

# **Wagyu feeding technique for high quality beef production**

**Beef Cattle Symposium**

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**Belltree Australia PTY LTD  
Takao Suzuki**

# Farm Location

- Blue Mountains – 100km west of Sydney



# Belltree Australia Operation

- Fullblood Wagyu Breeding : 70 head
- Fullblood Wagyu Feeding : 80 head
- Angus F1 production : 40 head

# Work Experience

- Dairy farm in Japan 1997
- Japanese feedlot (7,500head) 1990 ~ 1991
- Australian feedlot (35,000head) 1991 ~ 2006
- Establish Belltree Australia PTY LTD in Blue mountains 2007 ~

# What is Wagyu?

- The word 'wagyu' is a Japanese-language '*wa-gyu*', which simply means 'Japanese produced beef cattle'. It does not describe any single breed.
- Japanese Black >90% of Wagyu trade in Japan



Japanese Black



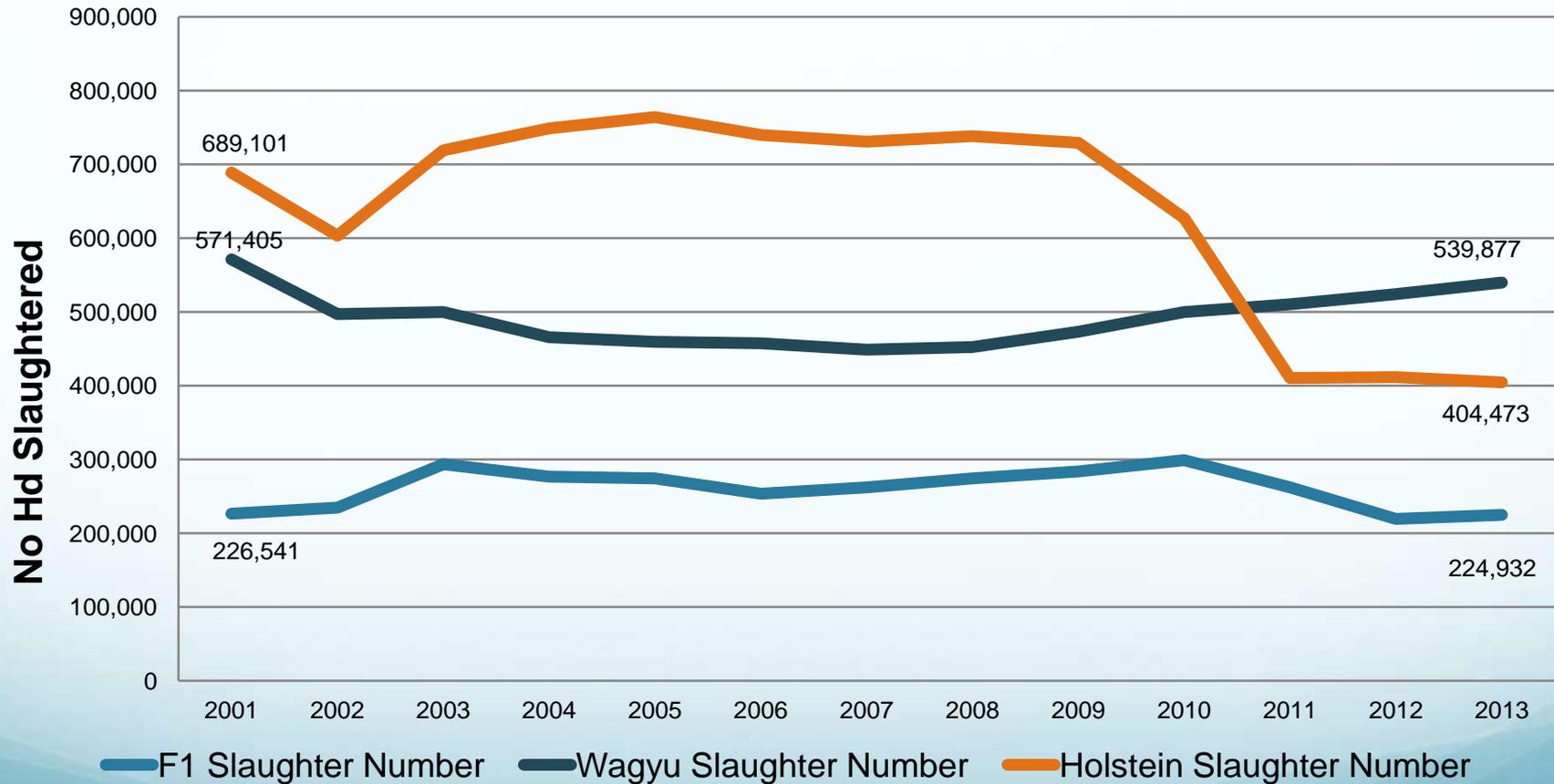
Japanese Brown



Japanese Shorthorn

# Beef Production Trend in Japan

## Beef Cattle Slaughter Number in Japan



# Beef Retail Price in Japan

JPY/100g

	<b>Wagyu</b>	<b>F1</b>	<b>Holstein</b>
<b>Chuck</b>	617	441	299
<b>Brisket</b>	616	464	313
<b>Sirloin</b>	1, 157	844	599
<b>Butts</b>	602	439	332

# Australian Wagyu

- Semen & embryos exported from Japan to USA in 1995
- Wagyu livestock and semen were imported from USA to AUS from 1996~
- “Wagyu” infused cattle feeding is popular through domestic/export market
- Wagyu is registered to Australian Wagyu Association database with DNA profile
- Mainly feeding at western style feedlot or grass fed

# Wagyu Beef

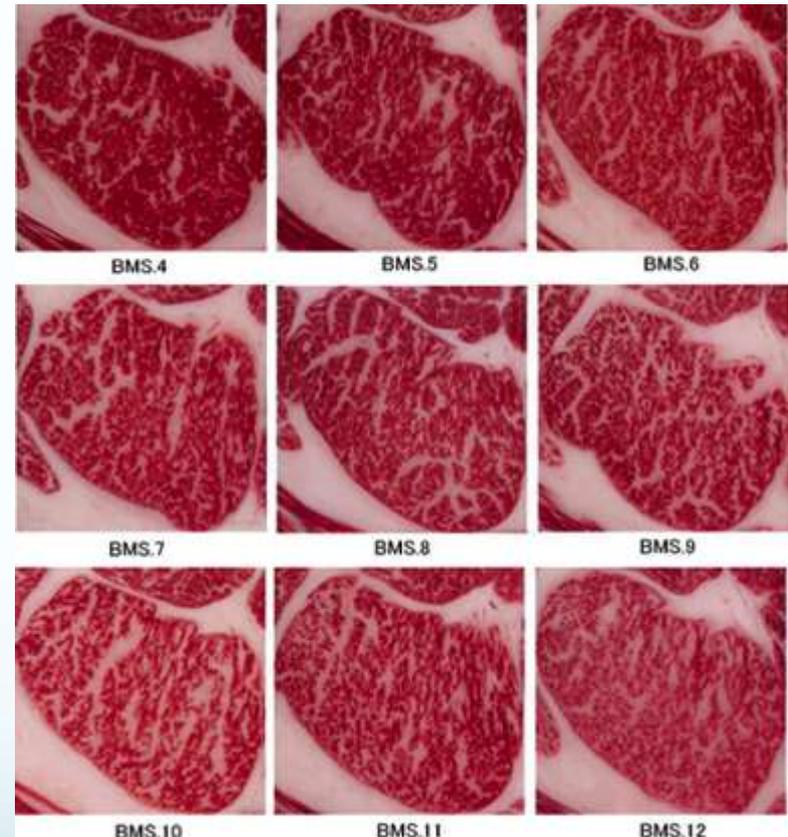


# Wagyu Beef



# Wagyu Beef Characteristics

- Marbling – Intramuscular Fat
- Fatty Acid Composition
  - High MUFA (Approx >53%)
  - High Oleic Acid (18:1)
  - Low Melting Point (<26°C)
- Texture – Firm
- Tender
- Unique Flavor



# Wagyu Production



# Japanese Style Feeding





# Japanese Style Feeding

- Total growth management to meet nutritional requirements of cattle at each stage
- Specially formulated ration
- Selected feed ingredients for fatty acid composition and flavor
- Feeding up to 30 month old
- Minimize cattle stress
- Managing small group

# Feed Ration

- **STARTER** - Pre/Post weaning
  - CP ~ 22%
  - TDN 78%
  - ADF 14%
  - Ad-rib Hay Feeding
  - Target Consumption 0.5 ~ 2kg
- **GROWER** - Post Weaning ~ 13 month Old
  - CP ~16%
  - TDN 76 ~ 78%
  - ADF 12%
  - High Roughage Contents(Pasture Hay, Alfalfa etc)
  - Target consumption 2 ~ 6kg (60% Ration, 40% Hay)
- **FINISHER** - 14 ~ 30 month old
  - CP ~12%
  - TDN 78%+
  - ADF 12.5%
  - Roughage with No Vitamin A (Straw)
  - High Grain Contents (70% +)
  - Target consumption 7 ~ 10kg (80% Ration, 20% Straw)

# Example of Wagyu Feed Ingredients

- **GRAIN**
  - Barley – High Crude Fibre
    - Steam Flaked – High Digestibility
  - Corn – High Energy, Good Fat
    - Steam Flaked – High Digestibility
    - Hominy Feed – High Crude Fiber



# Example of Waguyu Feed Ingredients

- **PROTEIN**
  - Soybean Meal – high in lysine
  - Canola Meal



# Example of Wagyu Feed Ingredients

- **BY-PRODUCTS**

- Wheat Bran – High Fiber
- OKARA (By-Products of Soy Milk) – High Crude Protein
- Nuts Husk – High Fiber
- Barley Husk – High Fiber



# Example of Wagyu Feed Ingredients

- **Mineral**
  - Salt – Balance Mineral
  - Lime Stone – Balance out P : Ca to 1 : 2 (prevention of Kidney Stone)

# Example of Wagyu Feed Ingredients

- **ROUGHAGE**
  - Grasses Hay (Ryegrass, Bermuda)
    - Soft fiber and easy to digest
  - Alfalfa Hay (Lucerne)
    - High CP, Rich in Vitamin A
  - Rice Straw/ Wheat Straw
    - High Fiber
    - No Vitamin A



# Example of Wagyu Feed Ration

	Starter	Grower	Finisher
Corn	25.00%	22.00%	35.00%
Barley	25.00%	22.00%	25.00%
Wheat Bran	10.00%	15.00%	19.00%
Soybean Meal	13.00%	11.00%	8.00%
Barley Straw	0.00%	7.00%	0.00%
Nuts Husk	0.00%	0.00%	3.00%
Alfalfa	15.00%	7.00%	0.00%
Alfalfa Meal	10.00%	10.00%	0.00%
Wheat Straw	0.00%	4.00%	4.00%
Wheat Husk	0.00%	0.00%	4.00%
Limestone	1.00%	1.00%	1.00%
Salt	1.00%	1.00%	1.00%

\*\*The rations are example only

# Feeding Program

- **0 – 3 month – Grazing/ Starter Ration**
  - Early weaning to ensure their growth and getting ready for grain feeding program



# Feeding Program

- **3 – 13 month – Weaners/ Grower Ration + Hay**
  - Ensure the roughage consumption to develop rumen size and muscle growth



# Feeding Program

- **14 – 30 month – Feeders/ Finisher Ration + Rice Straw**
  - Restrict Vitamin A consumption and maximize feed consumption until last minutes to develop marbling



# Why Japanese Style??

- **Managing animal in small group**
  - ✓ Minimize variation in feed consumption
  - ✓ Managing by age group to control ration changes
- **Managing animal in shed**
  - ✓ Minimize stress of environment effect
  - ✓ Minimize feed wastage
- **Japanese Style Feed Ration**
  - ✓ Maximize marbling ability
  - ✓ Maximize eating quality by control fatty acid composition (MUFA : BMW 57.1% VS Angus 49.6 )

# Key Point of Wagyu Feeding

- **Start at Young Age**
  - Early weaning and supplement nutrition is essential for Wagyu calf growth because milk production of Wagyu cow is limited.
  - Muscle development at young age will determine beef yield
- **Develop Rumen Condition with good quality Roughage**
  - Rumen conditioning at post weaning age (4 ~ 9month old) is essential to enhance high feed consumption for later stage
  - Roughage consumption will increase rumen sizes and maintaining rumen bacteria population
- **Maintain Feed Consumption**
  - Maintaining feed consumption as long as possible is key to increase marbling score. Irregular feed consumption will induce gastrointestinal problem and hence low meat quality.

