Goat Symposium II - Further Processing

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AMSA Reciprocal Meat Conference
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Gainesville, Florida
Goat Symposium II - Further Processing Topics

- Meat goat industry status
- Goat meat consumption, demand, marketing, and acceptability
- Processing of goat meat
- Goat meat products and palatability
- Summary
- Reciprocation
U.S. Goat Industry 2008

- Goat inventory numbers Jan. 1 USDA data
- Total US goat numbers 3,015,000; 2,500,000 meat goats (83% of total)
- Angora goat decline (~210,000)
- Texas supply at 1,265,000 (1,090,000 meat goats) or 43.6% of goats
- Undersupply of domestic needs despite increased domestic slaughter
  - increases in domestic slaughter prices
  - increased annual imports
2008 Meat Goat Numbers, in 1,000s (NASS)

Hawaii 5,900
Other states 3,000
Total 2,500,000

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Other states 3,000
Total 2,500,000

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Other states 3,000
Total 2,500,000
2007 Federal Inspected Goat Slaughter and (Number of Plants)

- New Eng. 21,731 (15)
- NJ 237,562 (13)
- DE-MD 53,736 (15)
- Other states 20,449 (86)
- Total 639,364 (397)

- Estimated based on 2006
- Texas 39,091 (21)
- California 32,396 (12)
- Other states 7,294 (15)
- Other states 2,949 (11)
- Other states 3,889 (27)
- Other states 26,832 (11)
- Other states 30,572 (8)
- Other states 25,000+ (1)
- Other states 5,180 (14)
- Other states 7,043 (12)
- Other states 17,458 (12)
- Other states 22,081 (8)
Domestic slaughter versus imports

Year
Goats, thousands
Federal slaughter
Imports (34 lb carc equiv)
Other slaughter
Goat Meat Imports

- Majority from Australia (97.6% for U.S., 87% for Canada), 2.3% from NZ, <1% Mexico in 2007
- Mostly imported frozen as carcasses, 6-piece or cubes
- Feral harvest in Australia so supply depends on forage and drought conditions
- ~10,165,740 kg (22,411,388 lb) or ~659,160 15-kg carcass equivalents in 2007
- 15.4 kg (34 lb) average carcass weight
Ports of Entry for Imported Goat Meat

- Philadelphia, PA
- San Francisco, CA
- Los Angeles, CA
- Miami, FL
- Seattle, WA
- Savannah, GA
- Houston-Galveston, TX
- San Juan, PR
- New York, NY

Year

Imports, pounds
U.S. Goat Meat Situation

2,500,000 meat goats
827,300 total domestic slaughter 2007
659,160 imported carcasses

1,090,000 head in Texas (44%)

12.5% San Francisco
12% L.A.

54% Philadelphia
8.5% Miami

1 Dot = 400 Meat Goats

U.S. Department of Agriculture, National Agricultural Statistics Service
Goat Meat Consumption

- Per capita consumption or disappearance rate for goat meat is unknown
- Purchasers of goat meat are usually ethnic consumers – Muslim (60%), Latino/Hispanic, Asian, Caribbean, Italian/Greek at Easter, Eastern European
- Different ethnic groups prefer different types of goat meat (animal age, cut, preparation)
- Halel or Kosher slaughter preferred
- Slaughter of 827,300 in 2007 (639 federal, 189 state inspection) known; informal is unknown
- ~0.19 kg per capita per year based on 50% DP, 28 kg LW, and 61.8 million ethnic consumers
### U.S. minority population

<table>
<thead>
<tr>
<th></th>
<th>2000 (millions)</th>
<th>2007 (millions)</th>
<th>% of 2007 total</th>
<th>% change 2000 to 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U.S.</strong></td>
<td>281.4</td>
<td>301.6</td>
<td>100</td>
<td>5.3</td>
</tr>
<tr>
<td>Total minority</td>
<td>70.0</td>
<td>102.5</td>
<td>34.0</td>
<td>40.1</td>
</tr>
<tr>
<td>Asian, total</td>
<td>10.2</td>
<td>15.2</td>
<td>5.0</td>
<td>23.9</td>
</tr>
<tr>
<td>Black</td>
<td>34.7</td>
<td>40.7</td>
<td>13.5</td>
<td>9.4</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>35.3</td>
<td>45.5</td>
<td>15.1</td>
<td>20.9</td>
</tr>
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</table>
Goat and Goat Meat Marketing

● Effective marketing of any livestock or meat requires consistent terms and language in communications between buyers and sellers

● USDA Selection criteria are written descriptions of conformation classes for live goats and goat carcasses

● USDA Institutional Meat Purchase Specifications for Fresh Goat Series 11 give standard fabrication procedures and cuts

● Meat Goat Selection, Carcass Evaluation & Fabrication Guide has pictures and explanations of Selection criteria and IMPS for industry use
This manual has been developed as a guide to the meat goat industry in evaluating live meat goats, measuring important carcass traits and standardizing culling procedures for goat carcasses. The terminology in this manual has been adapted from USDA Agricultural Marketing Service Institutional Meat Purchase Specifications (IMPS) selection criteria for live goats and goat carcasses in Series 11 Fresh Goat. Traits that influence meat yield are conformation, relative proportion of muscle to fat and bone, and the relative body size as weight or the heart girth/barrel circumference measurement.

These pictures also show that goats will appear different in different lighting conditions. The three views above show the same goat, but under different light, so that the coat color is in a different shade in the three pictures. Shadows also will change the visual impressions of live animals.
Goat Carcass Evaluation

Selection Classification Comparisons

Carcasses of meat species are evaluated to give an estimation of the ratio of muscle to fat and bone or the amount of edible meat that will be obtained. Goats have a distinctive hip and leg structure that changes during cooling of carcasses to give the carcass a more elongated and stretched appearance than with other meat species.

The relative proportion of lean meat yield from the carcass is influenced by carcass weight, carcass conformation, amount of kidney, heart, and pelvic fat within the body cavity, and relative extent and depth of subcutaneous fat over the shoulder and ribs.

Goats and their carcasses have unique muscle, fat and bone growth and development that require evaluation of different carcass traits than the traits evaluated in other red meat species. The breast muscle (Leungshatnikvus dorsi) is usually too small to be measured accurately in most goat carcasses weighing less than 60 pounds, so the thickness of muscles is the different carcass parts is used to determine the carcass conformation. Lean flank color is indicative of relative physiological age of the live goat, with a pale red color more highly desired by consumers. The same descriptive conformation terminology is used for live goats and goat carcasses.

Carcass traits that can be easily evaluated and highly influence muscle to bone ratios or consumer desirability are:

- Carcass weight (usually hot carcass weight before the carcass is chilled after slaughter)
- Conformation as Selection 1, Selection 2 or Selection 3.
- External fat score as 1 = minimal, 2 = fat over rib, 3 = excessive fat cover.
- Kidney, heart and pelvic internal fat as a percentage of hot carcass weight.
- Lean color as A (pale red), B (red), C (very red).

Kidney, Heart and Pelvic Fat

Goats deposit fat in the kidney and pelvic regions before depositing fat behind the shoulders and over the ribs. Kidney, pelvic and heart fat are reported as a percentage of the carcass weight. Trained observers can make rough visual estimations of the percent KPH fat based upon the degree to which the KPH fat fills the body cavity relative to the carcass size. Learning to estimate the amount of KPH fat is best accomplished by removing the fat from the body cavity and weighting it to calculate the percentage of KPH fat of the total carcass weight. KPH fat is left in goat carcasses until carcass fabrication into cuts to reduce moisture loss and to add weight for sales of carcasses through the different meat marketing channels.

Subcutaneous Fat Cover Score

Subcutaneous body fat is deposited differently in goats than in the other red meat species. The external fat is usually deposited behind the shoulder and over the ribs, but not over the back. The objective measurement of external fat depth is difficult, but the estimation of external fat is important because the fat will be trimmed from the carcasses or cuts before sale of retail cuts to the consumer, which reduces the lean meat yield. The subjective fat cover scores of 1, 2, and 3 reflect the relative degree of subcutaneous fat covering the carcass. Most fat is typically deposited over the ribs and behind the shoulder than over the rear legs and back. Overly fat carcasses have a thin layer of fat over the back and a very thick pad of fat over the shoulders and ribs, as shown for score 3.
Goat Carcass Fat Evaluation
USDA Institutional Meat Purchase Specifications

Fresh Goat Series 11

The USDA IMPS for Fresh Goat Series 11 describe five cutting styles that correspond to different carcass weights and subsequent cuts for institutional and retail purchasers. The IMPS codification system has platter, roasting, barbeque, food service and hotel styles with identification codes that give common language and uniform specifications for carcasses, cuts and products. Meat cuts from the different styles include foreleg, hindshank, neck, free middle, shoulder, outside shoulder, inside shoulder, rump, rib, breast, back, loin, sirloin and leg.

<table>
<thead>
<tr>
<th>IMPS Style</th>
<th>Carcass Weight Range</th>
<th>Recommended Skeletal and Muscular Cuts</th>
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</thead>
<tbody>
<tr>
<td>Platter</td>
<td>15 lb. or less</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 to 30 lb.</td>
<td></td>
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<tr>
<td></td>
<td>20 to 40 lb.</td>
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<td></td>
<td>30 to 40 lb.</td>
<td></td>
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<tr>
<td></td>
<td>40 lb. or more</td>
<td></td>
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<tr>
<td>Roasting</td>
<td>15 to 30 lb.</td>
<td></td>
</tr>
<tr>
<td>Barbeque</td>
<td>15 to 30 lb.</td>
<td></td>
</tr>
<tr>
<td>Food Service</td>
<td>30 to 40 lb.</td>
<td></td>
</tr>
<tr>
<td>Hotel</td>
<td>40 lb. or more</td>
<td></td>
</tr>
</tbody>
</table>

Average Weights and Weight Ranges of IMPS Cuts with Different Goat Carcass Styles

<table>
<thead>
<tr>
<th>Cut name</th>
<th>Platter</th>
<th>Roasting</th>
<th>Barbeque</th>
<th>Food Service</th>
<th>Hotel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15 to 30</td>
<td>20 to 40</td>
<td>30 to 40</td>
<td>40 and above</td>
<td></td>
</tr>
<tr>
<td>Leg</td>
<td>3</td>
<td>2.4</td>
<td>7.3-10</td>
<td>8.2</td>
<td>11.3</td>
</tr>
<tr>
<td>Hind shank</td>
<td>1.4</td>
<td>0.6-6.7</td>
<td>1.4</td>
<td>1.6</td>
<td>1.1-2.4</td>
</tr>
<tr>
<td>Loin</td>
<td>3.6</td>
<td>2.6</td>
<td>5.8</td>
<td>4.8-8.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Rack</td>
<td>2</td>
<td>1.2-5</td>
<td>1.2-5</td>
<td>3.7</td>
<td>2.7-5.6</td>
</tr>
<tr>
<td>Rack (rib)</td>
<td>1.2-5</td>
<td>0.9-6.6</td>
<td>0.9-6.6</td>
<td>6.5</td>
<td>3.3-13.6</td>
</tr>
<tr>
<td>Eibs</td>
<td>7.5</td>
<td>4.7-12.6</td>
<td>4.7-12.6</td>
<td>4.7-12.6</td>
<td>6.5</td>
</tr>
<tr>
<td>Shoulder</td>
<td>0.6</td>
<td>7.1-11.5</td>
<td>7.1-11.5</td>
<td>7.1-11.5</td>
<td>6.5</td>
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<tr>
<td>Outside shoulder</td>
<td>0.6</td>
<td>7.1-11.5</td>
<td>7.1-11.5</td>
<td>7.1-11.5</td>
<td>6.5</td>
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<tr>
<td>Square shoulder</td>
<td>1.2-5</td>
<td>0.9-6.6</td>
<td>0.9-6.6</td>
<td>6.5</td>
<td>3.3-13.6</td>
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<tr>
<td>Fore shank</td>
<td>1</td>
<td>0.5-1.5</td>
<td>0.5-1.5</td>
<td>2.2</td>
<td>1.3-8.0</td>
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<tr>
<td>Neck</td>
<td>0.8</td>
<td>0.5-1.4</td>
<td>1.2</td>
<td>0.8-1.9</td>
<td>1.5</td>
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Fresh Goat IMPS Purchaser Specified Options

Purchasers specified options in IMPS allow the customer to precisely define the parameters of the meat product to be purchased. The options also may guide the processor in fabricating carcasses into cuts to provide uniformity in the product appearance, composition and quality. Additional details are in the Fresh Goat series 11 IMPS at http://www.ars.usda.gov/agestand/imps.htm:

- **Style** (platter, roasting, barbeque, food service, hotel)
- **Cut identification** (prim cut or location on carcass)
- **Boneless or bone-in, fat length, special cutting instructions**
- **Added ingredients such as enhancement solutions**
- **Condition selection (1, 2, 3)**
- **Class -- truck, feed, feeder**
- **Maturity -- kid, yearling, goat**
- **Breed type, forage type, organic certification**
- **Slaughter -- Halal, Kosher**
- **Refrigeration -- fresh (refrigerated) or frozen**
- **Weight or thickness of portion cut, cut fat trimming**
- **Netting/tying and packaging and packing requirements**
- **Quality assurance requirements**
Barbecue and Food Service Styles

- Fore leg is removed whole from the shoulder
- BBQ – shoulder and rib is intact for roasting
Goat carcass can be muscle-boned.
Major goat muscles
Dressing percentages, shrinkage and yield

- 27.7 kg (61 lb) average live slaughter weight in 2007 federal plants and state plants
- Dressing percentage for goats shrunk overnight
  - 42 to 52% range
  - 45 to 48% average
- 2 to 8% overnight cooler shrinkage
- 75 to 98% primal cuts yield, lower with fatter carcasses or poorly dressed carcasses
Dressing percentages, shrinkage and yield

- Cuts can be boneless or individual muscles, depending upon preference or IMPS specification
- 50 to 70% lean yield of cold carcass weight
  20 to 35% of live weight
- 1 to 8% kidney, pelvic and heart fat
- 1 to 2.5% trotters
- Slaughter/processing costs are $10 – $20/head; 450 - 600 head per week is profitable, requiring 22,500 to 30,000 head per year (Ferland and Reynolds, 2001)
Selling of Goat Meat

- Usually raw in grocery, supermarket or butchery
- Sometimes restaurant or foodservice
  - Raw chilled (fresh)
  - Frozen
- Whole carcass
- Cubes
- Cuts - leg, rib/rack, shanks

Processsed goat meat products
**Value-added Products**

- Changed in form, function or grouping to increase their economic value and/or consumption appeal
- Value-added product produced through
  - fewer market channel steps
  - decreased production or distribution costs
  - uniform or consistent groups
  - more palatable or usable forms (processing)
  - availability in different form or time
- Further processing is usually defined as processing after primary fabrication or grinding

Value is ultimately determined by customer/consumer purchase
Production Influences on Value-Added and Meat Properties

- Year-round product availability affects value; price spikes around holidays
- Higher unsaturated fatty acids in leg slices from intact male than female or castrated goats (Johnson and others, 1995)
- No differences in meat from castrated or intact young males (Madruga and others, 2000)
- Meat from younger animals (no permanent incisors) more juicy than from older animals (Schönfeldt and others, 1993)
- Tenderness less in yearlings and low conformation kid goats (McMillin and others, 1999)
- Meat from younger animals preferred; specific volatile components were identified (Madruga and others, 2000)
Breed and Stress Influences on Value-Added and Meat Properties

- Meat from Angora goats juicier than from Boer goats (Schönfeldt and others, 1993)
- Higher cooking losses and higher UFA in meat patties from Spanish than Angora goats (Rhee and others, 1997)
- No breed influence on retail shelf life (color, appearance, odor) in air-permeable packaging (Oman and others, 2000)
- Higher shear (3.9 kg) in meat from Spanish than from Boer x Sp X Kiko (3.3 kg) (Gadiyaram and others, 2008)
- 2 h transportation stress preslaughter didn’t alter WHC or W-B shear, but decreased redness and chroma in meat from young goats (Kannan and others, 2003)
- Older goats were more resistant to transportation stress than younger goats (Kannan and others, 2003)
Diet Influences on Value-Added and Meat Properties

- Fatter carcasses - higher drip, evaporation, cooking losses (Schönfeldt and others, 1993)
- Higher concentrate feeding - increased flavor, decreased meat acceptability (Intarapichet and others, 1994)
- Concentrate-fed - higher UFA and lipid oxidation, but same PUFA (Rhee and others, 1997)
- 0.23 and 0.46 kg corn/hd/d Increased income over cost with Boer X and decreased for Spanish kid goats (Nuti and others, 2000)
  - More fat trimming compared with increased weight
  - Ethnic preference for lean, no fat
- Cobalt deficiency increased shear force and decreased muscle color (Kadim and others, 2004)
Goat Meat Acceptability

- Loin chops juicier and more tender than leg steaks; higher scores from foreign sensory panelists than domestic panelists (Griffin and others, 1992)
- Higher scores for cooked shredded chevon from goat eaters than non-eaters (Kannan and others, 2005)
- Darker and less fat in broiled than microwaved chevon chops, but similar in shear and cooking yield (James and Berry, 1997)
- Goat leg tenderness unaffected by panelist age, sex, ethnicity; palatability lowest with youngest or highest income consumers (Dawkins and others, 2000)
- “Goaty” odor attributed to 4-methylloctanoic (hircinoic acid) (Wong and others, 1975) and other branched chain fatty acids
Goat Meat Acceptability

- Refrigerated cooked chevon developed lipid oxidation (WOF) more rapidly than other cooked meats (Lamikanra and Dupuy, 1990)
- Goat meat less intense flavor, more tender, and juicier than lamb (Swan and others, 1998)
- Panelists found goat and lamb curries very acceptable (Swan and others, 1998)
- Consumers differentiated plain and seasoned goat from beef products; scores were similar when goat was served before beef, but lower when beef was served before goat (Rhee and others, 2003)
Meat Processing

Single or Combination unit operations

- Tenderization- mechanical, electrical, enzymatic
- Grinding
- Flaking
- Emulsifying
- Forming
- Cooking
- Freezing
- Curing
- Smoking
- Marination

Goat meat and muscles can be processed using all of the normal unit operations for processing and preservation.
Raw Chilled Goat Meat Tenderization

- 100 V electrical stimulation decreased shear force and increased sensory tenderness more in *L. dorsi* than legs (Savell and others, 1977)
- ES equally effective at different times during slaughter (McKeith and others, 1979)
- ES decreased muscle glycogen immediately after slaughter and decreased W-B shear from 4.2 in controls to 3.0 kg with ES (Gadiyaram and others, 2008)
- 330V, 50 Hz, 10 pulses/s increased tenderness in tenderstretched chevon sides more than 35, 110, 550 or 1100 V (Biswa and others, 2007)
Raw Chilled Goat Meat Tenderization

- Blade mechanical tenderization decreased sensory connective tissue and shear force in all cuts (Bowling and others, 1976)
- Endogenous enzymatic decreased through 20 days of 5°C postmortem storage (Nagaraj and others, 2002)
- Maximal tenderization in first 4 d postmortem, with decreased shear force at 8 d (Kannan and others, 2002)
- Heated calpastatin activities lower at 4 d than 1 d of aging, but no effect on MF protein concentrations (Gadiyaram and others, 2008)
- 2.2% CaCl$_2$ injection at 5% at 24 hr decreased W-B shear and increased sensory tenderness, juiciness, and flavor scores (Lee and others, 2007)
Ground Goat Meat

- Shear force of ground patties was less than with bowl cutting (James and Berry, 1997)
- Freezing of broiled goat meat patties, thawing, and reheating did not greatly reduce sensory scores (Padda and others, 1988)
- Lipid oxidation of raw and cooked goat meat patties was stable at -20°C and increased with 4°C storage (Rhee and others, 1997)
- High rancidity in plain cooked ground goat meat, but not in chili, with 3 and 6 d chilled storage after cooking (Rhee and others, 2003)
Ground Chevon

- 10 ppm α-tocopherol acetate increased water binding, odor scores, color and lipid stability, shelf-life by 4 d (Verma and Sahoo, 2000)
- Lipid oxidation during aerobic storage of raw and cooked plain or salted goat patties was decreased with 0.25% ethanol extracts of peony or rosemary (Han and Rhee, 2005).
- Lower aerobic microbial counts, higher acceptability, and longer shelf-life of minced goat meat in vacuum (28 d) than aerobic packaging (3d) (Babji and others, 2000)
- Chevon patty sensory quality more with VP than aerobic packaging, but not >15 d (Rajkumar and others, 2004)
- Oat bran (15-50%) or oatrim/oat gum (0.5-2%) decreased fat and shear force, increased tenderness and juiciness (Dawkins and others, 1999; 2001)
Further Processed Products

- Cured and smoked (ham)
- Sausage
  - Smoked
  - Fermented
  - Emulsified

- Cured goat thigh ripened (dried) for 60 days was of high quality and flavor (Paleari and others, 2008).
Goat Sausages

- Linked sausages with 25 or 50% goat meat = 100% pork; higher color and flavor in 100% goat sausage (Reddy and others, 1987)
- Cabrito smoked sausage was not different with 1.75 or 3% soy protein concentrate, but cost was >$13.50/kg (Cosenza and others, 2002)
- 0.5% rosemary increased oxidative stability of fermented goat meat sausage (25% fat) (Nassu and others, 2003)
- Redness higher in beef than chevon sausages; but higher in chevon jerky with no sensory differences from beef jerky (Eega and others, 2005)
- Beef and chevon sausage scored the same; higher scores for fresh and smoked sausages by chevon purchasers than non-purchasers (Kannan and others, 2005)
Goat Emulsified Sausages

- Goat water-soluble and actomyosin proteins had higher emulsifying capacity than sheep, chicken, pork proteins (Chattoraj and others, 1979)
- Goat and sheep protein was more extractable with higher emulsifying capacity than cattle and water buffalo protein (Turgut, 1984)
- Emulsified goat sausages were less tender and elastic, but more juicy with increased pork fat or shortening (20-40\%) (Intarapichet and others, 1995)
Further Processing

- Frankfurters with mechanically deboned goat from old or young goats had similar composition and processing characteristics with beef and pork controls (Marshall and others, 1977)

- Mince recovered from different parts of goat carcasses was similar in composition, color, and lipid stability (McMillin and others, 1999)
Goat Meat Product Acceptability

- Moist heating of soybeans eliminated beany flavor in goat meat patties extended with full-fat soy paste (Das and others, 2006)
- Goat meat patties with soy paste - decreased shear force, increased redness, and increased overall acceptability compared with soy granules (Das and others, 2008)
- Goat meat nuggets with soy paste - decreased textural properties and increased overall acceptability compared with soy granules (Das and others, 2008)
- Goat meat nuggets - slightly decreased texture and decreased juiciness and acceptability with milk coprecipitates (Bagchi and others, 2007)
Goat Meat Product Acceptability

- Consumer and trained sensory panels found similar sensory properties in patties with <40% chevon and >60% beef (James and Berry, 1997)
- Goat meat patties were distinguishable, but not different in acceptability, from lamb patties, although both were deemed soft and greasy (Swan and others, 1998)
- 66% of consumer panelists would purchase goat smoked sausage (Cosenza and others, 2003)
- Beef and chevon sausage scored the same; chevon purchasers gave higher scores to fresh and smoked sausages than non-purchasers (Kannan and others, 2005)
Product Costs

● Raw material costs June 10, 2008
  − 40-80 lb live kid goats Sel. 3 (San Angelo) $1.00/lb. = $80
  − 48% DP = 38.4 lb hot = 36 lb cold carcass = $2.22/lb
  − 66% lean yield = 24 lb = $3.33/lb boneless goat meat
  − Does $0.40/lb x 100 lb = $40 32 lb boneless = $1.25/lb
  − Frozen goat meat $1.75/lb avg. in 2007 boneless = $2.65
  − Yellow Sheet boneless frozen beef insides $1.78
  − Yellow Sheet 75% trim $1.26
  − Yellow Sheet hams $0.70 boneless 4-way $1.33

● Final product costs/lb goat pork beef
  − Smoked sausage $6.95 $3.95
  − Cured smoked legs (hams) $10.95 $2.26
  − Summer sausage $10.00 $4.25
Summary

- Supply of goats and goat meat is increasing, but slower than ethnic population growth
- Preliminary live animal and carcass classification and evaluation schemes have been developed
- Slaughter techniques are similar to those for lambs and other small species
- Standardized fabrication techniques and IMPS have been developed
- Most processing technologies can be used to produce goat meat products, but consumers purchase goat meat cubes and cuts and not processed goat products
Goat Symposium II - Further Processing

Conclusions

1. Goat meat can be processed into many different products
2. Ethnic consumers do not consume many different processed meat items
3. Final processed goat product costs are higher than for other species
Goat Symposium II - Further Processing Questions for Reciprocation

1. Are there sufficient quality, nutritional or other differences in processed meat from different species to warrant price differentials?
2. Are goat meat and goat meat processed products “healthier” and/or more “natural” than from other meat species?
3. Would non-ethnic populations purchase goat meat/goat meat products if they were available?
4. Are yield and/or palatability grades needed for goat carcasses and/or meat?
5. Do ethnic populations become acculturated in 2nd and subsequent generations and decrease desire for “ethnic foods”?