

Market Analysis of Meat Goat in Ohio

I. Introduction

Goats offer a variety of ways for human consumption. More than 60 breeds of goats serve in the production of milk, meat, fiber and the skin. There are quite a few breeds of goats that have the potential to offer good quality goat meat. Boer goat, originated from South Africa, is the most promising and popular breed in terms of meat production and consumption. According to American Boer Goat Association (www.abga.com), Boer goat is considered by many experts throughout the world to be the premier goat eat producing breed because this breed offers large form size, high carcass yield grades, and uniform visual appearance. One other possible reason is that Boer goat is native of Africa, where people consume a lot of goat meat. Immigrants from Africa, especially north and east part of Africa, which is also one of the largest ethnic group in terms goat meat consumption, are accustomed to Boer goat meat.

The fledging goat meat industry in the United States is largely supported by production in southern states such as Texas, Oklahoma and Arizona, with some minor productions in northern states. On the consumption side, goat meat appeals mostly to ethnic groups, and the rest of the consumption goes to meat eating population who are careful with eating red goat. Goat meat offers a nutritious alternative to red meat.

Traditionally, Ohio is not a goat state, and goats raised in Ohio are mostly for the local 4-H markets. However, with the tremendous influx of immigration and increasing health consciousness of the population, there seems to be a large

market for goat meat in Ohio. This, along with the fact that many previous tobacco farmers have spare land, and goats are easily to raise, triggers an increasing interest on the farmers' side for production and processing. This study will concentrate on the analysis of Boer goat meat market among ethnic groups in Ohio and the feasibility of setting up a processing plant for goat meat to accommodate existing interest in goat meat and stimulate more consumption.

II. Background information on the goat meat market in the United States

The consumption of goat meat has been increasing enormously in recent years in the United States, especially among the ethnic populations. This increase is a result of sociological and economical changes in the United States, especially among the ethnic populations.

a. There is a growing ethnic population in the United States.

The United States has been a favorite country of immigration for foreigners. With a strong economy going on in the 1990's, the United States imported lots of foreign labors to fill the labor market in both traditional and high tech industries. 1990's has been a hectic decade for the political immigrants as well with the break-up of the former Soviet Union, the ethnic war in the former Yugoslavia and Africa. The influx of illegal immigrants from all over the world, especially from the south boarder, also contributes to the increase in ethnic population in the United States in this period of time. Table 1 shows that the drastic increase in percentage in the Hispanic and Asian population characterizes the trend of the United States population increase in the past decade.

Table 1: United States Population Trend (1990-2000)

	1990	2000	Percentage of Total Population (2000)	Net Increase	Percentage Increase
Total Population	248,709,873	281,421,906	100.00%	32,712,033	13.15%
African American	29,986,060	34,658,190	12.32%	4,672,130	15.58%
Hispanics	22,354,059	35,305,818	12.55%	12,951,759	57.94%
Asian	6,908,638	10,242,998	3.64%	3,334,360	48.26%

Goat meat is particularly popular with the Hispanics, especially the Mexicans. As we can see from this table, the largest group of ethnic consumers of goat meat is the Hispanics, with an increase of 57.94% in population from 1990 to 2000. Muslims in Asian and part of Africa also consume lots of goat meat and that ethnic population increased tremendously in the past decade as well.

b. The increase in ethnic household income in the United States

Not only did the ethnic population increase at an unbelievable rate, but also the household income of ethnic groups in the United States rocketed in the past decade. According to the United States Census Bureau (www.census.gov), the average household income increased by 18.79% during the past decade, with the Asian household income increasing at the rate of 51.32% after adjusting inflation.

Table 2: United States Household Income Trend (1990-2000)

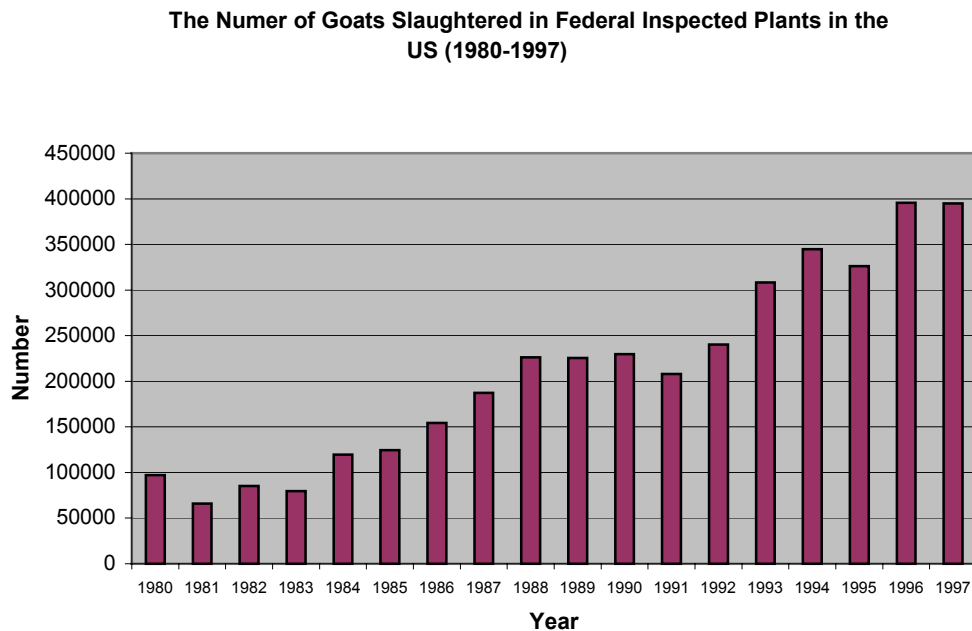
	1990 (in 2000 Dollar)	2000	
Household Income	Mean	Mean	Percentage Increase
All Households	\$48,024	\$57,047	18.79%
White	\$49,962	\$59,280	18.65%
African American	\$31,860	\$40,067	25.76%
Hispanic	\$35,915	\$42,411	18.09%
Asian	\$46,412	\$70,231	51.32%

The increase in income could possibly lead to the more disposable income in the ethnic households, which will results in more consumption of goat meat. Actually, some researches do show that there is more disposable income for ethnic groups that goes directly into the purchasing of more and better food.

c. Supply of goat meat from the federal inspected plants.

If we look at the goats slaughtered at the federal inspected plants nationwide, we could see that the number of goats slaughtered has been increasing steadily from 1980 to 1997(Chart 1). Even though there are more goats slaughtered each year, the United States still imports an increasing number of goats. On the national level, the supply of goat meat cannot satisfy the consumption.

Chart 1: Goats Slaughtered at Federal Inspected Plants in US



(National Agricultural Statistics Services of USDA, <http://www.usda.gov/nass/>)

d. Export and Import of Meat Goat in the United States

Statistics show that United States does not have enough meat goat production to keep up with the demand of goat meat.

(<http://goats.clemson.edu/NY%20Paper/newyork.htm>). The Foreign Agriculture Service of the USDA compiles goat export/import statistics annually, including value in U.S. dollars. They use the measure of "metric tons of goat meat". A metric ton is 2204 lb and, by using an assumed weight of 30 lb per carcass with bones, one can calculate the estimated number of goats moving into/out of the U.S. each year.

Table 3 documents this movement and demonstrates that the U.S. shifted from a net exporter of goats to a net importer in 1991; it also quantifies the simultaneous increase in goat imports and decreases in goat exports since 1989.

Table 3: United States Meat Goat Imports and Exports (1989-1994)

Year	Imports to U.S.	Exports from U.S.	Balance
1989	86,067	122,056	+35,989
1990	99,353	115,413	+16,060
1991	122,932	53,246	-71,506
1992	172,280	60,444	-148,836
1993	136,364*	3,504**	-132,860
1994	138,481*	None**	-138,481

**These figures probably reflect reduced Australians exports of goats due to severe drought conditions.*

***Note the precipitous drop in exports as imports fell markedly in 1993 and 1994, thus conserving domestic supplies*

(From the Foreign Agriculture Service of the USDA)

III. Market Analysis of Meat Goat in Ohio

a. Demographics in Ohio and major metropolitan areas in Ohio

The meat goat market in Ohio is largely patronized by the ethnic population in Ohio. The ethnic populations in Ohio is scattered around large metropolitan areas such as Columbus, Cincinnati, Cleveland and Dayton and Toledo. The ethnic population in Ohio is a balanced combination of Hispanics, Asian and people originally from Muslim countries in Asia and Africa. Table 4 shows that even though the percentage of the ethnic population is relatively small in Ohio, the percentage increase of the ethnic population from 1990 is huge.

Table 4: Ethnic Population and its Increase in Ohio

	Ohio	Percentage in Ohio Population	Percentage Increase from 1990
Total Population 1990	10,847,115	N.A.	
Total Population 2000	11,353,140	N.A.	4.67%
Hispanics 1990	139,696	1.29%	
Hispanics 2000	217,123	1.91%	55.43%
Asian 1990	91,179	0.84%	
Asian 2000	132,633	1.17%	45.46%
African American 1990	1,154,826	10.65%	
African American 2000	1,301,307	11.46%	12.68%

Profile of General Demographic Characteristics: 2000 (US Census Bureau)

The ethnic population in Ohio, as we can see from the table below, concentrates in several large metropolitan areas. The five big cities, namely, Cincinnati, Cleveland, Columbus, Dayton and Toledo constitute more than 70% percentage of the whole population in Ohio in 2000. Moreover, a higher percentage of ethnic population lives in those areas. This distribution of the ethnic population in Ohio implies that we will have to concentrate our marketing efforts on the metropolitan areas in Ohio if we want to target the

ethnic consumers. As we can see from the table, Cleveland area has a predominantly largest Hispanic and African American population as well as taking the lead in Asian population. However, the large amount of Asian and Hispanic population in Columbus and Cincinnati also deserves some marketing efforts.

Table 5: Ethnic Population in the Metropolitan Areas in Ohio (Year 2000)

Metropolitan (2000)	Ohio	Cincinnati	Cleveland	Columbus	Toledo	Dayton	Total (5 cities)	Percentage among Ohio Population
Total Population	11,353,140	1,979,202	2,945,831	1,540,157	618,203	950,558	8,033,951	70.76%
Hispanic	217,123	22,488	80,736	28,115	27,125	11,329	169,793	78.20%
African American	1,301,307	231,006	493,492	206,136	78,911	135,330	1,144,875	87.98%
Asian	132,633	24,629	39,583	36,505	6,949	11,877	119,543	90.13%

b. The general eating habits of difference ethnic groups.

Overall goat meat is most popular in both U.S. coasts and in Florida. If we take a closer look, they are the places where there is a large concentration of ethnic groups. For example, Florida is swarmed with Hispanics, the east and west coasts are very popular places to settle down for ethnic immigrants from all over the world. Markets for goat meat are thus very ethnically oriented. However, this does not mean that, while we are marketing goat meat, we should target the ethnic group as a whole as opposed to the group who consume goat meat for health purpose. Each ethnic group has its own particular product specification and they tend to be located in different regions of the country.

Hispanics are the largest ethnic group in the United State and they are located primarily in Texas and the rest of the southwestern US, California, Chicago and New York. The Hispanics in Ohio largely concentrate in major metropolitan areas, with the highest in percentage of population in Cleveland, followed by Columbus, Toledo and Cincinnati. Within the Hispanic group, persons of Mexican heritage are the largest consumers of goat meat. Moreover, the ethnic group with largest percentage of increase is the Hispanics. Table 6 shows that projected Hispanic population in Ohio. The percentage of Hispanics in the total population is increasing steadily, which means an increasing consumption for goat meat. The Hispanics prefer skinless carcasses with the feet off and the head on. They also like lightweight carcasses, called cabrito, weighing about 10 pounds. Compared with the Muslims, it is easier to market goat meat to the Hispanics and there is a huge market out there in Ohio.

Table 6: Projected Hispanic Population in Ohio

	<u>July 1, 1995</u>	<u>July 1,2000</u>	<u>July 1,2005</u>	<u>July 1,2015</u>	<u>July 1,2025</u>
Total Ohio Population	11,151,000	11,319,000	11,428,000	11,588,000	11,744,000
Ohio Hispanic Population	162,000	183,000	206,000	257,000	319,000
Percentage of Hispanics	1.45%	1.62%	1.80%	2.22%	2.72%
Percentage Increase of Total Population		1.51%	0.96%	1.40%	1.35%
Percentage Increase of Hispanics		12.96%	12.57%	24.76%	24.12%

Projected State Populations, by Sex, Race, and Hispanic Origin (1995-2025)

(Numbers rounded to nearest thousand. Resident population. Series A Projections. For more details, see PPL #47, "Population Projections For States, by Age, Sex, Race, and Hispanic Origin: 1995 to 2025.")
US Census Bureau (www.census.gov)

In Ohio, Muslim community includes people from Middle East and some Asian Muslim countries, such as Indonesia, Philippines. The Muslim population in the neighborhood of Toledo is basically the overflow of the Muslim population from Michigan, specifically from Detroit, which is the largest single Muslim market in the US. The Muslims only eat Halal meat and poultry, which is slaughtered by a Muslim. Thus the Muslims tend to patronize the little stores in their community, where they could buy Halal meat instead of going to Chain Stores like Kroger or Meijer. In terms of goat consumption, Muslim consumers generally want a skinless carcass of less than 35 pounds, which typically must be certified as having been processed along Halal guidelines(See Appendix 1 for detail). A Survey of Somali Muslims indicates that 98% of the people participated in the survey think it is very important to follow the Halal ritual. (Agriculture Utilization Research Institute, The Feasibility of Meat Goats in Minnesota, 2001).

Moreover, even though only Asian Muslims are traditionally known to consume goat meat, the Chinese, and the Koreans are beginning to catch up in the meat goat consumption. Chinese makes full use of the whole carcass, including the head and bones, not the prime cuts only. However, the Chinese, especially the non-Muslim Chinese, take meat like goat meat and lamb as “warm meat”, which could keep you warm in winter and hot in summer. Thus the consumption pattern of the goat meat for the Chinese might differ from the other ethnic group. In winter, the demand will go up and it will go down in summer. The preferred weight for the Chinese is 60-80 pounds live. Asian population in Ohio has a percentage increase of 45% from ten years ago. This group is also the group with

the highest income, and it definitely has a great potential in the consumption of goat meat.

Recent immigrants from the Caribbean and Africa plus some African Americans want a headless skin-on carcass with the feet on. Furthermore, they prefer the carcass of undermined weight to be heavily singed.

c. Ethnic Holidays.

Goat meat or lamb is the meat that is often on the dinner table for the Muslim and Hispanics. Most of the goat meat consumption is year-round and the demand for the goat meat is pretty much steady except during the ethnic or religious holidays. During the holidays, according to a Muslim store which sells goat meat in Cincinnati, the sale goes up about 3 or 4 times than the usually sale. This deserves a special attention from the producers and marketers to understand the timing of the holidays, the importance of it and the special slaughter and handling of the meat goat of different ethnic and religious groups. Appendix 2 explains the significance of each religious holiday and the specifications for meat goats.

From the distribution of the religious holidays over the year, we could see that there might be a peak season in Spring when people celebrates the Easter, and another peak season in winter and early spring from October to February. This also coincides with the Chinese habit of eating goat meat only in cold seasons.

d. Estimation of the demand of goat meat in ethnic market in Ohio.

Since Ohio is not traditionally known as a state that has large concentrations of ethnic groups like Texas, California and New York do, it is very

difficult for the marketers of goat meat to find a single large market in Ohio. As we mentioned before, the ethnic population in the five large metropolitan areas in Ohio constitutes about 80% of the ethnic population in the whole states.

Marketing efforts aiming at these cities will be worthwhile.

However, even in these metropolitan areas in Ohio, the ethnic populations scattered around, and small-scale ethnic stores are all over the state. These ethnic stores make sales by the word of mouth, and do not have enough resources to track their sales and do promotion in a scientific way.

However, we could make a rough estimation of the demand of goat meat to see whether the demand justifies some extra efforts in the production and processing side.

We add up the total population of the Asians and the Hispanics in Ohio, which is the major ethnic population that consumes goat meat. We assume that there are 5 persons in each household, since the ethnic household is usually larger than the average. Among these 69,951 households, we assume that 10% of them eat goat meat regularly, which comes down to 6,995 households. Again, we assume that each household consumes 5 lbs. of goat meat each month and 6 lbs. of goat meat during the holiday month, that is a total of 559,610 lbs. of goat meat. If we assume that the average carcass weight of the goat is 40 lbs., the total demand in the ethnic market in Ohio is 13,990.

Table 7. The Estimation of Demand of Meat Goat in Ethnic Market in Ohio

Total Population (Asian and Hispanics)	349,756
Total Number of Households *	69,951
Households that Consume Goat Meat*	6,995
Goat Meat Consumed per Household lbs.* per Month	5
Holiday Consumption*	6
Number of Months in Holidays	2
Total lbs. Of Goat Meat Consumed	559,610
Average Carcass Weight Per Goat	40
Total Number of Goats Demanded	13,990

This is a relative conservative estimation of the demand. If you compare this with the consumption nationwide, this estimation is much in line with the nationwide consumption. The Hispanics and Asian population in Ohio is about 1% of the Hispanics and Asian population nationwide. The 13,990 heads of goats is about 3.5% of the goats processed in federal inspected plants nationwide. However, we have to keep in mind that the sales of the meat goat in the ethnic markets tends to be local, and most of them are processed in the State inspected plants. Some of the goats are even customer-butchered in the farm. When we take all these factors into consideration, this estimation makes sense.

IV. Meat Goat Production and Processing in Ohio

a. The supply of goat meat in Ohio.

The meat goat industry in Ohio is very underdeveloped. Farmers raise goats mostly for the local 4-H markets and the auctions. The sale at this market is very limited and that is not a large market for meat goat. The auctions, again, caters to small-scale sales and all of them tends to be local.

With the tobacco farmers losing their tobacco plantation and having extra land, more and more farmers are trying to find something to do with their land.

Goats come into this picture because it is relative easy to raise goats and the cost of raising goats is comparably lower than the other livestock. The Ohio State University Extension and the Ohio Cooperative Development Center hosted a workshop on meat goat and more than 100 farmers in southern Ohio came to the workshop and showed great interest in goat meat production. However, due to the lack of organization, there is no exactly number of how many farmers are raising goats in Ohio and how many meat goats we have in Ohio. To facilitate further activities on this side, the Ohio State University Extension organized a Meat Goat Task Force, which consists of several county extension agents, professors in meat goat production and processing, and personnel from the Ohio Cooperative Development Center.

b. The Processing of goat meat.

Currently, there is no processing plant that is dedicated to the processing of lamb or goats. However, for the purpose of serving the ethnic market in Ohio, there are four processing alternatives in the state of Ohio, according to the Division of Meat Inspection, Ohio Department of Agriculture. First if the farmers kill and process the goat themselves, they could give them away to anyone, but there should not be any money involved. This should work fine with the ethnic farmers who raise goats and processed them on-farm and give them away to friends and relatives.

The second category is the custom exempt category, by which the State of Ohio licenses some plants to customer slaughter goats, but the meat must be stamped not for sale. This would work with someone who buys goats from the

farmers and custom-butcher them at a licensed plant for his/her own consumption. Here lies some opportunity for people to work as a cooperative to provide the slaughtering and processing services to the customers. Since it is relatively small in scale and it can specialize only in lamb, goats, or rabbits to cater to the ethnic groups. These small scale slaughtering and processing plant can also work with an Islamic practitioner for Halal meat, which serves the Muslim communities. Since most ethnic groups prefer food to be fresh, this alternative might work very well for the ethnic stores which buy fresh and sell fresh.

The third alternative is the State licensed plant. This state inspected plant can process any meat but the meat is stamped to be sold in Ohio only. To cater to the need of the Muslim community, the plant can hire some Muslims to do the slaughtering and processing according to Halal guideline as well. The fourth one is the federal inspected plant. Meat processed in this plant can be sold nationwide.

V. Meat goat marketing in Ohio

a. Currents situation of the marketing of goat meat

The current marketing outlets for goat meat in Ohio are in the ethnic stores. Some ethnic stores buy frozen goat meat from processors outside Ohio and sell them at some margin, some stores buy fresh from processors nearby. The average retail price is around \$3.60 per pound with bone in, either fresh or frozen. However, the ethnic stores usually serve only a certain clientele and most often, the stores have limited budget for promotion, they do not often get publicized and their goods are not well promoted. Due to these factors, the sales in the ethnic market of meat goat in Ohio seem to be small.

However, due to the lack of publicity of the ethnic stores, there are some consumers who would begin to buy or to buy more meat goat if they have more information or more options to choose from. Taking into consideration that the ethnic population are growing with a rapid rate, we think the demand for meat goat is going to increase if there is a sound marketing plan to promote goat meat for the ethnic stores.

b. Market Segmentation

There are so many customers and customer groups out there in the market, it is impossible for any marketer of goat meat to serve all the markets and serve all of them good. The question comes to what customers do we want and how do we want them.

When we look at the trend nowadays in the food industry, people are more likely than before to pay premium price for fresher food and healthier food. Beginning from restaurants that want to buy local for longer shelf time and better taste of the produce, communities are trying to buy fresh from local farmers, on one hand, to get fresher food and, on the other hand, to support local economy. Moreover, most ethnic populations come from agriculture countries where people buy food fresh directly from farmers in the local farmer's markets. Freshness is also treasured by the ethnic population at an affordable price.

National All	National Ethnic
Local All	Local Ethnic

However, we could not talk about catering to the consumer's need without looking at what we could offer in term of production and processing. Among the four alternatives of meat goat slaughtering and processing, one of them, i.e. slaughter and eat themselves, does not provide any processing or marketing opportunity. Processing in a federal-inspected and selling outside Ohio involves a huge amount of goats at one time to make is proficient, which is not a viable form for the developing goat industry in Ohio. However, they do exist some opportunity of joint action to cater to the needs of the ethnic market.

First is to set up or use existing state-inspected plant to process meat goat and sell in Ohio. Since the process plant is near the market, the meat could still be fresh when it arrives to the customer. Cost could go considerably lower if this plant could process other livestock such as sheep or beef. For Islamic markets that need to follow Halal guideline, an Islamic butcher could be hired to slaughter and processing goats, sheep or beef.

Second is the some joint efforts to process the meat goat in the Custom Exempt processing plants. Custom exempt processing plant, as we explained before is where people bring livestock to a plant to process and consume the processed meat themselves. Ethnic markets mainly sells through the word of mouth and due to the sporadic distribution of the ethnic markets, people usually travels a long way to buy goat meat and thus they tend to buy in a large quantity. If a processing plant is set up near a livestock auction or the site of a goat show, people could buy goats and have it processed at the spot. According to the Meat Inspection Service of the Ohio Department of Agriculture, there are seventy-four

such state licensed plant, including poultry. Meat goat growers could work together, either as an association or form a cooperative to sell the goats and process the goat meat for some ethnic consumers. However, an optimum site will have to be selected to be able to meet the needs of the largest number of ethnic consumers.

VI. Conclusion

Overall, even though the meat goat industry in Ohio is still fledgling, there exists a great demand for goat meat in the ethnic groups because the growing ethnic population, the increasing income of the ethnic group, and the continuing trend of buying fresh, local products. As long as sound marketing efforts are made to make goat meat more readily available and closer to the consumers, there is a market for it.

Moreover, the processing alternatives in Ohio do allow for some marketing and processing opportunities for goat meat growers as long as they are willing to work together to serve the ethnic market. Individuals experience difficulties in profitably achieving either the level of marketing services or the volume necessary to service the market. Marketing and processing in groups can reduce costs and efforts in marketing, transportation, grading, processing, distribution, and research and development, while reducing the costs and risks of the individual grower.

Appendix 1: Halal Slaughter Guideline (El-Mouelhy, 1999)

1. The factory must be under close and constant supervision of a Halal certifier.
2. The premises, machinery and equipment must be cleansed according to Islamic law before any production takes place.
3. The slaughterman must be a mature Muslim of sound mind who understands the fundamentals and conditions relating to Halal slaughter and be approved by religious authorities.
4. The slaughter must be done manually using a stainless steel knife.
5. Facilities must be available for ensuring the knife after each kill.
6. The respiratory tract, esophagus, and jugular vein must be severed.
7. The animal must be completely dead before removing the hide.

Appendix 2: Ethnic Holidays and the Specification for Goat Meat

Religion	Holiday	Date (2002)	Date (2003)	Religious Significance	Meat Goat Specification
Christian	Christmas	Dec. 25	Dec. 25	Celebrates the birth of Jesus Christ	Milk fed kids, but it required out-of-season breeding.
	Easter	Mar. 31	Apr. 20	Celebrates the resurrection of Jesus Christ	Milk fed kids with relatively light colored meat, 3 months or younger. Ideal weight 20-50 lbs.
	Palm Sunday	Mar. 24	Apr. 13	The Sunday before Easter Sunday. Commemorates Christ's entry into Jerusalem.	
	Good Friday	Mar. 29	Apr. 18	The crucifixion of Jesus Christ.	
Jewish	Passover			An 8-day celebration commemorating the freedom of the Israelites from Egypt. Family gatherings and lavish meals.	Milk fed kids.
	Hanukkah			Commemorates the rededication of the Jerusalem temple by Judah Maccabee.	
	Rosh Hashanah			The Jewish New Year. Begins the 10-day period known as the High Holy Days.	
Hindu	Navadurgara	Oct. 7-15			Goats are slaughtered from the 7 th to the 10 th of the holiday after which families meet together and celebrate curried goat. Female goats are not acceptable.
Islamic	Ramadan	Nov 6.	Oct. 26	Muslims fast during the daylight hours of this month. Many prepare certain favorite foods during this month	Male and female kids with all of their milk teeth (not older than 12 months). Males can be whole or castrated. Overly fat kids are discriminated against. Optimum live weight is about 60 lbs.
	Id Al Fitr	Dec. 5	Nov. 26	Celebration at the end of Ramadan. Similar to Christmas.	Yearling animals with one set of adult teeth.
	Id Al Adha	Feb. 23	Feb. 12	The festival of sacrifice. Muslims commemorate it by slaughtering an animal and distributing its meat among family, friends and the needy.	

References:

Agriculture Utilization Research Institute, *The Feasibility of Meat Goats in Minnesota*, 2001. www.auri.org

El-Mouelhy, Mohamed. "Guideline for Halal Slaughter." Guidelines for Halal Slaughter. www.geocities.com/Athens/Acropolis/1950/slaughter.htm (15 Jun. 1999)

Johnson, Sererin, Goat Brief, Iowa State University Extension
<http://www.iowaagopportunity.org/goats/goatbriefing.html>

www.interfaithcalendar.org

US Census Bureau (www.census.gov)