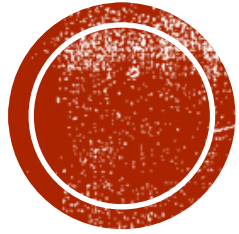




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AIZAKURA	HATSUHI	TAKAKUNI
CHIYOTAKE	YAMAFUJI	KITAKAZU
TETUFUKU	TOMOKANE	SEKIKURAHIME
WAGYU GENETICS 101: KNOW YOUR MATERNAL LINES.		
SUZUTANI	OKAHANA	SHIGEHIME
OKUTANI	CHISAHIME	KIKUHANA
RITINTANI	YURIKO	KENSEI
KANETANI	FUKUTOMI	HIKOKURA

THE IMPORTANCE OF MATERNAL LINES

1) RISK MANAGEMENT

2) FEMALES UNIQUE ABILITY TO TRANSMIT TO OFFSPRING

3) MARKETABILITY

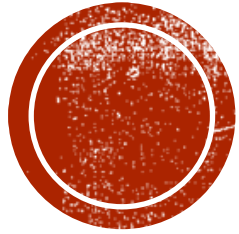
4) GENETIC MERIT

Presented by:
Loren Ruth
Synergy Wagyu



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STONYRUN JERSEYS CASE STUDY

1985-1995 Observe/track maternal lines of USA Jersey Dairy Cattle

1988-2000 Acquire specific Jersey maternal lines

1995-2005 Export embryos to Australia from acquired donors

Note: Genetics entering Australia without any performance indexing on dams or sires in some cases

2000-2015 Development of imported female lines, females begin to out perform contemporaries in Australia

2015-Present Introduction of Genomics
shown these maternal lines to be elite
in a 2nd country, 20 yrs later

Current Stonyrun-Aus Jersey Herd

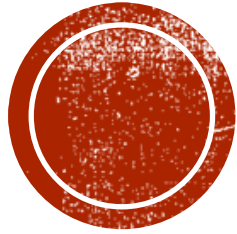
- 125 milking
- 100 young stock (replacement heifers)
- 6 of Top 100 Genomic females from 5 maternal lines





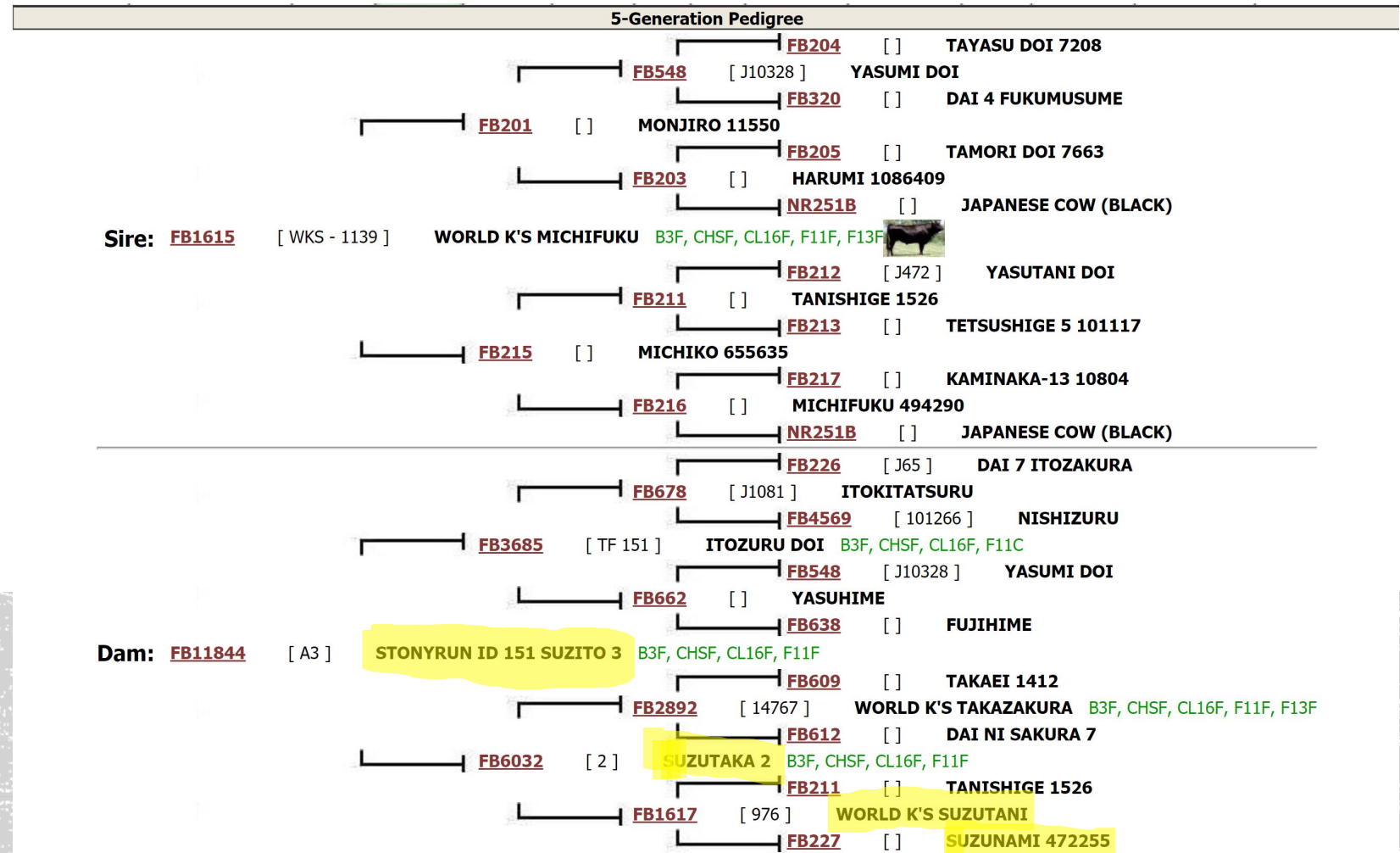
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WHAT IS A MATERNAL LINE?

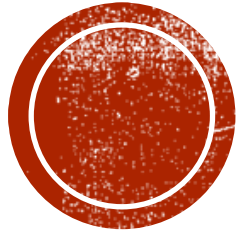
Synergy Mich Suzi 158D





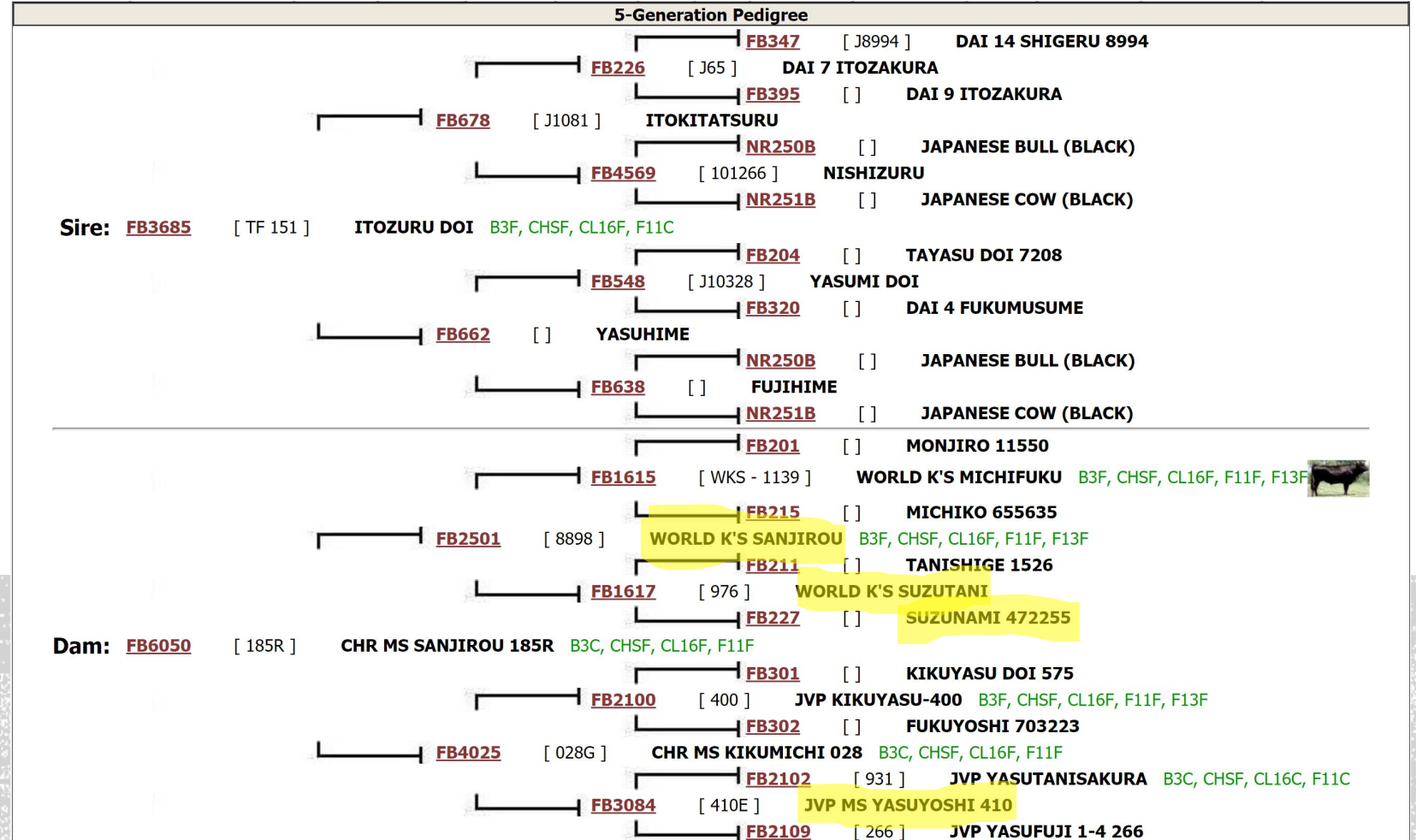
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NOT A SUZUTANI?

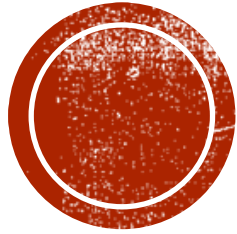
Stonyrun ID 151 Yasu 4





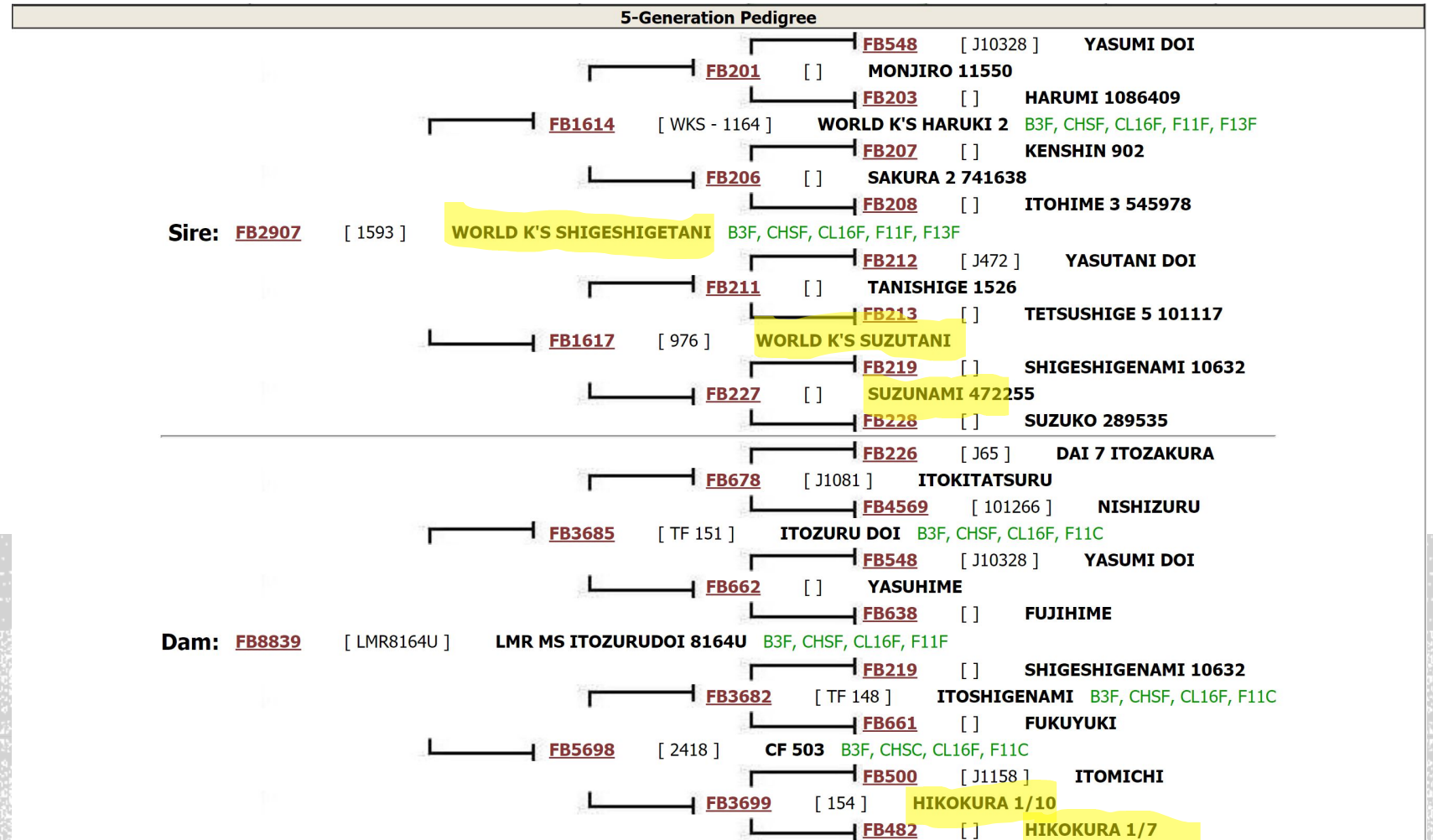
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NOT A SUZUTANI?

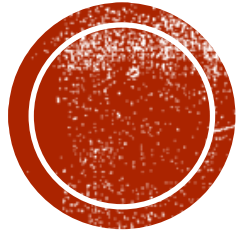
Stonyrun Shig Hikokura 15





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RISK MANAGEMENT

1) WE USE HIGH RELIABILITY SIRES

2) WHY NOT USE HIGH RELIABILITY FEMALES?

**3) INCREASED CONSISTENCY AND UNIFORMITY:
LESS FAILURE CARCASSES**

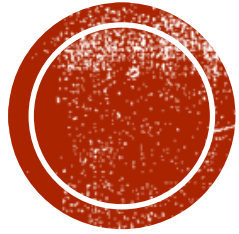
**4) HIGHER PERFORMANCE:
MARBLE SCORE, MARBLE FINENESS, RIB EYE AREA, 200D WT, CARCASS WT, ETC.**





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FEMALES ABILITY TO TRANSMIT

1) EPI GENETICS

- INHERITED AND TRIGGERED FROM THE MATERNAL ENVIRONMENT
- “TURNING ON OR OFF” GENES IN UTERO”
- HERITABLE PHENOTYPE CHANGES THAT **DO NOT** INVOLVE ALTERATIONS IN THE DNA

2) MITOCHONDRIAL DNA INHERITANCE

- MITOCHONDRIAL DNA INHERITANCE COMES FROM THE FEMALE ONLY
- MITOCHONDRIA POWER THE CELL

3) CYTOPLASMIC INHERITANCE

- RESIDUAL ADDITIVE GENETIC INHERITANCE EFFECTS UNACCOUNTED FOR BY STATISTICAL MODELS

4) OTHER UNKNOWN GENETIC FACTORS

Sources/Read more:

https://www.ajas.info/upload/pdf/17_243.pdf

<https://www.sciencedirect.com/science/article/pii/S0022030286807731>

<https://www.ncbi.nlm.nih.gov/pubmed/1597588>

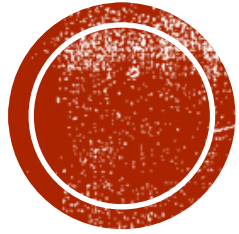
<https://epigeneticsandchromatin.biomedcentral.com/articles/10.1186/s13072-016-0081-5>

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GENETIC MERIT/VALUE

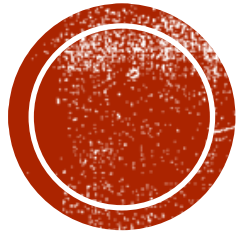
- 1) WHAT ARE YOUR GOALS?
- 2) PRODUCE HIGH QUALITY MEAT? PRODUCE ELITE SEEDSTOCK?
- 3) IF YOU ARE INVESTING IN AVERAGE GENETICS, SOMEONE ELSE WILL ALWAYS HAVE A BETTER PRODUCT. YOU WILL ALWAYS BE CASING THEM!
- 4) FEED COST IS THE SAME FOR AN ELITE ANIMAL AND BELOW AVERAGE ANIMAL IN MOST CASES.WHY NOT FEED AN ELITE ONE?

$$\text{Value} = \frac{\text{Percieved Benefit}}{\text{Cost}}$$



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THANK YOU!!

**1) AS A BREEDER/FEEDER IT IS YOUR
JOB/RESPONSIBILITY TO MAKE DECISIONS AND FIGURE
IT OUT.**

2) AFTER ALL, IT IS YOUR INVESTMENT!

