Angora Goat Farming. Present and Future

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This presentation

• (Update on historical facts)
• (Distribution of Angoras from Turkey)
• Angora goat production issues
• Mohair market outlook
Early domestic goats and fiber spinning

Earliest domestic goat remains.
Found in Ganj Dareh, Zagroz Mountains.
Dated 10000 years ago

Earliest image of spinning a yarn.
Found in Shushiana, Elam.
Dated 8000 years ago
Bezoar Ibex
*Capra aegagrus*
*wild*

Angora
*Capra aegagrus hircus*

Markhor
*Capra falconeri*
*wild*

Capra aegagrus
*ancyrensis*
*domestic*
Earliest Angora goats evidence?

Sumerian clay tablets with cuneiform text referring to production and sale of goat hair. Found in Umma, Iraq. Dated 4100 years ago.

According to the Bible Moses said in “Exodus” of Jews from Egypt: “Make curtains of goat hair for the tent over the tabernacle—eleven altogether.” “And all the women whose hearts stirred with wisdom spun yarn of goats’ hair.” Dated 3400 years ago.
Angoras reach Turkey
(According to Ottoman tradition)

- Suleyman Shah (leader of Turkic Kayi tribe) fled with his goats from Mongols.
- But drowns in the Euphrates (1227).
- Son Ertugrul reaches Konya (today Turkey).
- Sultan Kayqubad I assigns him pasture land in the Angora-Kayseri region.
Europeans get to know Angoras

Pierre Belon (1517-1564)  
Joseph Pitton de Tournefort (1656-1708)
Angora goats and mohair garments reach European royal courts

Charles V
Holy Roman Emperor
(reign 1519-1556)

Suleiman the Magnificent
Sultan of the Ottoman Empire
Caliph of Islam
(reign 1520-1566)

Sets an export ban of Angora goats and raw mohair to protect the mohair industry of Ankara
Anecdote:
In 1838 John Henderson buys 12 males and one female goat for his farm in South Africa.

Once in Port Elizabeth it is discovered that all males had been sterilized but fortunately the only female had delivered a male kid during the long sailing journey.

 Worldwide distribution of Angoras starts

300 years later the export ban was lifted

Mahmud II
Sultan of the Ottoman Empire
Caliph of Islam
(reign 1808-1839)
Angora dissemination routes from Turkey

Initial routes

Secondary routes
Angora in the Karoo, South Africa
705,000 shorn
2,400 ton mohair (51%)
Angora in Lesotho
800 ton mohair (16%)
Angora in Patagonia, Argentina
417,000 shorn
600 ton mohair (12%)
Angora in Texas, USA
141 000 shorn
363 ton mohair (7%)
Angora in Turkey
160,000 shorn
260 ton mohair (5%)
Angora in other countries
400 ton mohair (8%)
Changes in world mohair production

- **USA**: end of subsidies
- **SA**: end of apartheid
- **Turkey**: low prices, other use of rangeland

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- **SA**: end of apartheid
- **Argentina**
- **Lesotho**

Mohair production (ton)

Angora goat production issues

Compared to other goat breeds Angoras have:
- very little surplus milk production
- lower body weight
- lower growth rate
- lower reproduction rate (kids weaned / doe mated)
  - low fertility – prolificacy
  - high abortion rate
  - high kid mortality

Inability to cope with stress:
such as cold, wet and windy weather
Strategies to increase reproduction in Angoras

• More intensive management
  ✓ Protection from cold
  ✓ Strategic feeding
  ✓ Veterinary assistance

• Genetic improvement through crossbreeding
  ✓ Introducing genes from locally adapted breeds
  ✓ Introducing genes from exotic high reproducing breeds

• Genetic improvement through selection
  ✓ Higher body weight ($h^2 = 0.3$)
  ✓ Higher kid survival - maternal ability ($h^2 < 0.1$)
  ✓ Selection for fitness genes?
Fitness gene?

- Low fitness is related to insufficient cortisol production
- Cortisol production is related to enzyme CPY17
- Two CPY17 genes with 3 genotypes: He - Hu - Ho

<table>
<thead>
<tr>
<th>Genotypes</th>
<th>He</th>
<th>Hu</th>
<th>Ho</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotype freq. (%)</td>
<td>36.7</td>
<td>51.5</td>
<td>11.8</td>
</tr>
<tr>
<td>Poor reproducers (%)</td>
<td>42.0</td>
<td>35.0</td>
<td>62.5</td>
</tr>
<tr>
<td>Kids born /year</td>
<td>1.07</td>
<td>1.06</td>
<td>1.03</td>
</tr>
<tr>
<td>Kids weaned /year</td>
<td>0.93</td>
<td>0.90</td>
<td>0.89</td>
</tr>
<tr>
<td>Adult body weight (kg)</td>
<td>40.1a</td>
<td>40.9b</td>
<td>39.8a</td>
</tr>
<tr>
<td>Adult winter FW (kg)</td>
<td>1.35a</td>
<td>1.27b</td>
<td>1.24b</td>
</tr>
<tr>
<td>Adult winter FD (mic)</td>
<td>32.2a</td>
<td>32.7</td>
<td>33.0b</td>
</tr>
</tbody>
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Source: Swart (2013); Snyman et al. (2017)
Replace Angora goats with meat goats?

Will depend heavily on:
- mohair /meat price relation
- reproduction difference
- mohair fleece weight

<table>
<thead>
<tr>
<th></th>
<th>Angora goat</th>
<th>Meat goat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grazing equivalence</td>
<td>100</td>
<td>88</td>
</tr>
<tr>
<td>Kid weight, kg</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Kid meat price, $/kg</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mohair price$/kg</td>
<td>12</td>
<td></td>
</tr>
</tbody>
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Source: Mueller 2017, unpublished
Strategies to increase profit from mohair

• Increase fleece weight and mohair quality
  ✓ Improve management
  ✓ Selection => see companion ppt

• Add value at regional level
  ✓ Organize cooperative auctions /sales
  ✓ Support top-making industry

• Add value at local or farm level
  ✓ Support low scale yarn-making facilities (mini-mills)
  ✓ Support handicraft at farm or community level
Examples of adding value to raw mohair

- National top-making industry
- Local mini-mill industry
- Cooperative auction sale of classed mohair
Community yarn making
What makes mohair so valuable?

- Lustre
- Crease (wrinkle) resistance
- Durability
- Lightweight
- Dye-responsive
- Climate control
- Non-flammable

Mohair and Wool comparison with Fibre scale width.
Mohair price outlook

• Price trend depends on:
  – offer - demand
  – Fashion
  – Price of alternative fibers
  – Image issues (human and animal welfare, green production, etc.)
  – Promotion
Trend of mohair production and price in South Africa
Mohair price depends on fashion

Men’s suits => Italy => high end consumer
Hand knitting => USA => recreation trends
Industry => China => world economy

Mohair price depends also on price of optional fibers such as: Angora, cotton, cashmere, wool, synthetics
Mohair price depends on image issues

A 2013 rabbit cruelty video impacted negatively on Angora rabbit fibre sales, which was replaced with mohair.

The following brands and stores halted sales of Angora rabbit fiber products:

Zara, Massimo Dutti, M&S, Topshop, Primark, H&M, Marks and Spencer, Tommy Hilfiger, Calvin Klein, Whistles, Marco Polo, Boden, etc.
Mohair depends on promotion

- “Noble fiber”
- Quality control
- Sustainable production
- Human and animal welfare

South Africa

Argentina

Australia

New Zealand
Recent mohair price developments

- Italy strong in Kid mohair demand
- Big knitting yarn demand
- China overtakes Italy with strong demand of Adult mohair
- Brexit (6/2016)
- US poll (11/2016)
- Abolishment of subsidies in China
- Latest auction results 5 September 2017

Cruelty video

USD/kg mohair

20.4 USD/kg
16.8 USD/kg
15.7 USD/kg
14.8 USD/kg
Conclusions

• Future of Angora goat production depends heavily on mohair price.
• Demand (and price) of mohair as a luxury product depends on fashion, promotion and increasingly on environmental and animal-welfare considerations.
• Angora goats are less reproductive, slower growing and known to be more susceptible to cold, wet and windy weather conditions than most other goat breeds.
• For Angoras to remain competitive, farmers need to manage their goats to overcome the fitness problems and breed goats with high fleece weights.
Thank you very much for your attention

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