RUMINANT PRODUCTION AND APPLICATION OF ASSISTED REPRODUCTIVE TECHNOLOGY IN MALAYSIA

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https://maps.google.com
http://www.getamap.net/maps/malaysia/
Agriculture

• 2010
  - Agricultural sector = 7.3% of the gross domestic product (GDP)
  - Livestock industry = 11.5% of the total agricultural output
  - 0.65% (1990) → 0.71% (2010)

Ruminant Population

Head of animal

- Cattle: 700,000
- Goats: 400,000
- Sheep: 100,000
- Buffalo: 50,000
Self-sufficiency 2013 (%)

- Beef: 30%
- Mutton: 10%
- Milk: 10%
Beef, Dairy, and Mutton Production

- Beef breeds for AI:
  - Brahman, Charolais, Droughtmaster, Nelore, Limousin, Boran, Bali, Belgian Blue, Kedah-Kelantan (local indigenous breed), and Angus

http://tropical-rancher.blogspot.com/
• Dairy breeds:
  - Holstein, Sahiwal, Girolando, Mafriwal (Malaysian Friesian Sahiwal), and Jersey

• Goat breeds: Boer, Jamnapari, Saanen, Alpine, Katjang (local indigenous breed), and Feral


• Sheep breeds: Dopper, Siamese Long Tail, Barbados Black Belly, Santa Ines, Morada Nova, Secureña, Southdown, and Dorset
Challenges

• Development in dairy < beef
• High cost of developing pastures from virgin or secondary jungle
• Absence of proper land for grazing
• Lack of developed range areas
• Low involvement of the private sector in large scale commercial productions

Halal Hub

• Potential → international Halal food hub
• International marketing
• Promoting livestock products and industrial livestock-based inputs
• Halal standard = part of the local food trade specification
• Opportunity to cover the gamut of the consumer market → supply and include the non-Muslim community as well
Assisted Reproductive Technology

• Import of breeding stock and usage of AI since 1976 to improve genetics and increase cattle population\(^1\)
• The Breeding and Breeds Technology Section under the division of Livestock Technology Source Development, Ministry of Agriculture Malaysia\(^1\)
• Increase the genetic quality and standard of livestock in the country\(^1\)
• Breeding services
  - advice on breeding and breeds, AI, breeding soundness examination (BSE), fertility inspection of females, and pregnancy checks\(^2\)

\(^1\) Mohamed 2007
\(^2\) Breeding and Breeds Technology Section 2008
National Veterinary Institute of Biodiversity

• Institut Biodiversiti Veterinar Kebangsaan (IBVK) - 1990
• Main producer of semen in Malaysia
• Department of Veterinary Services
• Encourage the development of the livestock industry
• ↑ standard of livestock - high quality frozen semen
• Latest biotechnological applications, consultation to farms, offer breeding services, and conduct research
• Genetic material conservation of local livestock (Kedah-Kelantan cattle and Katjang goats)
AI in Cattle in Peninsular Malaysia (2000-2010)
• 2010
  - 19,016 (cattle) and 872 (goats) inseminations in Peninsular Malaysia
  - 5,474 choice calves and 620 kids
Conclusion

- ↑ trend in meat consumption - ruminant sector given priority for growth
- Local demands unable to be met
- Issues with introduction of suitable breeding stock, complications with their adaptations, and the prevention of disease
- Implementation of other assisted reproductive techniques (ET and IVF) - solve the growing demand for ruminant products
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Thank You