“Wagyu and Wagyu F1 Production using Assisted Reproduction Technologies"

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Why we need to produce Wagyu and Wagyu F1?

Annually import good quality beef 3,000 MB

- Thai Airway catering
- Other airlines catering
- 4-6 star hotels
- Japanese, Korean, Italian restaurants
- Steak houses
- Supermarkets
Centara Grand Hotel in Bangkok
Korat Wagyu Beef Cattle Co-Op

- Established 2012, 939 members

- Embryo Technology and Stem Cell Research Center is the key laboratory producing frozen semen, accredit by Department of Livestock Development

- >5,000 cows are AI with full blood Wagyu semen

- Korat city set up Korat Wagyu as food valley for reducing beef import and export good quality beef to ASEAN, China and Middle East countries
Farmers joined together, imported live Wagyu bull age 19 months from Australia, cost 700,000 Bahts
1 share = 1,000 Bahts get 10 doses frozen semen
Full blood Wagyu born from ET of imported frozen embryos from Australia
Bulls in Korat Wagyu production
999/1 (donor)  

999/2  

999/3  

999/4  

999/5  

999/6  

999/7  

999/8  

999 family  

Cloned cattle
Benz family

Benz (donor)

Benz 2

Benz 3

Benz 4

Cloned cattle
Cloned cattle

346 (donor)

346 family

346-3

346-4

346-5
Khao Lumpoon (donor)
“Doi Intanon”

Cloned calf
“Khao Mongkol”
DOB 21 มี.ค. 2550

Cloned cattle
Cloned cattle

DOB 1 ก.พ. 2555

เศวต กับแม่โคนมตัวรับ

Cloned cattle

DOB 1 ก.พ. 2555

Cloned cattle
Factor family

Factor (donor)

Cloned calves from fresh embryos
Cloned calves from vitrified embryos

Factor family

factor 2  factor 3  factor 5  factor 6

Cloned cattle
Male Cat (donor)

Cloned kittens

Cloned cat
Male Goat (donor)

1st cloned goat

2nd cloned goat

Cloned got
Male Gaur (donor)

Cloned gaur

iSCNT

Cloned gaur
Transvaginal ultrasound-guided for ovum pickup (OPU)
Oocytes

IVF
38.5°C, 5% CO₂

IVM
38.5°C, 5% CO₂

IVC
SOFaa 38.5°C, 5% O₂,
5% CO₂, 90% N₂

Co-cultured with oviduct cells
38.5°C, 5% CO₂

OPU-IVF-ET

OPU

Oocytes

23 h

10 h

SOF1

Freezing

ET

IVC

ET
Oocyte and embryo cryopreservation

**Slow freezing**

- medium
- medium + embryo
- medium

**Vitrification**

- Cryotop
- Drop
- Solid surface

Embryo technology
Embryo flushing and Embryo transfer

Embryos at day 6.5

MO-ET
Brahman calves born from MO-ET
Calves from Frozen-DT embryos
Assisted Reproduction Technologies in Wagyu cattle
SUKI born from IVM-IVF-ET
Fresh embryo

KIRIN born from IVM-IVF-ET
Vitrified embryo
HANA born from frozen Wagyu embryo
Imported from Australia

MOJI (DOB 25-3-2013)

SAPPORO (DOB 27-3-2013)

ONSEN (DOB 15-7-2013)

KYOTO (DOB 15-7-2013)

YUKI born from AI with sexed semen
(DOB 18-10-2013)

HANA with AIKO
born from AI
DOB 24-5-2015

SUGOI 1&2 (DOB 22-5-2013)

SCNT fresh
Preg. 5/18
(aborted 4)

OPU-IVF fresh
Preg. 2/4

MO-ET
Preg. 3/6
(aborted 4)

HANA with AIKO

YUKI born from AI with sexed semen
(DOB 18-10-2013)

SCNT fresh
Preg. 5/18
(aborted 4)

OPU-IVF fresh
Preg. 2/4

MO-ET
Preg. 3/6
(aborted 1)
Carcass prize after keep at 4\(^\circ\) C 2 weeks

BMS2: 200 Bahts/kg.

BMS3: 250 Bahts/kg.
Carcass prize after keep at $4^\circ$ C 2 weeks

BMS4: 300 Bahts/kg.

BMS5: 350 Bahts/kg.
Strip loin from F3 Wagyu
Thank you for your attention