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## **Goat Meat Consumer Preferences: Implications for Goat Meat Marketing in Metropolitan Nashville, Tennessee Area**

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### **Abstract**

Goat meat has become an increasingly good source of protein for meat eaters in the global marketplace. Goat meat constitutes about 63% of all red meat consumed worldwide. It is the main source of animal protein in many North African, Middle Eastern nations, Southeast Asia, the Caribbean, and other tropical regions. This notwithstanding, goat meat is yet to take such prominence in the U.S. diet. Despite the acknowledgement of the meat as lean, tasty and less fatty than other meats (USDA 2001), consumption is still limited to certain groups. Results of this study will provide implications for a successful market expansion in the area.

**Keywords:** consumer preferences, goat meat, marketing, Analysis of Variance

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## Background

In the last few decades, the demand for goat meat has far outstripped the supply. According to the National Agricultural Statistics Service (NASS) of the United States Department of Agriculture (USDA), there were 2.86 million goats in the United States in 2012, a 4% decline from 2011. In spite of this decline in supply, the demand has steadily increased over the years. Economic theory suggests that when the quantity demanded exceeds the quantity supplied, all things held constant, there will be a shortage which could lead to increased prices. This explains why the US imports about 750,000 goats each year to fill the supply gap. The goat slaughter rate at USDA inspected facilities reached approximately 647,000 in 2003 from about 208,000 goats in 1991 (Stanton 2004). A total of 773,800 goats were slaughtered in federally inspected facilities in the United States in 2011 (Pinkerton and McMillin 2011). In 2011, 48,583 goats were slaughtered in Tennessee (Menard 2011; Jamey 2011). While increased demand and supply may be good for producers, it may not be so good for the consumers in the short run. This situation was good news for goat producing states such as Tennessee, Texas, Ohio, Missouri, and Georgia among others (Montgomery 2010).

## Consumer Goat Meat Preferences

The major demand for goat meat comes from the many ethnic groups dispersed in the United States. Overall, the predominately white, middle-class population consumes relatively very little goat meat. Ethnic and religious identity is often associated with goat meat consumption. Recent immigrants to the United States come from Asia or are of Hispanic background compared to earlier immigrants who tended to be of European descent. While Hispanics tend to concentrate in a few cities such as Los Angeles, New York, Miami and San Antonio, many Asians can be found in other cities such as Detroit. Ethnic composition in America's cities and urban areas distinctly differ in their goat meat preferences depending on the location of the city. There are currently more than 14 million Muslims in the United States. The diversity in the ethnic populations has led to unique preferences in goat meat in the United States. While young goats are preferred by Mexican-Americans, Chinese and Koreans prefer young goats of good quality weighing 60-70 pounds. Americans of Jewish extraction also prefer high quality kids (20 to 40 pounds). African immigrants from the West Indies prefer older goats of lesser quality, with male preference.

Recently, the United States has witnessed a rise in ethnic population, increased religious diversity and expanded disposable income. These factors derive the demand for goat meat. The recent acceptability of goat meat as an excellent source of nutritious and healthy source of protein for meat eaters has opened the market for goat meat consumption in the US. Availability of the nutrient composition of goat meat (USDA 2001) has attracted health-conscious consumers, thereby expanding demand for goat meat and goat food products such as cheese and milk (Montgomery 2010; Kick 2012). Goat meat has less fat and cholesterol than beef, pork, chicken and lamb.

As shown in Table 1, goat meat has lower calories, total fat, saturated fat, and cholesterol than other conventional meats. Health-conscious Americans are making informed decision to consume lesser amounts of saturated fat and cholesterol in their diets. Goat meat also contains high levels of iron and potassium than is found in other types of meats (Correa 2011). Goat meat has

higher levels of iron (3.2 mg) when compared to a similar serving size of beef (2.9 mg), pork (2.7 mg), lamb (1.4 mg), and chicken (1.5 mg). Comparatively, goat meat also contains higher potassium content with lower sodium levels. Regarding essential amino acid composition, goat meat closely resembles that of beef and lamb. As the health benefits of goat becomes more widely known among the general population, the demand for alternative low-fat red meat should also continue to increase.

**Table 1.** Nutrient Composition of Goat Meat and Other Types of Meat\*\*

<b>Nutrient</b>	<b>Goat</b>	<b>Chicken</b>	<b>Beef</b>	<b>Pork</b>	<b>Lamb</b>
<b>Calories</b>	122	162	179	180	175
<b>Fat (g)</b>	2.6	6.3	7.9	8.2	8.1
<b>Saturated Fat (g)</b>	0.79	1.7	3.0	2.9	2.9
<b>Protein (g)</b>	23	25	25	25	24
<b>Cholesterol (mg)</b>	63.8	76.0	73.1	73.1	78.2
<b>Iron (mg)</b>	3.2	1.2	2.9	2.7	1.4

\*\*Per 3 oz. of cooked meat; USDA Nutrient Database for Standard Reference, Release 14 (2001)

Source: <http://www.aces.edu/pubs/docs/U/UNP-0061/>

## Data and Methodology

Face-to-face interviews of a conveniently selected sample of participants were used in collecting the data reported in this paper. Volunteers were sent to two locations in metropolitan Nashville, Tennessee area for this purpose. An area with stores that carried ethnic food items and restaurants was targeted for these interviews. Additional efforts were invested during a one-day small farm expo located in another part of the metro area. Three days total were spent on collecting data from these two locations. A total of fifty-five completed and usable surveys were collected. This represented 79% of the 70 questionnaires originally prepared for distribution at these locations. Data collected was coded and entered for processing using the Excel spreadsheet and the Statistical Package for the Social Sciences (SPSS). Mean, variance, standard deviations were calculated for variables that were of interest the study. Cross-tabulation, regression, and ANOVA procedures from SPSS were also used to calculate statistics of interest.

## Results and Discussions

Results of the survey administered to participants in the research are presented in Tables 2 and 3. While 62.2% of respondent to the survey identified themselves as immigrants, 35.8% indicated that they were from the United States or one of its rust territories. When asked to identify country of birth, a little more than half (51.0%) of respondents identified themselves as Africans, 35.8% as born in the United States and 13.2% as Asian, Middle Eastern, or some other origin.

**Table 2.** Selected Profile of Goat Meat Consumers

<b>Demography</b>	<b>Respondents(n)</b>	<b>Percent(%)</b>
<b>Place of Origin</b>		
Immigrants	34	62.2
US & Trust territories	19	35.8
<b>Country of Origin</b>		
Africa (Nigeria & Ghana)	9	51.0
US & Trust territories	19	35.8
Asia/Middle-East/Others	7	13.2
<b>Race/Ethnicity</b>		
Black (African)	44	83.0
White (Caucasian, Asian/Others)	9	17.0
<b>Place of Residence</b>		
Metro Nashville, TN	50	91.0
Elsewhere (works in Nashville, TN)	4	9.0
Males	24	45.3
Females	29	54.7
<b>Age</b>		
18-30 years	16	28.3
31-50 years	25	47.0
51 years and older	13	24.5
<b>Education</b>		
High School or less	7	15.1
Some College	24	45.3
Professional/Postgraduate	20	37.7
<b>Main Occupation</b>		
Business	5	9.4
Farming	2	3.8
Professional work	23	43.4
Student	13	24.2
Other	10	26.9
<b>Household Income</b>		
Less than \$30,000	13	24.5
\$31,000-\$60,000	22	41.5
\$61,000-\$90,000	6	11.3
Over \$90,000	9	17.0

A total of 83.0% of study participants were Blacks of African descent while 17.0% were Asians, Whites (Caucasians), or other. While 91.0% identified themselves as residents of Metropolitan Nashville area, only 9.0% lived elsewhere although they worked in Nashville. The sample consisted of 45.3% males and 54.7% females. The following distribution was observed for the recorded age of participants: 18 to 30 years old, 28.3%, 31 to 50 years of age, 47.0% and 51 years and older, 24.5%. In terms of education, 45.3% of the participants had some college, 37.7% baccalaureate or postgraduate degrees, 15.1% high school or less. About 9% of the respondents worked in businesses, 43.4% professional workers, 26.9% other occupations, and 24.2% students. While 24.5% of the goat meat buyers earned an income of \$30,000 or less, 41.5% made \$31,000-\$60,000, 11.3% earned \$61,000-\$90,000, and 17% generated \$90,000 or more per year.

**Table 3.** Goat Meat Consumer Buying Behavior and Cut Preferences

<b>Buying Behavior</b>	<b>Respondents (n)</b>	<b>Percent (%)</b>
<b>Buying Goat Meat</b>	43	83.1
Fresh	41	77.4
Frozen	8	15.1
Other	4	7.5
<b>Specific Cuts</b>		
Ribs	1	1.9
Tenderloin	3	5.7
Chops	16	30.8
Other	5	9.6
No preference	28	52.0
Whole carcass	9	17
Young goat meat	6	9.4
Buy cut & whole carcass	10	19.2
<b>Purchasing Location</b>		
Direct – farmer	20	37.7
Retail store	14	26.4
Farmers market	8	15.1
Butcher	6	11.3
Other	3	5.7

### **Buying Behavior, Preference, and Location**

The analysis of data (Table 3) showed that 83 percent of the respondents purchased goat meat. While 77% of the participants preferred buying fresh goat meat, 15.1% frozen, and 7.5 % had no specific preference. Regarding specific cuts, 1.9% said they purchased ribs, 5.7% tenderloin, 30.8% chops, 9.6% other parts, and 52% had no preference, would buy nearly any part, or were simply glad to find goat meat for their special occasions. Of the 53 participants who answered the question, while 60.3% of survey participants were willing to travel for up to 20 miles to

purchase their goat meat, 34.0% were willing to travel more than 20 miles one way to buy their meat. In terms of buying behavior 17% of the participants were willing to purchase whole carcass, 9.4% young goat under one-year old, and 19.2% both cut & whole carcass, while 56.6 other parts. In response to where they bought their meats, 37.7 % indicated that they bought theirs directly from farmer, 26.4 % retail stores, 15.1 % farmers' markets, 11.3 % from the butcher, and 5.7% purchased from other sources.

## Factors Affecting Purchase Decision

Analysis of the survey responses showed that while 32.1% of the participants said they paid too high a price for their goat meat, 54.7 % said they paid the appropriate price for their purchase. In making the decision to buy goat meat, price was considered important by 85% of the buyers while 15% did not consider price important. Taste, package, and nutrition information were considered important by 84%, 75%, and 58% of respondents, respectively. Almost 60% of the participants indicated that they would buy more goat meat if additional information on nutritional value of goat meat was available to them.

Respondents were asked to rate factors that affected their decision to buy goat meat using a scale that ranged from 0, indicating not important to 3, indicating very important. Ranking based on average scores are presented in Table 4. Availability and the cleanliness of the store were tied in first place ranking with a mean score of 2.77 while taste, price, and seller reputation ranked in second, third, and fourth places with scores of 2.75, 2.65, and 2.38, respectively. Surprisingly, packaging scored the lowest in importance (2.06) for this sample of buyers. Overall quality was still of utmost importance to buyers as reflected in the score of 2.84.

**Table 4.** Mean Score Factors Affecting Goat Meat Purchasing Decision

Factor	Mean Score*
Overall Quality	2.84
Availability	2.77
Store Cleanliness	2.77
Taste	2.75
Price	2.65
Seller Reputation	2.38
Package	2.06

\*Mean score based on scale that ranged from 0 = not important to 3 = very important.

A One-Way Analysis of Variance (ANOVA) procedure (Table 5) showed that the decision to buy goat meat was related (at the 1-percent level of significance) to US immigrants status ( $F_{1, 49} = 13.920$ ,  $p = 0.001$ ), buying preference ( $F_{1, 49} = 11.951$ ,  $p = 0.001$ ), and purchasing location ( $F_{1, 48} = 7.714$ ,  $p = 0.008$ ). This implies that goat meat eaters are among the immigrant population who now live in the Nashville Metropolitan area and have the buying power and desire for goat meat. Furthermore, decision to buy goat meat was also significantly related to country of origin ( $F_{1, 49} = 6.853$ ,  $p = 0.012$ ), preference-specific cuts ( $F_{1, 23} = 5.143$ ,  $p = 0.034$ ), and travel distance to purchase goat meat ( $F_{1, 47} = 4.022$ ,  $p = 0.051$ ) at the 5-percent level. These factors were also

significantly related to the length of time as meat goat consumer ( $F_{1, 48} = 3.885$ ,  $p = 0.055$ ) and preparation information ( $F_{1, 38} = 3.196$ ,  $p = 0.082$ ) at the 10-percent level.

**Table 5.** Results of a One-Way Analysis of Variance (ANOVA) Dependent Variable: Buying Goat Meat

Factors		Sum of Squares	Degrees of Freedom(df)	Mean Square (MS)	F	Significance (p)
<b>Country of Origin</b>	B-Groups	5.550	1	5.550	6.853	.012**
	W-Groups	38.870	48	.810		
	Total	44.420	49			
<b>Immigrants (Non-USA-Trust Territory)</b>	B-Groups	2.738	1	2.738	13.920	.001***
	W-Groups	9.442	48	.197		
	Total	12.182	49			
<b>Length of Time as Consumer</b>	B-Groups	.433	1	.433	3.885	.055*
	W-Groups	5.240	47	.111		
	Total	5.673	48			
<b>Buying Preference</b>	B-Groups	3.764	1	3.764	11.951	.001***
	W-Groups	15.116	48	.315		
	Total	18.880	49			
<b>Preference-Specific Cuts</b>	B-Groups	2.264	1	2.274	5.143	.034**
	W-Groups	9.726	22	.442		
	Total	12.000	23			
<b>Purchasing Location</b>	B-Groups	9.415	1	9.415	7.714	.008***
	W-Groups	57.360	47	1.220		
	Total	66.776	48			
<b>Travel Distance to purchase goat meat</b>	B-Groups	5.762	1	5.762	4.022	.051**
	W-Groups	65.905	46	1.433		
	Total	71.667	47			
<b>Preparation Information</b>	B-Groups	.750	1	.750	3.196	.082*
	W-Groups	8.686	37	.235		
	Total	9.436	38			

\*\*\* $p \leq 0.01$

\*\* $p \leq 0.05$

\* $p \leq 0.10$

The respondent said that if more information was available to them on how to prepare goat meat, they would be willing to purchase more. Some of these participants are non-traditional goat meat eaters born in the United States, and they are customers for goat meat. These health conscious American consumers chose to meet their nutritional need with eating goat meat. The market demand is expanding beyond the immigrant communities, wide sprayed from traditional to non-



traditional consumers. Tennessee goat meat producers and marketers have a great potential to fill or satisfy this growing demand with fresh local goat meat from the Metropolitan area markets.

## Conclusions and Recommendations

This paper discussed the profile and preferences of goat meat consumers in the metropolitan Nashville, Tennessee area. Although the participants were selected from two specific sections of the area considered, the results shed some light on what general characteristics are important to buyers of goat meat. Not only are these buyers interested in buying fresh goat meat, they were quite willing to travel in excess of twenty miles to purchase their meat. Availability and the cleanliness of the store were important factors in the decision of the consumers to buy goat meat. While overall quality of the meat was considered very important, the packaging received a much lower factor ranking. The fact that many consumers were buying their meat directly from farmers indicates that there is an enormous opportunity for producers in the Metro Nashville area. Since consumer tastes and preferences are evolving over time, producers need to constantly stay in touch with their clients to constantly monitor changes in preferences. Surveys such as the one reported in this paper can provide such information. A more extensive sample drawn from many segments of Nashville may provide information and results that can be generalized to Tennessee.

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