Selection Of Goats

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Why is the goat industry important

• Most of the goat industry in Arkansas is in the meat market, but worldwide more people drink goat milk then cow milk.

• Goats were one of the first domesticated animal

• U.S. Inventory* –
  - Meat Goats: 2.86 million  (4% decrease)
  - Dairy Goats: 360 thousand  (unchanged)

* January, 2012 USDA Goat Inventory
Why is the goat industry important

- Arkansas Inventory*:
  - Meat Goats- 53,000 (10% increase)
  - Dairy Goats- 4700 (2% decrease)

* January, 2012 USDA Goat Inventory
Goat Products

- Goats are classified into 3 main types
  - 1. Meat
  - 2. Dairy
  - 3. Mohair
Interesting Facts

• Goats were domesticated as early as 7000 BC.

• They were brought to North America with sheep in the early 1600's.

• A goat has only two teats for milking whereas a cow has four.

• Many people who are allergic to cow's milk can digest goat's milk without difficulty.

• Goats most commonly give birth to twins.
Meat Goats

- Goat is the most highly consumed meat in the world.

- Meat from goats is known as chevon.

- It is a very popular product worldwide, and gaining popularity in the US.

- A major challenge facing the meat goat industry is the need to create a wider range of products that will appeal to more (or newer) clientele consumers while still meeting the needs of existing consumers.
Dairy Goats

- More goat’s milk is consumed worldwide than cow’s milk.

- Goat milk has a more easily digestible fat and protein content than cow milk.

- A dairy doe may be milked the same way as a dairy cow—either with a machine or by hand.

- Goat milk is used for drinking, cooking and baking.

- It is used to make cheese, butter, ice cream, yogurt, candy, soap and other body products.
Mohair Goats

• The mohair goat is a variety that originated in Turkey, centering around the region of Angora.

• The average goat in the U.S. shears approximately 5.3 pounds of mohair per shearing and are usually sheared twice a year.
Mohair Breeds
Angora

Originated in the Angora District of Asia Minor

Both sexes are horned

Ears are droopy & heavy

Are a medium sized breed

Valued for mohair fleece

Less prolific than most other breed of goats

Photo: Oklahoma State University
Originated in Middle East (Iran, Iraq, Afghanistan)
Has a regal appearance, due to long coat & the long, sweeping horns
Both sexes are horned
Healthy & hardy breed
Do not tend to jump
Valued for cashmere fleece

Photo: Paul Johnson, Oregon, USA
Meat Breeds
Boer

Originated in South Africa

Ears are long & droopy

It is a horned breed

Typical color pattern is a white body with darker (black or brown) head

Value is as a meat goat

Build thick & strong

It is a heavy breed

Photo: Unknown Source
Originated in New Zealand
Purposely developed & bred for meat production
Kiko...means meat or flesh
Both sexes are horned
The horns have a distinct outward & “v” flare
Are hardy & adaptable
Are intermediate in size
Myotonic

Originated in Tennessee
They are also called Stiff Leg, Wooden Leg, and/or Tennessee Fainting Goat
Typically, they are black & white, but other colors are not uncommon
Considered as easy kidders & as good mothers
A thicker & heavier goat
Valued for meat production

Photo: Oklahoma State University
Spanish

Originated in US, goats brought by Spanish
They developed in the wild
As a result; size, ear type, hair length, horns, etc are not standardized
Also, developing in the wild resulted in a small to medium sized goat and one with a smaller udder (to avoid damage by rocks, cactus, etc)
Considered a meat goat

Photo: Oklahoma State University
Pygmy

Originated in many countries in area of western Africa

The hair may be any color, agouti (top picture) is the most predominate

Markings: the muzzle, eyes, ears, & forehead must be a lighter color/tone; the lower legs & dorsal stripe are a darker color/tone

Developed as a meat breed

It is very small framed

Photos: Oklahoma State University
Dairy Breeds
Nubian

Originated in England
Also called Anglo-Nubian
Distinguished by its royal or aristocratic appearance
Its appearance is dominated by its very long, drooping, graceful, & curving ear
Any color is acceptable
It is a larger framed breed
It is a multi-purpose breed
Originated in Oregon, USA

Most distinguishing feature is the shortness of ear length

*Gopher Ear* has a maximum length of one inch, but it is preferable to be non-existent

*Elf Ear* has a maximum length of two inches & curved ends

Hair is short, fine, & glossy

Any color/colors is acceptable
Oberhasli

Originated in Switzerland

The color is chamois, which is like the *bay* color of a horse

Markings: two black stripes down the face, a nearly all black forehead, black dorsal stripe, black legs below the knees, hocks, & black belly

Developed as a dairy goat

It is a medium sized breed

Photo: Dave Battjes
Originated in Switzerland
White/light cream in color
Hair is short & fine, with fringe along spine & thigh
Ears: erect & point forward
Sensitive to sunlight & do best in cool conditions
Medium to large in size
They are heavy milkers

Photo: Oklahoma State University
Toggenburg

Originated in Switzerland

The color is light fawn to dark brown

Ears are erect & white, with dark in middle

A white stripe runs down each side of the face

Legs are white below the knee/hock & a white triangle by tail attach

Oldest known dairy breed

Photo: Oklahoma State University
Meat Goat Standards
Influences on lean meat yield

- Conformation - relative shape of body comparing size, mass, and shape of muscles compared with size, mass, and shape of body
- Relative proportion of muscle to fat/bone
- Relative body size (weight or circumference of heart girth, barrel, or limbs)
## Selection Classes

<table>
<thead>
<tr>
<th>Selection</th>
<th>1&lt;sup&gt;99&lt;/sup&gt;</th>
<th>highest conformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selection 1</td>
<td>1&lt;sup&gt;50&lt;/sup&gt;</td>
<td>middle conformation</td>
</tr>
<tr>
<td>Selection 1</td>
<td>1&lt;sup&gt;00&lt;/sup&gt;</td>
<td>lowest conformation</td>
</tr>
<tr>
<td>Selection 2</td>
<td>2&lt;sup&gt;99&lt;/sup&gt;</td>
<td>highest conformation</td>
</tr>
<tr>
<td>Selection 2</td>
<td>2&lt;sup&gt;50&lt;/sup&gt;</td>
<td>middle conformation</td>
</tr>
<tr>
<td>Selection 2</td>
<td>2&lt;sup&gt;00&lt;/sup&gt;</td>
<td>lowest conformation</td>
</tr>
<tr>
<td>Selection 3</td>
<td>3&lt;sup&gt;99&lt;/sup&gt;</td>
<td>highest conformation</td>
</tr>
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<td>middle conformation</td>
</tr>
<tr>
<td>Selection 3</td>
<td>3&lt;sup&gt;00&lt;/sup&gt;</td>
<td>lowest conformation</td>
</tr>
</tbody>
</table>
Selection 1

Superior meat-type conformation
Thickly muscled as indicated by
- Pronounced (bulging) outside leg (\textit{B. femoris} and \textit{Semitendinosus})
- Full (rounded) back strip (rib and loin, \textit{L. dorsi})
- Moderately thick outside shoulder (\textit{T. brachii} group)
Selection 2

Average meat-type conformation
Moderately muscled as indicated by
  ● Slightly thick and slightly pronounced outside leg (*B. femoris* and *Semitendinosus*)
  ● Slightly full (flat or slightly shallow) back strip (rib and loin, *L. dorsi*)
  ● Slightly thick to slightly thin outside shoulder (*T. brachii* group)
Inferior meat-type conformation
Moderately muscled as indicated by
- Narrow legs, back, shoulders in relation to body length
- Very angular and shrunken appearance
- Deficient muscling in leg, back strip (rib and loin, *L. dorsi*), shoulder
Selection 1$^{50}$
Selection $2^{50}$
Selection 3\textsuperscript{70}
Goat carcass selection classification
Side carcass views
Side carcass views
Other carcass evaluation criteria

- Flank lean color – consumers desire light pink meat color
- Kidney, heart, and pelvic fat - fat is left in carcass to prevent drying, but is waste fat
- Subcutaneous fat cover score –
  - external fat deposited behind shoulder and over ribs, not over back or legs
  - depth is not uniformly distributed for measurement
Lean flank color

A<sup>30</sup>  
B<sup>30</sup>
Kidney, heart and pelvic fat, %
Subcutaneous fat cover score
Fresh Goat IMPS Purchaser Specified Options

- **Style** (platter, roasting, barbeque, food service, hotel)
- **Cut identification** (primal cut or location on carcass)
- **Boneless or bone-in, tail length, special cutting instructions**
- **Added ingredients such as enhancement solutions** (marinades; salt/water/phosphates)
- **Conformation selection** (1, 2, 3)
- **Class** (buck, doe, wether)
- **Maturity** (kid, yearling, goat)
Fresh Goat IMPS Purchaser Specified Options

- Breed type, forage type, organic certification
- Slaughter (Halal, Kosher, other)
- Refrigeration (fresh/refrigerated or frozen)
- Weight or thickness of portion cut
- Fat trim level on cut
- Netting/tying
- Packaging and packing requirements
- Quality assurance requirements
Fabrication guide to IMPS cuts

<table>
<thead>
<tr>
<th>IMPS Style</th>
<th>Carcass Weight Range</th>
<th>Recommended Skeletal Cuts</th>
<th>Recommended Muscular Cuts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platter</td>
<td>15 lb. or less</td>
<td>[Diagram of skeletal cuts]</td>
<td>[Diagram of muscular cuts]</td>
</tr>
<tr>
<td>Roasting</td>
<td>15-30 lb.</td>
<td>[Diagram of skeletal cuts]</td>
<td>[Diagram of muscular cuts]</td>
</tr>
<tr>
<td>Barbeque</td>
<td>20-40 lb.</td>
<td>[Diagram of skeletal cuts]</td>
<td>[Diagram of muscular cuts]</td>
</tr>
<tr>
<td>Food Service</td>
<td>30-40 lb.</td>
<td>[Diagram of skeletal cuts]</td>
<td>[Diagram of muscular cuts]</td>
</tr>
<tr>
<td>Hotel</td>
<td>40 lb. or more</td>
<td>[Diagram of skeletal cuts]</td>
<td>[Diagram of muscular cuts]</td>
</tr>
</tbody>
</table>
ADGA Scorecard
## Scorecard

<table>
<thead>
<tr>
<th>POINTS</th>
<th>Senior Doe</th>
<th>Junio Doe</th>
<th>Buck</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. GENERAL APPEARANCE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>An attractive framework with femininity (masculinity in bucks), strength, upstandingness, length, and smoothness of blending throughout that create an impressive style and graceful walk.</td>
<td>35</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td><strong>B. DAIRY CHARACTER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angularity and general openness with strong yet refined and clean bone structure, showing freedom from coarseness and with evidence of milking ability giving due regard to stage of lactation (of breeding season in bucks).</td>
<td>20</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td><strong>C. BODY CAPACITY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relatively large in proportion in size, age, and period of lactation of animal (of breeding season for bucks), providing ample capacity, strength, and vigor.</td>
<td>10</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td><strong>D. MAMMARY SYSTEM</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly attached, elastic, well-balanced with adequate capacity, quality, ease of milking, and indicating heavy milk production over a long period of usefulness.</td>
<td>35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| TOTALS | 100 | 100 | 100 |
### GENERAL APPEARANCE

An attractive framework with femininity (masculinity in bucks), strength, upstandingness, length, and smoothness of blending throughout that create an impressive style and graceful walk.

<table>
<thead>
<tr>
<th>Stature - slightly taller at withers than at hips with long bone pattern throughout.</th>
<th>2</th>
<th>2</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Head &amp; Breed Characteristics</strong> - clean-cut and balanced in length, width, and depth; broad muzzle with full nostrils; well-sculpted, alert eyes; strong jaw with angular lean junction to throat; appropriate size, color, ears, and nose to meet breed standard.</td>
<td>5</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td><strong>Front End Assembly</strong> - prominent withers arched to point of shoulder with shoulder blade, point of shoulder, and point of elbow set tightly and smoothly against the chest wall both while at rest and in motion; deep and wide into chest floor with moderate strength of brisket.</td>
<td>5</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td><strong>Back</strong> - strong and straight with well-defined vertebrae throughout and slightly uphill to withers; level chine with full crops into a straight, wide loin; wide hips smoothly set and level with back; strong rump which is uniformly wide and nearly level from hips to pinbones and thurl to thurl; thurls set two-thirds of the distance from hips to pinbones; well defined and wide pinbones set slightly lower than the hips; tailhead slightly above and smoothly set between pinbones; tail symmetrical to body and free from coarseness; vulva normal in size and shape in females (normal sheath and testes in males).</td>
<td>8</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td><strong>Legs, Pasterns &amp; Feet</strong> - bone flat and strong throughout leading to smooth, free motion; front legs with clean knees, straight, wide apart and squarely placed; rear legs wide apart and straight from the rear and well angulated in side profile through the stifle to cleanly molded hocks, nearly perpendicular from hock to B, yet flexible pastern of medium length; strong feet with tight toes, pointed directly forward; deep heels with sole nearly uniform in depth from toe to heel.</td>
<td>15</td>
<td>23</td>
<td>25</td>
</tr>
</tbody>
</table>
DAIRY CHARACTER

Angularity and general openness with strong yet refined and clean bone structure, showing freedom from coarseness and with evidence of milking ability giving due regard to stage of lactation (of breeding season in bucks).

Neck - long, lean, and blending smoothly into the shoulders; clean-cut throat and brisket.

Withers - prominent and wedge-shaped with the dorsal process arising slightly above the shoulder blades.

Ribs - flat, flinty, wide apart, and long; lower rear ribs should angle to flank.

Flank - deep, yet arched and free of excess tissue.

Thighs - in side profile, moderately incurring from pinbone to stifle; from the rear, clean and wide apart, highly arched and out-curving into the escutcheon to provide ample room for the udder and its attachment.

Skin - thin, loose, and pliable with soft, lustrous hair.
<table>
<thead>
<tr>
<th>C</th>
<th><strong>BODY CAPACITY</strong></th>
<th>10</th>
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</tr>
<tr>
<td></td>
<td><strong>Chest</strong> - deep and wide, yet clean-cut, with well sprung foreribs, full in crops and at point of elbow.</td>
<td>4</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td><strong>Barrel</strong> - strongly supported, long, deep, and wide; depth and spring of rib tending to increase into a deep yet refined flank</td>
<td>6</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>
### MAMMARY SYSTEM

Strongly attached, elastic, well-balanced with adequate capacity, quality, ease of milking, and indicating heavy milk production over a long period of usefulness.

#### Udder Support -

- strong medial suspensory ligament that clearly defines the udder halves, contributes to desirable shape and capacity, and holds the entire udder snugly to the body and well above the hocks. Fore, rear, and lateral attachments must be strong and smooth.

#### Fore Udder -

- wide and full to the side and extending moderately forward without excess non-lactating tissue and indicating capacity, desirable shape, and productivity.

#### Rear Udder -

- capacious, high, wide, and arched into the escutcheon; uniformity wide and deep to the floor; moderately curved in side profile without protruding beyond the vulva.

#### Balanced, Symmetry & Quality -

- in side profile, one-third of the capacity visible in front of the leg, one-third under the leg, and one-third behind the leg; well-rounded with soft, pliable, and elastic texture that is well collapsed after milking, free of scar tissue, with halves evenly balanced.

#### Teats -

- uniform size and of medium length and diameter in proportion to capacity of udder, cylindrical in shape, pointed nearly straight down or slightly forward, and situated two-thirds of the distance from the medial suspensory ligament on the floor of each udder-half to the side, indicating ease of milking.
Udder Support – 13 points

- **Udder Support** - strong medial suspensory ligament that clearly defines the udder halves, contributes to desirable shape and capacity, and holds the entire udder snugly to the body and well above the hocks. Fore, rear, and lateral attachments must be strong and smooth.
Medial Suspensory Ligament
Fore Udder Attachment
Rear Udder Attachment
Fore Udder
Rear Udder
Balance & Symmetry
Teats
The Starting Point

- Business Planning
- Stock Selection
- Infrastructure
- Regulatory Issues
- Product Processing
- Marketing & Customer Relations
Breeding Animal Selection

1. Starting with Healthy Animals will result in

2. Less inputs:
   Vet Bills
   Feed
   Meds
   Hands-on Care,
   which will lead to

3. Maximum outputs:
   Better quality product
Marketing

- Packaging
- Placement
- Pricing
- Promotion
- People
- ...and two more
  - PERSISTANCE
  - PATIENCE
Marketing

- WHO will buy your products and WHY?
  - Answering this helps you decide
    - Where to sell your products
    - How to package your products
    - What messages to convey on labels and when communicating about your products

- What are the barriers & challenges?

- How will your products reach your customers?
On-Farm Marketing

**Pros**
- Customer Contact - creating community ties, customer loyalty
- Production rate is self-managed - no contracted production rate.
- Possible higher $ return
- Ability to educate end-user.
- Recall ability customer specific.
- Immediate feedback & response on product quality.
- Diverse customer base = increased income security.

**Cons**
- Constant & frequent traffic
- Always on “display”
- Advertising costs
- No-shows result in compromised product.
- Bio-security risks.
- On-site personnel necessary to fulfill sales.
- High-turnover in customer base...fickle customers.
The End!