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Research Article

Assessment of Meat Consumption Pattern in Mirab Abaya Woreda, Southern Ethiopia

Yibrah Tekle*, Esheti Anja

Department of Animal and Range Science,Dilla University, Dilla, Ethiopia

***Corresponding author:** Yibrah Tekle, Department of Animal and Range Science, Dilla University, Dilla Ethiopia. Tel: +251912107718; Email: goytomtekle@gmail.com

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Abstract

A cross sectional study was conducted on 100 representative people, selected using random sampling technique, in Mirab Abaya Woreda, Southern Ethiopia from December 2017 to June 2017 to investigate the major meat sources, consumption pattern/frequency, importance and challenges of meat consumption in the study area. A semi structuredquestionnaire survey method was applied to achieves these objectives. The study was showed that all the respondents, 100%,were consumed meat.Among the meat consumed, beef was the most popular one and consumed about 65 % and this followedby chevon and mutton, 18% and 17% respectively. The majority of the respondents' frequency of meat consumption was once per a month, 72% and few of them consume meat one per a week, 19% and only during the holiday time, 9%. Out of the total respondents, most of the respondents, 86%, replied that their consumption meat purchased from hotel, restaurant, butchery and abattoir whereas some of the respondents were obtained meat for consumption direct from market purchased and fattened in individual house animals slaughtered, 10% and 4% respectively. The respondents were had awareness for the meat importance; most of them they replied that meat could use for disease prevention (46%) and body building (19%) whereas some of them thought for give strength (13%), as source of energy (11%) and protein (9%) and because of its part of holiday (2%). Both the raw and cooked meat eating habit was the dominant (75%) and followed by cooked (21%) and raw (4%) meat eating habit in the study area. But, the challenges of meat availability for consumption were low income capacity (52%), less meat quality (14%) and Cost/high price (13%), health problem due to increase body fat (10%), fasting(7%) and supply shortage(4%). All the respondents were preserved the consume meat to prevent the meat spoilage through different methods, but the principal preservation method was dry salt preservation, 65%. In conclusion, this study identified that the low frequency of meat consumption, the presence of raw meat consumption, better understanding of meat importance and low income of the respondents was considered as the principal challenge of meat availability for consumption. Based on this conclusion, this study recommended that the meat consumption pattern or frequency and awareness raise on zoonotic disease transmission via raw or undercooked meat should be improved in the studied area.

Keywords: Beef; Chevon; Consumption Pattern; Mirab Abaya; Mutton; Preference

Introduction

In Ethiopia agriculture sector has a great contribution, about 46% of the Gross Domestic Product of which livestock subdivision has 33-5%. According to Befkadu and Birhanu (2000)[1], this contribution to the country Gross Domestic Product is due to the clients use the livestock production and productivity. Among the livestock products meat and meat products are the highest source of protein and amino acids, Iron and vitamin B complexes for consumers; So as the nutritional deficiency could relief [2].

The report of OBICI (2000)[3] reflected its prediction as the demand of meat production in 2020 will increase by 58% and the consumption also through the world will growing. And FAO (1998)[4] documented about increasing Sub Sahara African people in their number, currently by 3.1% per a year; when justified this as increasing urban population, income capital movement of people from rural areas to urban centers is correlated with the genera increase in the population of Sub Sahara Africa. Those all will increase the demand for food livestock origin in the year 2025, the demand for meat exceeds 19 million. Thislevel of production

will require a 4% annual rate of increase of livestock productivity compared with the estimated current rate of 2.5%.

According to FAO (2002)[5] and Alemayehu (2006)[6] findings a meat product consumed in plenty by those people have higher economic/social rank; as a result, the meat consumption is a sign of civilization or economic status of that individual or country. Therefore, due to the social economic, political influence, price, policy, religious belief, between man and animal food competition, and the availability of livestock feeds, the amount of meat consumption varies in different countries.In Ethiopia, the average annual meat consumption per capita is very low, which is estimated to be around 8kg per year [7]. This could be due to our country doesn't develop to the expected level in this industry because of different factors faced; presence of low level of economy, lack of genetically improved breeds, less market outlets as well as the livestock improvement policy strength.

Abbey (2004)[8] stated that the preference of livestock species using for consumption varies from one location to another location and even among communities within one location. For instance, in Ethiopia meat consumption preference is limited toward of beef, mutton and chevon whereas their rank could change from one location to another location and also with in the communities of one location.Thus, the meat consumption pattern and preference livestock species and their challenges not studied in Mirab Abaya woreda. This area need research to documented or to fill the information gap; since such kind of information will use for next time further project planning and implementation. Therefore, the objective of this study was designed to investigate the major meat sources, consumption pattern/frequency, importance and challenges of meat consumption in the study area.

Materials and Methods

Study Area

The study was conducted in Mirab Abaya, the capital town in Gamo Gofa Zone. It is located 460km South of Addis Ababa capital city of Ethiopia and located between 6˚ 8′ to 6˚11′ N latitude and 37˚ 09′ to 37˚ 20′ E longitudes. Mirab Abaya bordered by lake Abaya in East South which are separated oromia region on the East and Arba Minch Zuria on South, on the West by Chencha, on the North East by Borana, and North Wolaita Zone. It's an elevation ranging from 600 to 3300masl with 29 average annual rainfall. In the Mirab Abaya woreda comprise of a total population of 74, 967 of which 37,444 are men and 37, 523 are women, 5.834 or 7.78% of its population are uraban dweller. The main livelihood of the majority of the respondents is agriculture and few of them engaged in private business like shop. The major of the inhabitant were protestant with 64.9% of the population reported that believe 32.54% practiced Ethiopia orthodox and 1.93% were muslim [9]. The majority of respondent were male, 81% and few of them were female, 19%. 58% of the respondent of the study area were old age (above 30 years), and most of them can read and write.The majority of respondents' educational status was reading only, 33% and followed by the grade 6-12, 28%.

Study Population

The representative people from the study area was selected irrespective of their religion.The people used for this study was mainly live in study area. The basic information on each respondent (such as sex, age, religion, types of meat consumption in rank frequency of meat consumption, constraint) was collected. A total100 respondents from Mirab Abaya woreda were participated in this study.

Study Design and Sampling Methods

A cross- sectional study design with randomly sampling techniques was conducted this research in order to achieve its objectives from December 2017 to June 2017.

Sampling Size Determination

The sample size required for this study was determined by the formula recommended by Ashram (2007)[10] for survey study as:

N=0.25/SE2

Where:

N= Sample size

SE=Standard Error

Hence, at 5% standard error, the total number of respondents were selected and interviewed from two kebeles of Mirab Abaya woreda, 100 respondents.

Survey

The semi structural questionnaire was pre-tested and modified before the main survey. The structured questionnaire that administered to the respondents was included kebele, sex, age, sourceof meat consumption type, meat consumption frequency (pattern), constraint slaughter place, awareness of meat use and meat eating habit. The kebele and respondent were selected randomly.

Statistical Analysis

The collected data was coded and entered in to Microsoft excel spread sheet and then analyzed using description statistic, frequency, percentage, tables and graphs.

Results

Meat Preference and Source

The highest source of meat for consumption in the study area was beef, 65% and followed by chevon, 18% and mutton, 17%(Table 1, Figure 1). Most of the respondents their consumpion meat obtained by purchased from hotel or restorant /butchery or abattoir, 86% and few of them obtined by slaughtere their own fattened animal, 4%(Table 2).

Meat preference	Mirab Abaya (N= 100)			Preference Rank
	Birbir n(%)	Doshe n(%)	Total n(%)	
Beef	32(57.14)	33(75)	**65(65)**	**1st**
Mutton	11(19.64)	6(13.64)	**17(17)**	**3rd**
Chevon	13(23.21)	5(11.36)	**18(18)**	**2nd**
Total	**56(100)**	**44(1000**	**100(100)**	

Table 1: States the principal meat consumption and preference among respondants in the study area.

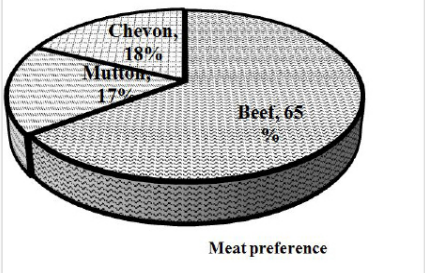

Figure 1: Meat preference ranking by species.

Meat obtained	Mirab Abaya (N= 100)		Total n(%)
	Birbir n(%)	Doshe n(%)	
Purchased from hotel/restaurant/butchery/abattoir	49(87.50)	37(84.09)	**86(86)**
Purchased direct from market	5(8.93)	5(11.36)	**10(10)**
Individual house slaughtered	2(3.57)	2(4.55)	**4(4)**
Total	**56(100)**	**44(1000**	**100(100)**

Table 2: Indicates source of meat from where they got in the study area among the respondents.

Meat Consumption Frequency and Habit

The result from Table 3 and Figure 2 indicated that the frequency of meat consumption varied across study area, most of the respondent consumed meat once per month, 72%(72/100) and also of the once per week and only at holiday were 19% (19/100) and 9% (9/100) respectively. The result of respondent revealed that the meat eating habit in the both raw and cooked type was 75% (75/100), cooked meat eating habit in the study area was 21%(21/100), and the raw meat eating habit was 4%(4/100) (Table 4).

Frequency	Mirab Abaya (N= 100)		Total n(%)
	Birbir n(%)	Doshe n(%)	
Once per week	13(23.21)	6(1.64)	**19(19)**
Once per month	40(71.43)	32(72.73)	**72(72)**
Only at holiday	3(5.36)	6(13.64)	**9(9)**
Total	**56(100)**	**44(1000**	**100(100)**

Table 3: Shows the frequency of meat consumption by respondents (%).

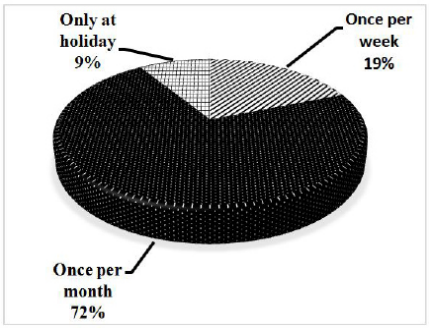

Figure 2: Indicates themeat consumption frequency of the respondents in the study area.

Meat eating habit	Mirab Abaya (N= 100)		Total n(%)
	Birbir n(%)	Doshe n(%)	
Raw	3(5.36)	1(2.27)	**4(4)**
Cooked	16(28.57)	5(11.36)	**21(21)**
Both	**37(66.07)**	**38(86.36)**	**75(75)**
Total	**56(100)**	**44(1000**	**100(100)**

Table 4: Elucidates the meat eating habits of the study area.

Importance of Meat

The awareness of the respondentsupon the importance of meat was described as meat uses mainly for disease prevention(46%), body building (19%), strength (13%), source of energy (11%) and also in little amount they stated it for the of source of protein (9%) and its part of the holiday (2%) (Table 5, Figure 3).

Meat Importance	Mirab Abaya (N= 100)		Total n(%)
	Birbir n(%)	Doshe n(%)	
Protein	6(10.71)	3(6.82)	**9(9)**
Energy	6(10.71)	5(11.36)	**11(11)**
Disease prevention	26(46.43)	20(45.45)	**46(46)**

Strength	6(10.71)	7(15.91)	**13(13)**
Build body	10(17.86)	9(20.45)	**19(19)**
Part of holiday	2(3.57)	0(0)	**2(2)**
Total	**56(100)**	**44(1000**	**100(100)**

Table 5: Describesthe importance of meat in the study area.

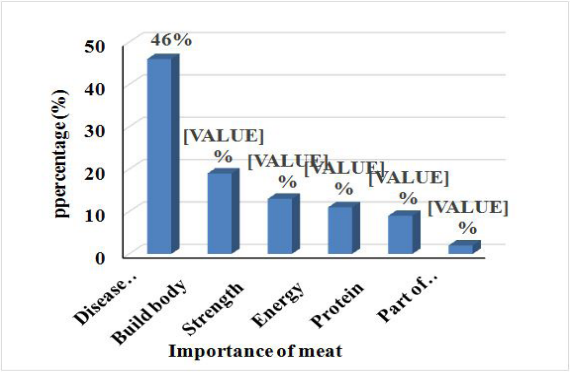

Figure 3: Meat importance stated by the respondents in the study area.

General Profile of the Respondents

This study showed that 81% of the respondent were male and 19% were female and the majority of were above 30 years old, 58%. The majority of respondents' educational status was reading only, 33% and followed by the grade 6-12,28%. The primary job type of the respondents were farmer and business man, 39% and 30% respectively (Table 6).

Parameters	Mirab Abaya (N= 100)		Total n(%)
	Birbir n(%)	Doshe n(%)	
Sex			
Male	43(76.79)	38(86.36)	**81(81)**
Female	13(23.21)	6(13.64)	**19(19)**
Age			
15-20 years	3(5.36)	2(4.55)	**5(5)**
21-30 years	23(41.07)	14(31.82)	**37(37)**
Above 30	30(53.57)	28(63.64)	**58(58)**
Education status			
Illiterate	1(1.79)	7(15.91)	**8(8)**
Read only	19(33.93)	14(31.82)	**33(33)**
Grade 1-6	13(23.21)	7(15.91)	**20(20)**
Grade 6-12	16(28.57)	12(27.27)	**28(28)**
Diploma	7(12.5)	4(9.09)	**11(11)**
Job			
Students	7(12.5)	3(6.82)	**10(10)**
Farmers	17(30.36)	22(50)	**39(39)**
Business man	20(35.36)	10(22.73)	**30(30)**
others	12(21.43)	9(20.45)	**21(21)**
Total	56(100)	44(100)	**100(100)**

Table 6: Illustrates the general profile of the respondent.

Meat preservation methods

All the respondents in study area were used preservation methods for the consume meat: out of these methods the predominant meat preservation was dray salt, 65% and very few of respondents were used the salt and refrigerator meat preservation method, 5% (Table 7).

Meat Spoilage Prevention	Mirab Abaya (N= 100)		Total n(%)
	Birbir n(%)	Doshe n(%)	
Dry by salt	39(69.64)	26(59.09)	**65(65)**
Refrigerator	9(16.07)	4(9.09)	**13(13)**
Salt and refrigerator	1(1.79	4(9.09)	**5(5)**
Dry without salt	7(12.50)	10(22.73)	**10(10)**
Total	**56(100)**	**44(1000**	**100(100)**

Table 7: Shows meat preservation methods.

Challenges Meat Availability

The study revealed that the low income (52%) was the principal challenge for those most respondents'meat consumers in the study area and followed by the less quality of meat(14%) and high price of meat (13%)(Table 8, Figure 4).

Challenges of meat availability	(N= 100)		Total n(%)
	Birbir n(%)	Doshe n(%)	
Fasting	3(5.36)	4(9.09)	**7(7)**
Cost/high price	9(16.07)	4(9.09)	**13(13)**
Low income	28(50)	24(54.55)	**52(52)**
Body fat/Health problem	5(8.93)	5(11.36)	**10(10)**
Less meat quality	7(12.50)	7(15.91)	**14(14)**
shortage of meat supply	4(7.14)	0(0)	**4(4)**
Total	**56(100)**	**44(1000**	**100(100)**

Table 8: Challenges for the availability of meat consumption in the study area.

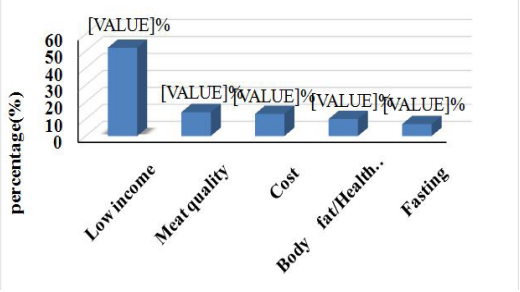

Figure 4: Challenges of meat ofavailability.

Discussion

Meat is the most valuable livestock product since it is one of the main sources of protein for human consumption. Meat and meat products are sources of high quality protein and their amino acid composition. They are also major source of iron and some vitamins in the B group. So, providing, meat consumption as nutrients can alleviate nutritional deficiencies [2]. The amount of meat consumed in different countries varies significantly with the social, economic, political influences, official policy, price support mechanisms, availability of livestock feeds and competition for food between man and animals, religious beliefs and geographical differences. In Ethiopia, the average annual meat consumption per capital is very low, which is estimated to be around 8 kg per year [7].

Moreover, preference of livestock species consumed varies from location to location and amongst communities within location. Consumption preferences (of meat) in Ethiopia are skewed towards beef, mutton and chevon while this ranking changed from location to location and also within locations [8]. The specific meat consumption pattern will be of a vital in planning the location specific and species based animal farming the specific meat consumption pattern will be of a vital in planning the location specific and species based animal farming.

The finding of this study indicated that the whole respondents in the study area were consumed meat. This result agreed with the research findings of Tsegaye, et al. (2013)[11] in Hawassa, Daniel (2008)[12]in Borena zone, southern Ethiopia and Tefaye (2007)[13]in Metema Northern Ethiopia. But, the preference of the respondents varied, most of them consumed the beef, 65% (65/100) whereas the remaining percentage was held by the mutton and choven consumers, 18% and 17% respectively. This result was disagreed with the research finding of Jegadeesh, et al. (2010) [14]from India where the mutton and choven highly consumed and occasionally consumed beef, and Assen and Aklilu (2012) [15] in Tigray whereas with the reports of Daniel (2008)[12]in Borena zone and Tesfaye (2007)[13] in Metema district were agreed with the present research. This meat consumption preference difference might be due to the religious beliefs, personal preference characteristics and the accessibility and affordability of meat type (Daniel, 2008)[12], socio-economic, political influences, official policy, availability of livestock feeds and competition for food between man and animals and geographical differences which prevalent in the region. And also could be due to the presence of high in number of shop which sell beef, which is a result of more supply of beef animals and more demanding for beef[4]. Some types of animal in the study area equine and pig were not consumed by the entire respondent in the study area as well as Ethiopia. This research result agreed with (Abbey, 2004) [8]who ranked the meat preference as beef, mutton and chevon in order of decreased.

This research revealed that the source of meat for the most respondents' consumption was purchased from abattoir/hotel/butcheries, 86% and followed purchase direct from market directly and individual house fattened slaughter were 10% and 4% respectively. This result agreed with the reports of Tesfaye (2007) [13], Daniel (2008) [12] and Gambo et al. (2010)[16], the respondents were purchased their meat butcheries. Slaughtering in house fattened animals was means of obtaining meat for consumption. Slaughtering (individually) un fattened animals (purchased directly) from the market was also source of meat consumption for some of the respondents' family in all sub cities.

The result indicated that the frequency of meat consumption varied across the study area, most of the respondent consumed meat once a month 72% and followed mostly consumed on weekly and part of holiday were 19% and 9% respectively. This result agreed with Raghavendra (2009)[17]of the frequency of meat consumption in India reported. Whereas, this research disagreed with the research finding of Tsegay et al. (2013)[11] in Haikdar, Hawassa reported as the majority respondents consumed meat once per a week.

The result of this search stated that the majority respondents of the study area had an awareness on importance of consumption, about 46% of the total responded that meat consumption has a role in disease prevention and the small number of respondents thought was meat could provide the strength (19%), source of energy (13%) and source of protein (11%). This agreed with research report of Green Biz (2014)[18]in America and Jan Sheehan (2015) [19]who reported that meat has may nutritional, disease prevention and good source of the protein and energy properties. Meat contribute all of the cholesterol and the great majority of the saturated fat to the diet. And these dietary saturated fats play an important role in a variety of biological functions.

The result of respondent revealed that the meat eating habit in both raw and cooked type was 75% and the cooked meat and raw meat eating habits in the study area were 21% and 4% respectively. This result agreed with research done in America by Green Biz (2014)[18]. As the result indicated in study area, most of meat was preserved by using drying salt 65% and also followed by 13%, 5% and 10% of the refrigerator, by salt and refrigerator and drying without salt respectively. As the respondent said that meat must be preserved immediately after purchasing or slaughter-

ing, because meat is a favorable environment for microorganism which may cause immediate spoilage. This research output agreed with the finding of Gambo, et al. (2010)[16]who reported that meat spoilage by microorganisms could prevented using salt drying in Nigeria.

As the study showed that most of the respondents in the study area were faced different challenges to obtained meat for their consumption like low income (52%), less meat quality (14%), high price (13%), health problems (10%) and fasting (7%). This result agreed with the research report of Tsegay, et al. (2013) [11] Haikdar, Hawassa reported. This could be relief by increasing the number of Cooperative of butcheries and meat shop in the study area so as the price of the meat could stable and then those respondent have the low income could enhance the habit of the meat consumption.

Conclusion and Recommendations

This research showed that beef was the most preferred and consumed meat over the other meats consumed in the study area, chevon and mutton. All the respondents in the study area were consumed meat, whereas the most respondents preferred to consumed meat occasionallythat may be due to effect of high price of meat and their low income or economic limitation.And the less quality of meat, cause of health problem and fasting were the challenges for meat consumption in the study area.Also, this research revealed that the major respondents obtained meat by purchased from hotel, restaurants or butchery/abattoir whereas the some of the got the meat for their consumption by slaughtered the live animal obtained from direct market and individual house fattened. The most common meat preservation method to prevent the meat spoilage was dry by salt and also few respondents used the refrigerator, dry without salt(alone) and combination of refrigerator and salt methods. All the interviewed respondents were more cognizant about meat importance, most of them responded it as disease preventive and also the source of protein energy and strength were part of the respondents' awareness. Both the raw and cooked meat consumption were the habits of the major respondents. Based up on the above conclusions, the following points recommended:

- The livestock production and productivity expansion strategy should be planned and implemented to relief the low meat consumption pattern/ frequency
- Awareness should be raised in the study area community on the zoonotic disease transmission via raw or undercooked meat

Butcher cooperatives are necessary to decrease the price of meat so as the low income people could afford to buy the meat and also would increase the meat consumption pattern in the study area.

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