STATUS OF LIVESTOCK REPRODUCTION AND APPLICATION OF ADVANCED REPRODUCTIVE BIOTECHNOLOGIES IN VIETNAM

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1. Status of Ruminant breeding in Vietnam

2. Application of Reproductive biotechnology in Ruminant
Percentage (%) Ruminant livestock

- **Cow**
  - 55%
  - 2.58 million heads

- **Dairy cow**
  - 2%
  - 0.2 million heads

- **Buffalo**
  - 28%
  - 28% genuine HF
  - 71% crossbreed HF x laisid

- **Sheep and Goat**
  - 15%
  - 1.40 million heads

- **Total**
  - 5.18 million heads
THE 10 MOST DAIRY COW HEADS PROVINCES IN VIETNAM

1. Ho Chi Minh city
2. Nghe An Province
3. Son La Province
4. Hanoi city
5. Long An Province
6. Lam Dong Province
7. Soc Trang Province
8. Tuyen Quang Province
9. Vinh Phuc Province
10. Binh Duong Province
The average of milk production per lactation

Number of dairy cows and milk production over the year

Dinh Van Cai, 2009;
Compare the milk production of dairy cows/milk consumption
/ Population: Vietnam, France, Israel

Milk production: kg/lactation
Milk consumption: liter/person/year

<table>
<thead>
<tr>
<th>Country</th>
<th>Milk Production (kg/lactation)</th>
<th>Milk Consumption (liter/person/year)</th>
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</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>90 millions</td>
<td>65 millions</td>
</tr>
<tr>
<td>France</td>
<td>14.8</td>
<td>7000</td>
</tr>
<tr>
<td>Israel</td>
<td>11,667 Kg</td>
<td>175</td>
</tr>
<tr>
<td>Vietnam</td>
<td>7 millions</td>
<td>260</td>
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By Yearman Bogaard
Hoang Anh Gia Lai Group

116,000 heads

120,000 heads

600 hectares

3,400 hectares

• JSC Vietnam Kobe beef founded in 2009
• Imported 100 dairy cows (Australia)
• Kobe semen (US) for 40 $/dose
• More than 200 $ per kg (high profit)
• The company is investing about 2 million US to expand farm size
• Expected to increase to 900 heads (400 dairy and 500 Kobe beef) in the future.

AI AND ET

- AI was introduced in Vietnam during 1960’s
- AI was so rapidly developed in pigs
- But less used for cattle; around 20% of the population
• IVP of embryos has been studied in cattle and buffalo since 1994.
• The first calf from IVF and sexing embryos were born in 2002.
The average calving rate of more than 50% was obtained after ET of fresh IVF-sexing embryos into local Zebu-yellow recipients.
Embryo Cryopreservation

- Embryo cryopreservation was successful by rapid freezing and vitrification (Nguyen et al., 1984; 2000).
- This study is now applied to other species and oriented for the major direction such as conservation of biodiversity of native endangered cattle species such as Gaur and Kouprey.
Areas of Consideration

- Training of assisted reproductive technology (ART), organization of regional network for ART collaboration and support ART application and genetic resource exchange.
- Conservation and application of ART for endangered cattle, Gaur and Kouprey species.
- Setting up Open Nucleus Breeding Systems (ONBS) for cattle.
Some specific cow breeds in Vietnam

Genuine Holstein Friesian (HF)

Holstein-Zebu-Yellow cross (Ha-An)

Kobe cow in Vietnam
CONCLUSION

- The application of AI, IVP and ET are the important trends to meet the increasing in meat and milk consumption.
- Traditional reproductive techniques including estrus synchronization, semen freezing and AI had been successfully.
- Advanced techniques of IVP, embryo freezing and ET has successfully studied and are underway to apply for dairy cattle of high genetic quality and for conservation of native endangered cattle species.
THANK YOU SO MUCH!