Convocation Lecture delivered at Edo State University, Ekpoma, Nigeria. April, 1993. 3-25.

Mulder, R.W.A.W., 1999. Hygiene during transport, slaughter and processing. In: Poultry meat science. Eds., Richardson R I, Mead G C, CABI Publishing, 277-284.

Okojie, J.A., 1991. The role of Governments and Universities of Agriculture in improving animal production and computations in Nigeria. Tropical J. Anim. Sci., 2: 1-7.

RIM, 1992. Resource, Inventory and Management Limited. Nigerian Livestock Resource. Vol. 1. Executive Summary.