

# **CRITICAL ANALYSIS OF RABBIT MEAT CONSUMPTION IN ABIDJAN, COTE D'IVOIRE**

## **Abstract**

**Aims :** The aim of this paper was to reveal the opinion of the consumers of rabbit meat in order to be taken into account in the production systems.

**Study design :** To achieve this goal, a survey is conducted among consumers through a survey-valuation approach.

**Place and Duration of Study :** Survey was undertaken in 13 communes of Abidjan's district between September 2017 and May 2018.

**Methodology :** The survey collected data from 1950 respondents from three age categories (junior, major and senior), ethnic groups targeted from Abidjan's district. In each commune, 150 persons were interviewed, mainly in areas of great meeting such as car and bus stations, markets, restaurants and around schools. The method adopted in this work was random sampling. The data collection was done by self-counting (respondents completed the questionnaire themselves) and interview-assisted methods for each respondent.

**Results :** Results showed that rabbit meat is much appreciated by a large part of population (74.36%). The main buyers of rabbit meat are restaurant managers (35%) and households (35%). Reasons of non-consumption of rabbit meat are unavailability (49%), absence in eating habits (22%) and high cost (20%). Consumers ranked rabbit meat in fourth place compared to other meats (chicken, beef and sheep) consumed in Abidjan. 49.12% found rabbit meat more expensive than other meats.

**Conclusion :** Consumption of rabbit meat can be promoted by making it available. Products of rabbit meat should be made available in stores and market places. The adoption of effective trade strategies such as entrepreneurial training, promotion in mass media, competitive pricing and market diversification, would be a sustainable means of rabbit meat production.

**Keywords** : Rabbit meat, level of consumption, consumers'opinion, preference, availability, feed cost

## **1.Introduction**

The global food market is undergoing many transformations, particularly in developing countries. These transformations are visible in the consumption habits of animal feed products. The change in consumption patterns is influenced by increased nutritional awareness. It also the standard living of a large number of citizens [1 ; 2]. Breeding small animal species can be a good alternative. Indeed, it can significant benefits for households, both for short- and medium-term needs and in the long-term for savings [3]. Rabbit production has been identified as a major source of meat that can contribute to this objective. Rabbit meat is one of the most nutritious white meats available for human consumption. It is lower in fat, cholesterol, and calories, and higher in protein than beef, chicken, turkey, or pork [4]. Nutritionally, rabbit meat has a higher protein (20-21%), low calories (1749 kcal/kg) and low fat content (10-11%) when compared with meat from most livestock species [5]. Furthermore, [6] had reported that rabbit meat has the lowest cholesterol value of 169 mg/100g (dry matter basis) when compared with beef (200 mg), chicken (220 mg) and pork (223 mg) and a low sodium content. Consequently, rabbit meat has been listed in the USDA as an approved meat source for hyper-tensive patients [5]. Because of its nutritional attributes and easy digestion, rabbit meat is often recommended for low-sodium, weight-reduction diets, in diets geared toward senior citizens, persons with heart disease, and those having difficulties digesting other meats [7]. In many developing countries, the rabbit is purposely bred to achieve self-sufficiency in home protein. Unfortunately, the production of rabbits, introduced as an alternative to remedy the shortage of protein, has not received sufficient attention. Despite of numerous economic and feeding potential of rabbit, apparently, Ivorian don't more consume rabbit meat and most of them considered rabbit meat as food of rich persons. These considerations have negative impact on the rabbit meat production. Face these difficulties, we

think that an understanding of attitudes in respect rabbit meat will help its consumption and change consumer attitude towards rabbit meat products. An evaluation of rabbit consumption need to be conducted for an understand of consumer comportment in order to outline possible strategies to ensure a sustainable future for the production of rabbits for commercial meat purposes. Main objective is to reveal the opinion of the consumers of rabbit meat in order to be taken into account in the production systems.

## **2. Material and methods**

### **2.1 Study area**

The survey was carried out in Abidjan communes : Cocody, Koumassi, Treichville, Marcory, Abobo, Yopougon, Attécoubé, Adjamé, Port-Bouet, Plateau, Songon, Anyama and Bingerville, in Côte d'Ivoire, located between Latitude 5 ° 00 and 5 ° 30 North and Longitude 3 ° 50 and 4 ° 10 West. They cover 2120 km<sup>2</sup>, with 5.9 million in habitants.

### **2.2 Consumer survey**

The purpose of the survey was to assess the level of consumption of rabbit meat in Abidjan district. To achieve this goal, a survey is conducted among consumers. The survey collected data from 1950 respondents targeted from Abidjan's district between September 2017 and May 2018. In each commune, 150 persons were interviewed, mainly in areas of great meeting such as car and bus stations, markets, restaurants and around schools. The method adopted in this work was random sampling. The data collection was done by self-counting (respondents completed the questionnaire themselves) and interview-assisted methods for each respondent. The consumption questions were divided into four (4) sections : the first for the profile of the respondent, the second for the rabbit knowledge, the third for the appreciation and the brakes on rabbit consumption and the last section for the population interest in rabbit production.

All the information obtained was treated on SPSS Software Version 17.0. The responses were converted into quantitative data, on which statistical analyses were performed. These quantitative data consisted in the number or/and the percentages of respondent. Then, Chi square test was occurred to determine the socio-demographic influence on the respondents' choices.

### 3. Results and discussion

#### 3.1 Customer base of the rabbit meat

The main buyers of rabbit meat are restaurant managers (35%) and households (35%) (Figure 1). Next, supermarkets and ranchers are the other customers for 15% each. These results show that the rabbit meat customers are relatively varied. But that efforts should be made to improve its availability in supermarkets. In Kenya, the main consumers of the rabbit products are majorly local households, local hotels and restaurants, and about 5 per cent are exported according to [8]. He also further reported that market availability remained the major challenge. Commercial rabbit operations may be encouraged. Indeed, more sophisticated market infrastructure may involve product diversification such as tanned skins and processed meat forms, as well as entrepreneurial training, promotion in mass media, competitive pricing and market diversification. By adopting such a logistical development approach, a greater assurance of the sustainable increase of rabbit meat can be achieved.

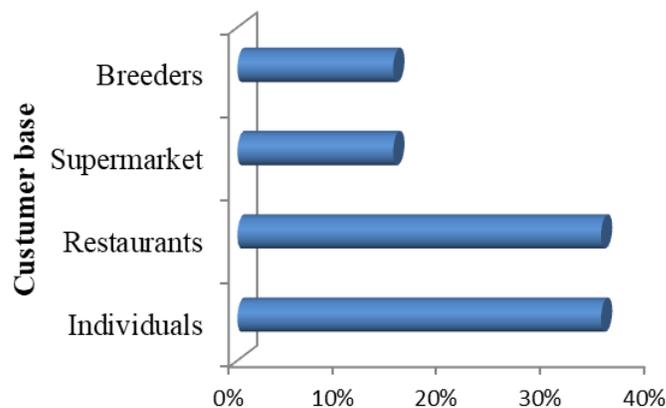


Figure 1: Customer base of rabbit meat by producers

### 3.2 Socio-demographic parameters of the consumers

The survey revealed that in the district of Abidjan, 74.36% of persons are rabbit meat consumers (Table 1) including, 20.97% of women and 53.39% of men. Regarding the age, majors (33.28%) consume more rabbit meat than juniors (26.05%) and seniors (5.03%). In France, according to [9], 8 out of 10 peoples say they eat rabbit especially people aged 50 and over at 89%-91%, the men at 87%. All ethnic groups encountered in the district of Abidjan are rabbit consumers. The Akan group are the most consumers of rabbit (33.64%) followed by the Northern Mande (15.54%), Krou (7.38%), Gur (6.16%), foreigners (6.00%) and finally Southern Mande (5.64%). The mean reason is first able that Akan group are more Christian and secondary they don't keep socio-cultural taboo. The others reason is that Akan group disposed to a varied process of cooking animals' meat.

As far as concern the level of education, 64.52% of literates are rabbit meat consumers. Customers are usually individuals and restorers. This work shows that more than half of the urban populations are consumers of rabbit meat. Akan and Northern Mande are the biggest consumers as well as the literate. Statistical analysis shows that the socio-demographic parameters of the respondents have an influence on rabbit consumption. Indeed, the level of consumption of the rabbit meat is strongly linked to genus, age, scholar level and ethnic group at  $p (.000) < .05$ . Results from a random sample of 1421 households in the southern United States suggest that the most likely consumers of rabbit meat are men, non-college graduates, those with household incomes at or below \$50,000, households with children, and Louisiana residents [10]. According to [11], socio cultural factors are the larger scale forces within societies and cultures that affect the thoughts behaviors and feelings of individual members of those societies and cultures. It means that the socio cultural factors can affect deeply the choice of an individual. These issues can become very important for producers, because they need to target their promotions based on the socio cultural factors that are at play. Serving rabbit meat on festive community occasions, perhaps even disguising the meat for other more

popular meats, is another proven means of gaining local acceptance. Besides such short-term approaches, providing rabbit meat in the school cafeterias and breeding stock for youth club rabbit projects are long term measures which can be successfully implemented for increasing rabbit meat production.

**Table 1** : Cross tabulations of rabbit consumption for socio-demographic characteristics with statistically significant coefficients

<b>Characteristics</b>		<b>No rabbit' consumers</b>	<b>Rabbit' consumers</b>	<b>Total</b>	<b>Chi</b>
		<b>(%)</b>	<b>(%)</b>	<b>(%)</b>	<b>square</b>
<b>Genus</b>	Female	11.90	20.97	32.87	73.44*
	Male	13.74	53.39	67.13	
<b>Age</b>	Junior	8.82	26.05	34.87	67.18*
	Major	13.69	33.28	46.97	
	Senior	3.13	5.03	8.16	
<b>Ethnic group</b>	Akan	10.31	33.64	43.95	81.89*
	Krou	1.80	7.38	9.18	
	Gur	2.46	6.15	8.61	

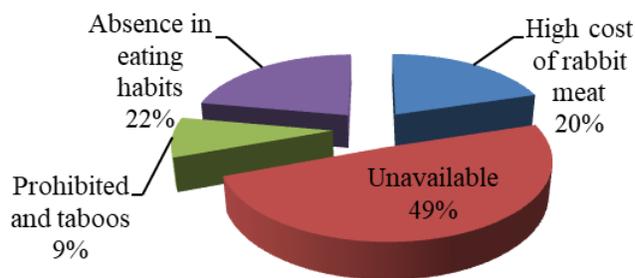
	Northern mande	3.85	15.54	19.39	
	Southern mande	4.10	5.64	9.74	
	Foreigner	3.13	6.00	9.13	
<b>Scholar</b>	Literate	21.64	64.52	86.16	27.17*
<b>Level</b>	Illiterate	4.00	9.84	13.84	

*\*means that asymptotic signification is 0, and it shows that there is a correlation between variables*

### 3.3 Factors that do not promote rabbit meat consumption

Prohibited and taboos (9%) are major reasons hindering consumption of rabbit meat (Figure 2). The survey showed that the consumption of rabbit meat was considered a taboo by a part of the population. Indeed, other studies have also shown that the rabbit is a taboo animal in some communities [12 ; 13]. According to Mamatah [14], rabbit raising in Ghana has been socially accepted; there are no social taboos regarding the consumption of rabbit meat. Others reasons of non-consumption are absence in eating habits (22%) and high cost of rabbit meat (20%) ; the price of a Kg of rabbit is 3000 to 5000 FCFA for Ivorian producers. However, the price of rabbit Kg is more expensive in Côte d'Ivoire than in Senegal (2500 to 3000 FCFA / Kg) [13]. But the majority of respondents (49%) said the rabbit meat is not available. Several reasons make the rabbit an inaccessible meat. According to consumers, the availability and absence of eating habits is a brake on rabbit consumption. That is in accordance to the study of [15] who had showed that the most frequent problem of Hungary consumer's is the lack of rabbit meat and rabbit products in the supermarkets in the country, so the urban citizens who like rabbit meat can not buy it in their preferred shops. According to Colin *et al.* [16], the rabbit meat sold only in few supermarkets and the price is two or three times higher than the poultry meat. In France, 20% of non-consumers clearly identify the reasons for their choice: the fact that they consider the rabbit as a pet (30%) or simply that they do not like the taste of

the rabbit (17%) and prefer other meats (18%) [9]. In the Hungary, a great reason is that the culture of processing and cooking domestic rabbit meat is very poor; only 7% of the people could list more than 2 rabbit recipes. That is why people don't purchase rabbit meat [15]. According to [17], in Nigeria, unavailability was cited as the most important factor hindering rabbit meat consumption. In USA, respondents were more receptive to purchasing rabbit meat if it were packaged with recipes and cooking instructions (29 per cent) than to buying processed forms of the meat (23 per cent) or the meat if it were marinated (27 per cent) [10].

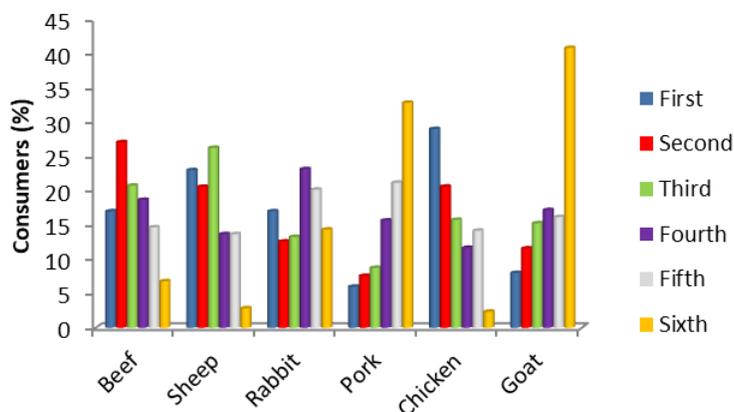


**Figure 2:** Reasons for non-consumption of rabbit meat according to respondents

### 3.4 Preference of meat sold by consumers and dearness of rabbit meat

The survey revealed that chicken is the most popular meat followed by beef (Figure 3). The third place is attributed to sheep. Consumers ranked rabbit meat in fourth place compared to other meats consumed by population of Abidjan. Pork and goat meats were ranked fifth and sixth respectively by respondents. The survey shows that rabbit meat doesn't deal a best position within the others meats. In Nigeria, despite the advantages of rabbits, its production and consumption was rated sixth after beef, mutton, chevon, fish and game [18]. In Nigeria [17], are showed that respondents liked rabbit meat and declared it palatable, yet they don't prefer it to other meat types probably because of their familiarity with others meats types which are readily available in the market and stores than rabbit meat. Face this situation, Hoffman *et al.* [19] propose that good program must made efforts to ensure that demand exceeds the current supply, and that rabbit meat is sold at a competitive price compared to

popular meats. As for [20] he emphasized that opportunities for expansion should be carefully consider the rabbit meat market demand.



**Figure 3:** Preference of the rabbit meat compared to other meats consumed in Abidjan

Table 2 presents the ranking of meat sold in the markets according to their price by consumers. The survey reveals that respondents found rabbit meat more expensive than other meats. The least expensive meat according to consumers is chicken. In Kenya, the cost of beef, mutton and poultry is high like in the other sub Saharan countries [21]. The average consumer price of whole rabbits in metropolitan France was €9.95/kg (6520 fcfa/kg) [9]. The rabbit is the 4th favorite meat after chicken, beef and mutton. Rabbits are the most expensive meat among consumers compared to other meats sold on the market. Respondents liked rabbit meat and declared it palatable, yet they don't prefer it to other meat types probably because of their familiarity with other meat types which are readily available in the market and stores than rabbit meat.

**Table 2 :** Order of expensive meat sold by consumers

Dearness	Beef	Sheep	Rabbit	Pork	Chicken	Goat
<b>First</b>	24.5	12.28	<b>49.12</b>	3.45	7.2	3.45
<b>Second</b>	19.3	<b>31.57</b>	15.78	9.65	9.65	14.05
<b>Third</b>	16.43	18.42	7.89	6.38	11.4	<b>39.48</b>
<b>Fourth</b>	<b>26.05</b>	15.3	13.78	10.27	22.55	12.05

<b>Fifth</b>	17.39	10.59	8.85	15.64	21.14	<b>26.39</b>
<b>Sixth</b>	3.02	1.2	1.12	<b>58.04</b>	34.1	2.52

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#### 4 Conclusion

The present study has been started to identify population's opinion on consumption of rabbit meat. The result had showed that rabbit meat is much appreciated by a large part of population. But, the unavailability of rabbit meat is a brake on massive consumption by population. Rabbits are a source of secondary income for breeders. The rabbit food market is dominated by use of pellets marketed by two companies, Ivograin and Faci. This makes the cost of feeding very high for rabbit breeders. Therefore, search for cheaper foods for the rabbit diet is necessary. It notices that rabbit consumption was gaining popularity. Ready to eat products should be made available in stores and market places. Consequently, believe consumption can be promoted by making it available.

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