

## Consumer Preference of Raw Beef (“Kurt”) in Wolaita Sodo Town, Southern Ethiopia

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### Research Article

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#### ABSTRACT

The study was conducted at Sodo town, Southern Ethiopia with the objective to assess consumer preference of raw beef 'Kurt'. For the study, three sub-cities in Sodo town were used and further, five butcher houses from three sub-cities were selected purposively based on customer flow and 18 consumers were selected randomly from each butcher house and a total of 135 consumers were used for the study. Besides, Key informants and butchers were interviewed to dig information of beef consumption trend, pattern and frequency. According to the respondents majority 113 (91.1%) were male and remaining 8.9% (n=11) were female. Besides to this, majority of the respondents 41.9 (n=52) were in the age range of 25-40, others were in range of 34.7 (n=43), 22.6 (n=28) and 0.8% (n=1) were in the age range of 41-60, 61-75 and >75 respectively. The present finding implies that among the sample households, 80% bought beef in the previous month of the survey as 79% for Kurt/raw meat, for making wot, 4.8% for making tibs, 12.9% for 3.3 making Kikil, and others for a combination of purposes. Major intrinsic factor that affects consumer preference of raw beef are 41% (color of meat) and the rest 25.4%, 22.5% and 12.3% of respondents stated that level of fat, taste and texture respectively affects consumer preference of raw meat in the area. Color/appearance is main factor that affect sensory quality, other quality and consumer preference of raw meat in the area followed by flavor, wholesomeness and nutritive value with % proportion of 41.1, 27.4, 21 and 10.5% respectively. Raw meat 'Kurt' is the most preferred animal source diet for human being in the area followed by roasted meat 'tibis' (21%). There should be awareness for farmers, butchers and consumers on raw meat production, value-chain for beef and enhancing market demand for raw meat in the area. Further study on raw meat quality interns of microbial and sensory should be conducted in the area.

### INTRODUCTION

The livestock sector in Ethiopia plays a vital part in the general advancement of the nation's economy. Nonetheless, current information on domesticated animals showcase structure, execution and cost is poor and lacking for outlining arrangements and foundations to defeat saw issues in the advertising framework. Interest for domesticated animals items has been expanding quickly in the creating nations pushed by wage and populace development and urbanization. Expanded interest for dependable quality, sustenance wellbeing and size of conveyance has likewise been watched, particularly in urban ranges, as confirm by extending stores <sup>[1]</sup>.

The annual contribution of ruminants to meat production in Ethiopia is estimated at over 3.2 million tones, representing over 72% of the total meat production. Cattle meat accounts for over 70% of the total red meat production and over 50% of the total

meat output in Sub-Saharan Africa. Research conducted to examine consumers' preferences for various protein sources (beef, chicken, fish, pork, and shellfish) has shown that a pleasurable eating experience is the number-one driver of protein preference, whether dining at home or in a restaurant.

Meat utilization is regularly a marker of the human progress or financial status of a nation or that of a person. Individuals with a higher social or monetary status devour an adequate measure of meat items<sup>[2,3]</sup>. The measure of meat expended in various nations shifts fundamentally with the social, financial, political impacts, official strategy, value bolster components, accessibility of domesticated animals sustains and rivalry for sustenance amongst man and creatures, religious convictions and land contrasts to give some examples. In Ethiopia, the normal yearly meat utilization per capita is low, which is evaluated to associate with 8 kg for every year<sup>[4]</sup>.

Meat and meat items are an imperative wellspring of protein in human weight control plans, and their utilization relies upon financial elements, morals or religious convictions, and custom. Comprehensively, pork is expended the most (15.8 kg/capita/year), trailed by poultry (13.6 kg/capita/year), hamburger (9.6 kg/capita/year) lastly sheep and goat meat (1.9 kg/capita/year)<sup>[5]</sup>. The utilization changes among and inside nations. For example, in Muslim nations pork utilization is amazingly low or missing, while it can surpass 50 kg/capita/year in nations, for example, Austria, Poland, Germany and Lithuania<sup>[5]</sup>.

Customers' observation on meat and meat items is basic issue for the meat business since it has coordinate impact on productivity. Many examinations have reasoned that buyers' observation is mind boggling, dynamic and hard to characterize.

The procedure impacting the shoppers to acknowledge certain meat or meat items is multi-dimensional. It is not generally easy to set up the association between the physiological recognition and response of the consumer. The impact of nourishment propensities, states of mind, beliefs and feelings on the sustenance decision and buy is of specific significance in the acknowledgment or dismissal of sustenance<sup>[6-9]</sup>.

The Pan-European Survey of Consumer Attitudes to Food, Nutrition and Health found that the top five influences on food choice in 15 European member states are quality/freshness (74%), price (43%), taste (38%), trying to eat healthy (32%) and what my family wants to eat (29%).

Meat and poultry utilizations in Ethiopia have associated peculiar cultural practices, for example: the people groups utilize the most established and social protection of meat and get ready conventional dishes from meat, handling and cooking of poultry is a sexual orientation based obligation and has socio-social parts, meat results are used for readiness of customary dishes, and the people groups are subject to restricted sorts of wellspring of creatures for meats because of the unthinkable socially related. The offer of meat in the human eating regimen has been firmly related with a way of life, riches, propensities, religious convictions and human mindfulness. Mold, promoting and publicizing additionally have an extensive impact. Of all, social and religious contemplations have constantly played, and still play, a noteworthy part in the readiness and utilization of meat items<sup>[10]</sup>. Religious-convictions shape likewise the social practices where contrasts in religious affiliations tend to impact the way individuals live, the decisions they influence, the sustenance they to eat, and with whom they relate<sup>[11]</sup>.

Beef is one of the widely consumed protein sources in the world. Furthermore, modern consumers are increasingly concerned about production of safe meat with no undesirable effects on their health. With more red meat consumers becoming health conscious, there is scope in studying the biochemical processes and products that affect meat quality<sup>[12]</sup>. Meat is the most valuable livestock product and for many people, serves as their first choice source of animal protein<sup>[13]</sup>.

Consumer demand for better quality and safer livestock products has increased in various developing countries because of higher income and increased urbanization. Sustaining this demand, however, rests on livestock producers and market agents, whose expected responses to the price premium these desired attributes may command in the marketplace could lead to higher and more stable incomes for smallholder producers and be a pathway to the development of the livestock sector in many developing countries<sup>[14]</sup>.

Consumer preference of raw beef by wolaita people in wolaita zone is deep rooted eating habit, but still today not has been conducted. This eating practice is useful to forward attributes which make raw beef ("kurtti") preference by Wolaita people in national and international levels. Therefore, generating information on preference of raw meat, its attributes and routine eating habit is required. These factors coupled with high demand for raw meat ('Kurti'), potential of area for beef and lack of scientific investigation calls research proposal for the malady. Therefore, the study was designed with the aim of assess consumer preference and quality and safety attributes of raw meat.

## MATERIALS AND METHODS

### Description of the Study Area

Wolaita Zone is located in south Ethiopia between geographical coordinates of 6.40.7.10 N latitude and 37.40.38.20 E longitude<sup>[15]</sup>. It has a total area of 3982 km<sup>2</sup><sup>[16]</sup>. Its altitude ranges from 1200 to 2950 meters above sea level and is subdivided into three ecological zones: Kola or lowland (35%), Woina dega or intermediate highland (56%) and dega or highland (9%).

Wolaita has a bimodal rainfall pattern with major and minor rainy seasons mostly lasting from July to October and March to May, respectively. Average total annual rainfall is 1014mm and the mean daily temperature is 19.5°C [15]. According to Westphal, Wolaita has enset based mixed crop-livestock farming system, where enset is the co-staple food together with cereals, root and tuber crops [16]. Like other mixed crop livestock production systems in Ethiopia, livestock production is an integral part of the farming system. According to WZFEDD [15] report Wolaita Zone has 1,356,429 head of cattle.

**Sampling Procedures and Methods of Data Collection**

135 raw meat consumers were surveyed and in advance familiarized with the existing consumption pattern and different attributes on raw meat preference. Field observation, 10 focus group discussions, and 5 butchery house (i.e., three from Mehal sub-city and two from Merkato Sub-city) and 18 consumers were selected from each butchery house and two cooperative shops were purposively selected based on high consumer flow and access. From each cooperative shop 15 customers were interviewed and 5 butcher men were used as a source of back ground information on meat consumption practice and wayside informal talks and secondary data sources were used in five selected butchery house from three sub-cities of Sodo town based on number of high customer flow. A total of 135 respondents were used for the study. Then data was collected on historical raw meat consumption, and preference of raw meat in the area, attributes of the raw meat to push high preference, extrinsic and intrinsic factors affecting raw meat consumption in the area, raw meat consumption frequency in the area. Data management and analysis data collected were analyzed by using SPSS software package and descriptive statistics like mean, frequency distribution and percentage was used to report data from result.

**RESULTS AND DISCUSSION**

**Socio-demographic Characteristics of the Respondents**

According to the respondents majority 113 (91.1%) the respondents of were male households and the remaining 8.9% (n=11) were female. This implies that most of the times meat for household consumption is purchased by male households. Besides to this, majority of the respondents 41.9 (n=52) were in the age range of 25-40, others were in range of 34.7 (n=43), 22.6 (n=28) and 0.8% (n=1) were in the age range of 41-60, 61-75 and >75 respectively. This may show that a difference in age group is major determinant factor in for meat consumption in the area. The present finding is in line with Consumers’ preferences for quality grade and degree of doneness was solved in study of McKenna, et al. Evaluations of beef quality by consumers from the viewpoint of various social aspects (age, sex, consumption of beef) were analyzed by Oliver, et al. [17]. Branscheid, et al. [18] reported consumer acceptability of beef and lamb in respect of certain social aspects of consumers (age, education, and religion) (Table 1).

**Table 1.** Socio-demographic characteristics of the respondents.

Educational	Background	Frequency	%
Age of respondent	1-4	23	17.03
	5-8	16	11.85
	9-12	69	51.0
	College Diploma	11	8.14
	Degree	26	19.3
	25-40	57	41.9
	41-60	46	34.7
	61-75	31	22.6
Sex of respondent	>75	1	0.8
	Male	123	91.1
Occupation of respondents	Female	12	8.9
	Farmer	19	5.6
	Daily laborer	17	13.5
	Merchant	55	41.1
	Student	17	5.6
	Office worker	21	16.1
	Retired	5	4.0

Occupation is most important factor that determines meat frequency and pattern of raw meat consumption because it helps to determine source of income. As our findings, about 41.1% of the respondents were merchants and the remaining 5.6%, 10.5%, 5.6%, 16.1% and 4.0% of respondents were farmers, daily laborers, students, office workers and retired respectively. This implies that those whose income is based on daily based cash exchange have higher exposure for raw meat consumption than other group of community in the area.

**Consumer Preference for Meat in the Area**

The present finding implies that among the sample households, 80% bought beef in the previous month of the survey as 79% Kurt/raw meat, to make wot, 4.8% for making tibs, 12.9% for 3.3 making Kikil, and others for a combination of purposes (Table 2).

**Table 2.** Preference of beef in the area.

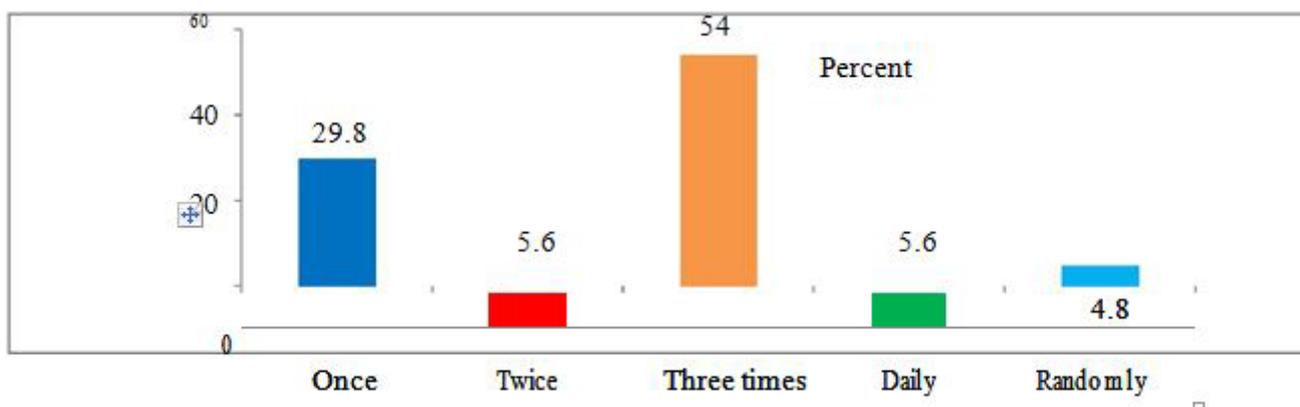
Meat type	Frequency	%
Kurti'raw meat'	107	79
Tibis	17	12.9
Keywot	7	4.8
Kikil	4	3.3

Raw meat 'Kurt' is most commonly consumed in Wolaita zone particularly in Sodo town even sometimes its consumption is regarded as culture, indicator of wealth status and source of party for different groups in the area. Majority of the respondents 98 (79%) stated that raw meat 'Kurt is the most preferred animal source diet for human being in the area followed by roasted meat 'tibis'(12.9%) Keywot (4.8%) and Kikil (3.3%). This is different from the report of Jabbar and Admassu [19], who stated. Among the example families, 80% purchased hamburger in the earlier month of the review to make wot, 40% for making tibs, 13% for making kitfo, and others for a mix of purposes. So truly, when general hamburger utilization is considered, inclination for high fat substance won't not be high however for a particular cut of hamburger for a particular type of utilization, for instance, crude meat utilization, high fat may at present be favored, which was not independently caught in the hamburger profiles [19] in Ethiopia, Eyo that meat was clearly preferred to fish because consumers perceived it as being richer in protein, nutritious and more appetizing and [20] that most of the people preferred poultry meat (70.0%) followed by mutton (21.0%), Chevon (7.0%) and very less percentage of people preferred to take pork (1.0%) and beef (1.0%) Chittoor districts of India [21] who reported high cultural preference for beef over mutton and chevon in Southwest, Nigeria. Consumption of raw beef is significantly higher than other form of beef (p<0.05). This may be due to high meat quality that resulted from high level of management of beef animals and housing system that keep beef animals from adverse environmental condition that affect meat tenderness and marbling efficiency.

**Raw Meat Consumption Frequency in a Week in the Area**

Majority of the respondents (54%) in the study area consume beef or raw meat three times in a week, 29.8% 5.6% and 4.8% of the respondents consume once, twice and randomly in a week respectively. This finding is in line with the report [22], who reported 18 (4.9%) eat meat once in a week, 125 (33.8%) at least twice a week, 77 (20.8%) once in a while, 148 (40%) daily and 2(0.5%) consumed meat during festive periods and other reports as, consumption status of meat was very low, only 3.2%, 5.6% and 25% of households were consumed meat (either beef or chevon or mutton) every day, twice/weekly, weekly respectively [23]. With regards to the frequency of meat consumption, 18 (4.9%) eat meat once in a week, 125 (33.8%) at least twice a week, 77 (20.8%) once in a while, 148 (40%) daily and 2 (0.5%) consumed meat during festive periods [22].

The higher frequency of meat consumption per week is an indicator attributed to that there is high raw beef consumption culture due to different issues in association with beef available for consumers in the area like fattening pattern, housing, and feeding and consumers with frequency of three times per week is significantly higher (p<0.05) (Figure 1).



**Figure 1.** Frequency of meat consumption by respondents in a week (%).

**Factors Affecting Consumer Preference of Raw Meat in the Area**

Various factors affect influence consumer preference of raw meat in the area. Majority of respondents (41%) stated that

color of meat is most important that affect consumer preference of raw meat. The rest 25.4%, 22.5% and 12.3% of respondents stated that level of fat, taste and texture respectively affects consumer preference of raw meat in the area.

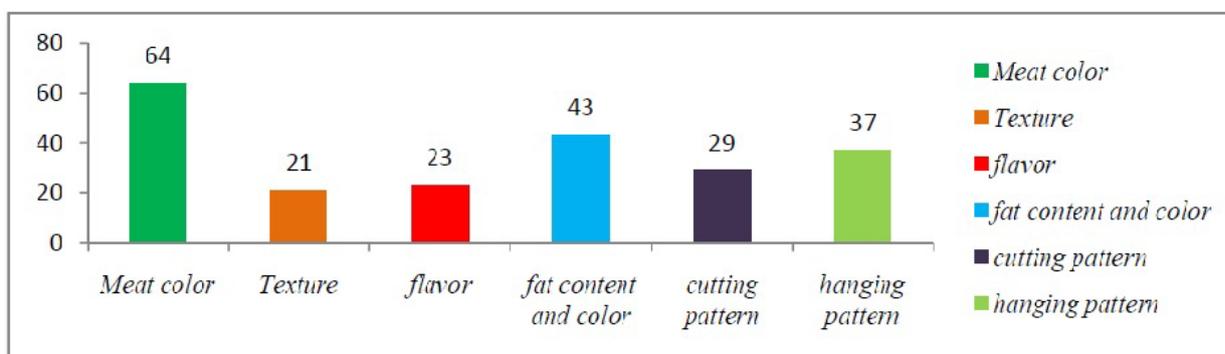
**Table 3.** Intrinsic and extrinsic factors affecting consumer preference of raw meat.

	Variables	Frequency	%
Intrinsic Factors	Color/appearance	55	41
	Level of fat	34	25.4
	Taste	30	22.5
	Texture	16	12.3
Extrinsic Factors	Feeding	32	23.2
	Housing system	30	22.5
	Breed/information	24	17.4
	Price	49	36.3

As indicated in the above **Table 3**, different factors affect consumer preference of raw beef/kurt in the area. Color and housing are major intrinsic and extrinsic factor account about 41 and 31.1% as reported by respondents. This finding is higher than report of [14], who stated price (25%), hygiene (20%) and official stamp (25%) having fairly similar weight based on the full sample, followed by tenderness (18%) and fat content (11%) as important attributes in determining preference for meat in Kenya as some differences were noteworthy across income strata. Market price significantly affect preference and purchasing power of consumer ( $p < 0.05$ ).

**Attributes for Consumer Preferences Beef in the Area**

Meat color is the most important factor that influences meat purchasing frequency and consumer preference. As indicated the main factor that influence frequency of raw meat consumption in the area were product availability 23 (18.5), Income status of consumer 55 (44.3), Market price 38 (30.6), Perception of sensory quality 17 (13.7) [24], Attitude / beliefs 28 (22.6), Culture/ religion 24 (19.3), Consumer concern of good health 39 (31.4).



**Figure 2.** Attributes for consumer preference of raw meat in the area.

This is similar with report who reported product availability and income status of consumer as major factor that affects preference and consumption frequency of poultry in eastern Uganda and that of Bello Acebron and Calvo Dopico [25] who stated price is an important extrinsic quality cue related with consumers' purchasing decisions, but though it has a positive effect on expected quality (**Figure 2**). However, income status of consumers affect significantly consumption frequency of raw meat in the area ( $p < 0.05$ ).

**Factors Responsible for Consumers' Choice of Meat**

Meat utilization pattern of the respondents were skewed towards some domesticated animals species. Be that as it may, other potential meat creating creatures were not really used. This may prompt over use of the effectively existing domesticated animals and underutilization, disregard of other meat creatures. Different variables affecting buyers' decision of their most favored, most expended and non-consumed meats. Availability (47.3%), price (15.9%) and income status (11.1%) among others were the factors limiting their choice of meat types. This is lined with the reports of Adetunji and Rauf [21] in their study found that respondents' preference for meat was influenced by their taste and level of income.

Increased demand for reliable quality, food safety and scale of delivery has also been observed, especially in urban areas, as evidenced by expanding supermarkets [1]. Official models for quality and wellbeing of nourishment items like meat and drain are either missing or may exist yet those might have been characterized following created nation standards which can't be

upheld. In such circumstances, purchasers and market on-screen characters as a rule utilize neighborhood gauges in light of specific properties. The majority of the current writing on request with an emphasis on quality and security manages created showcase <sup>[26]</sup> while examines germane to nearby norms and how they are characterized and actualized along showcase chains in creating nation markets are rare. A comprehension of which section of the market inclines toward which quality and security properties and whether they will pay for such traits is basic for advertise performing artists and makers to react to those inclinations.

## CONCLUSION

Different factors affect consumption of raw meat in the area, majority of the respondents in the study area declared that poor hygiene is the main factor that influences consumption of raw meat followed by price/income status of consumer. Remaining was stated that religion, poor quality, poor consumer attitude and other social factors were the major challenges of raw meat consumption in the area. According to respondents the major factors that affect raw meat consumption in the area includes price, culture, consumer demand and environmental factors. Raw meat quality is the most important factor for determining the market follow as well as controlling public health importance that is related to poor quality and results in both economic and product loss. It is general term that includes safety, texture, flavor, and hygiene, acceptability by consumer, wholesomeness, sensory and nutritional values of the product. Major factor that affect quality/wholesomeness of raw meat for consumption includes safety, hygiene, acceptability intense dislike and socio-economic issues. Color/appearance is main factor that affect sensory quality, other quality and consumer preference of raw meat in the area followed by flavor, wholesomeness and nutritive. Raw meat consumption pattern and frequency of consumption is high in the area. Majority of the respondents in the study area consume beef or raw meat three times per a week and others respondents consume once, twice and randomly per a week.

## RECOMMENDATION

Further analysis of meat microbial and nutritional quality and safety of raw meat available in market for direct human consumption must be conducted at large scale. Training should be given for slaughter houses, butchers and raw meat selling cooperatives on the issue of raw meat safety and quality issues by different responsible organizations. There should be government support to bridge gap in meat marketing and maintaining safety of raw meat in order to ensure public health importance of direct consumption of raw meat.

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