66th Reciprocal Meat Conference

Dana Hanson
RMC Chairman

Thanks to Our Major Sponsors

Thanks to Our Sponsors

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Tommy Wheeler
Ariel Winegar
Edward Yancey
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Fun Run Results

• 1st Danny Johns – 18:52
• 2nd Sean Roberts – 19:56
• 3rd Marty Freeman – 22:22

Thanks to Our Sponsors

Golf Tournament Results

Thanks to Our Sponsor

Ken McMillin
Foundation Trustee Chair
Producing game meat to meet international hygiene and food safety requirements in the bush

Louw Hoffman, Ph.D., Professor, Department of Animal Sciences, Stellenbosch University

16-19 June 2013
AMSA
Stellenbosch University

Friends visit

Beauty surrounds me

Land of wine, sport(s), and...

A bit of history

• One of the oldest established departments of Animal Sciences in South Africa
  • 90th anniversary in 2011

OUR VISION

Training of Animal Scientists of excellence in order to fulfill the research, extension and development needs of South Africa to improve the quality of life of all its inhabitants.

:: 92 years old
Producing game meat to meet international hygiene and food safety requirements in the bush

Louw Hoffman

Acknowledgments

• AMISA International Lectureship Award
• All my post graduate students who have helped me in the past, I say to you all: “Carpe Diem”

Outline

• Status of game meat industry today
• South Africa & Namibia
• Formal supply chain
• Process
• Informal supply chain
• Shortcomings
• The future...

Status of game farming

• South Africa
  • Has expanded but now more stable
  • Focus on high priced species
  • Buffalo, sable, colour variants
  • Exports to the EU

• Namibia
  • Stable
  • Very positive attitude
  • Exports into the EU (mainly springbok)
  • Exports into South Africa & SADC

Status of game farming industry today


<table>
<thead>
<tr>
<th>Area</th>
<th>Income</th>
<th>Profit</th>
<th>Fixed cost</th>
<th>Total cost</th>
<th>Variable cost</th>
<th>Income %</th>
<th>Profit %</th>
<th>Fixed cost %</th>
<th>Total cost %</th>
<th>Variable cost %</th>
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</thead>
<tbody>
<tr>
<td>Government protected areas</td>
<td>1 633 363</td>
<td>246</td>
<td>815</td>
<td>1 633 363</td>
<td>1 633 363</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Private wildlife ranches</td>
<td>20 330 000</td>
<td>12 284</td>
<td>9 046</td>
<td>20 330 000</td>
<td>20 330 000</td>
<td>0.61</td>
<td>0.61</td>
<td>0.61</td>
<td>0.61</td>
<td>0.61</td>
</tr>
<tr>
<td>Total under ‘intensity conservation management’</td>
<td>26 960 000</td>
<td>14 508</td>
<td>7 452</td>
<td>26 960 000</td>
<td>26 960 000</td>
<td>15.8</td>
<td>15.8</td>
<td>15.8</td>
<td>15.8</td>
<td>15.8</td>
</tr>
<tr>
<td>Total agricultural land</td>
<td>158 030 000</td>
<td>14 402</td>
<td>143 628</td>
<td>158 030 000</td>
<td>158 030 000</td>
<td>82.5</td>
<td>82.5</td>
<td>82.5</td>
<td>82.5</td>
<td>82.5</td>
</tr>
<tr>
<td>Total area of South Africa</td>
<td>152 346 100</td>
<td>14 402</td>
<td>143 628</td>
<td>152 346 100</td>
<td>152 346 100</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Beef</th>
<th>1 633 363</th>
<th>246</th>
<th>815</th>
<th>1 633 363</th>
<th>1 633 363</th>
<th>0.02</th>
<th>0.02</th>
<th>0.02</th>
<th>0.02</th>
<th>0.02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lamb</td>
<td>20 330 000</td>
<td>12 284</td>
<td>9 046</td>
<td>20 330 000</td>
<td>20 330 000</td>
<td>0.61</td>
<td>0.61</td>
<td>0.61</td>
<td>0.61</td>
<td>0.61</td>
</tr>
<tr>
<td>Pork</td>
<td>26 960 000</td>
<td>14 508</td>
<td>7 452</td>
<td>26 960 000</td>
<td>26 960 000</td>
<td>15.8</td>
<td>15.8</td>
<td>15.8</td>
<td>15.8</td>
<td>15.8</td>
</tr>
</tbody>
</table>

| Game Ranches | 158 030 000 | 14 402 | 143 628 | 158 030 000 | 158 030 000 | 82.5 | 82.5 | 82.5 | 82.5 | 82.5 |

| Freehold | 152 346 100 | 14 402 | 143 628 | 152 346 100 | 152 346 100 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Namibia: Numbers of harvestable species

<table>
<thead>
<tr>
<th>Species</th>
<th>South of veterinary cordon fence</th>
<th>North of veterinary cordon fence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red hartebeest</td>
<td>137 098</td>
<td>72 807</td>
</tr>
<tr>
<td>Zebra</td>
<td>381 511</td>
<td>381 171</td>
</tr>
<tr>
<td>Kudu</td>
<td>399 464</td>
<td>23 000</td>
</tr>
<tr>
<td>Gemsbok</td>
<td>749 090</td>
<td>5 500</td>
</tr>
<tr>
<td>Springbok</td>
<td>137 098</td>
<td>2 700</td>
</tr>
<tr>
<td>Total wildlife</td>
<td>1 370 986</td>
<td>77 907</td>
</tr>
<tr>
<td>Total south</td>
<td>1 370 986</td>
<td>77 907</td>
</tr>
<tr>
<td>Total north</td>
<td>1 303 079</td>
<td>71 000</td>
</tr>
<tr>
<td>Total south</td>
<td>1 370 986</td>
<td>77 907</td>
</tr>
<tr>
<td>Total north</td>
<td>1 303 079</td>
<td>71 000</td>
</tr>
</tbody>
</table>

Where is South Africa’s data?
Consumers expectations of game meat

- Most probably a tourist
- High level of education
- Successful business man
- Willing to try new things
- "Africa experience"

Perception of Game meat
- Harvested in an ethically manner
- Harvested sustainably & eco-friendly
- Perception of a low carbon footprint

But expects:
- Harvested and processed – first world technology
- Meat safe
- Wholesome
- Contains no residues
- Nutritious

Formal supply chain

- Both South Africa & Namibia well defined
- Fixed regulations
- Game farms registered
- Harvesting teams registered
- SOP
- Designated authority (functional)
- Species suitable for harvesting

Legislation …

Extensive regulations
- Export of meat, including meat safety
- Packaging regulations
- Hygiene inspection regulations
- Harvesting methods, etc
- Summed up: South African Standard for the Export of Game Meat (National Department of Agriculture, 2001)

Process of harvesting

Game species requirements
- Terrain
- Harvesting procedures ...
- Field abattoir
- Formal meat breaking plant
- Final product

Harvesting of game

- Humanity
- Economy
- Efficiency
- Selectivity of correct ages & sexes
- Low wounding percentages
- Minimal damage to meat
- Low disturbance & scattering
- Ability to bleed carcasses
- Minimal wounding percentages
- No association with humans

Other Requirements
- Numbers – population dynamics
- Reproductive efficiency
- Habitat
- Suitability to night cropping
- Kudu / springbok / impala
- Yield
- Consistent
- Quality
Commercial harvesting

- 3 major game meat exporters in South Africa
- Also export ostrich
- 3 major game meat exporters in Namibia
- Very well established export procedures
- Farms registered
- Culling teams registered
- HACCP

- Price (dressed carcass):
  - US$2.3/kg Springbok
  - US$2.9/kg other

Consumer expects ethically acceptable harvesting procedures

Terrain determines harvesting procedure

- Open veld
  - Night
- Mountain
  - Day
- Helicopter
- Bush
  - Night
  - Boma

Karoo / grassveld

- Day shooting from a vehicle?
  - Distance
  - Firing rate?
  - Meat quality
- Helicopter (day)?
  - Expensive
  - Meat quality
- Night shooting?
  - Efficient
  - Meat quality maintained
  - Meat depot required
- Lights
- Warm water
- Some work being published on day and night cropping

How does it work?

- Game harvesting team
  - An approved vehicle, methods, etc.

Game depot

- Approved specifications

Game depot

- Approved specifications
Game depot
- Health inspection

Moving to breaking plant
- Transported to the deboning facility
- Normal legislation applicable

Game depot
Carcasses sealed in cold truck

Marketing of game
- Exported
- Up market
- Healthy

Cropping of game
Mountainous terrain
- Difficult to access
- Helicopter
  - Expensive
  - Meat quality

Game processing
- Exported
- Up market
- Healthy
Damage to carcasses

- Larger species
  - From vehicle if terrain allows
  - Number per time unit important

Bushveld boma

- How does it work?
  - <07h00: Helicopter chases game into the Boma: 10-30 min
  - Game kept
    - Overnight
    - 30 min
  - Boma full: start culling immediately

Bushveld

- Drive at night with spotlight
- Game animal blinded
  - Shot
- Bush too dense
  - Only animals along path / road
  - Slow rate of off-take
  - Boma

Bushveld

- Carcasses transported to veld depot
Bushveld
- Carcasses are degutted and inspected

Bushveld
- Field depot fully compliant with regulations

Bushveld
- Carcasses loaded into cool trucks

Informal Supply chain
- Hunter – age old tradition

Informal Supply chain
- Hunter
  - Local – 1 000 000 animal per season
  - International – trophy hunter

Informal Supply chain
- Problems
  - Bullet placement
  - No health inspection
  - No inspection of facilities
  - Research being conducted
Informal Supply chain

- Products
  - Mainly own consumption
  - Traditional products
    - Biltong

Shortcomings

- Insufficient data on animal numbers
- Distances from processing plants
- Diseases
- Image –
  - Organic but
  - Farming activities

Supplement feeds fed to free roaming wild and semi-extensive farmed game

<table>
<thead>
<tr>
<th>Type of supplement feed</th>
<th>Feeds fed to free roaming wild game (n=115)</th>
<th>Feeds fed to semi-extensive farmed game (n=44)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licks (Mineral blocks)</td>
<td>30 (83.6%)</td>
<td>19 (79.2%)</td>
</tr>
<tr>
<td>Natural feeds e.g. Lucerne - grass</td>
<td>15 (50.0%)</td>
<td>23 (20.9%)</td>
</tr>
<tr>
<td>Compound manufactured - commercial feed</td>
<td>23 (20.9%)</td>
<td>11 (25.0%)</td>
</tr>
<tr>
<td>Own mix feeds</td>
<td>12 (10.3%)</td>
<td>8 (7.2%)</td>
</tr>
</tbody>
</table>

The future …

- Potential markets
  - Expanding local consumption
  - Developing markets in Africa and Far East
- Value adding
- Threats
  - Bush meat
  - NGO’s

Source: DeGeorges & Reilly, 2009

Common sight…

So we have fun!
Any questions?

Data from Bekker
DANKIE / THANK YOU / ENKOSI KAHKULU

Email: lchi@sun.ac.za

Thanks to Our Sponsor

Final Sessions

Hot Topics Session– Ballroom A

Global Meat Market - Auditorium