Minutes of the

World Wagyu Congress

Held at 9:00 am (Australian Eastern Standard Time), 8th May, 2015
at the Sweetlip Room, Mecure Capricorn Resort, Yeppoon, Queensland, Australia

Attendees:

American Wagyu Association:

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Non-participating Observers:

Name	**Country**
Peter Gilmour	Australia
Arturo Mateos	Mexico
Matthew Walker	Australia
James Robinson	Australia
Kyle Jurney	Texas, USA
Andrew Rado	Australia
Ronald Haake	Germany
Elise Fittler	Australia
Steve Fittler	Australia
Fred Rowe	Australia
Robert Estrin	USA

Helen Valdez	USA
Miho Kondo, Market Insights Manager, Central Marketing and Industry Insights, Meat & Livestock Australia	Australia
Pete Eshelman	USA
Time Eshelman	USA
Drea Pauw	South Africa
Jack Sugarman	Australia
Dave Midgley	South Africa
Sigrid Keweloh	Germany
John Levesque	Australia
Cathy Levesque	Australia
Jim Hayden	USA
Keith Hammond	Australia
Rob Cumine	Wales, UK
John Hammond	Australia
Jerry Chum	Singapore
Alastair reeves	New Zealand
Dom Bayard	Australia
Jo Bayard	Australia
Yu Nemoto	ALIC, Japan
Sally Lloyd	Australia
Doug Oliver	New Zealand
Ray Campbell	Australia
Greg Campbell	Australia
Michael Johnston	Australia
James Brady	Australia

Apologies:

Austrian Wagyu Association
Chilean Wagyu breeders
Japanese Wagyu Registry Association
Swiss Wagyu Association

No response to meeting invitation:

Argentina
Brazil
Cameroon
Canada
China
Indonesia
Panama
Philippines
Singapore

Uruguay
Vietnam

Proceedings:

1. Welcome

The Chairman welcomed all attendees and advised that the proposed purpose of the World Wagyu Congress is to "***Facilitate the development of the Wagyu breed internationally with goodwill and integrity"*** as specified in the proposed Terms of Reference (see Appendix 1), with the focus of the meeting being to:

- Unite the Wagyu industry from around the globe;
- Maximise the global market opportunity for international Wagyu producers; and
- Overcome obstacles and identify solutions to a global free market in Wagyu genetics.

2. Japanese Wagyu Registry Association

The meeting noted and appreciated the Japanese Wagyu Registry Association response to the invitation to attend the Congress meeting as translated by Miho Kondo, Meat & Livestock Australia and presented as follows:

> *First of all we would like to thank you (Australian Wagyu Association) for your consideration and respect to Japan, and to our association, as Japan is the origin of Wagyu breed.*
>
> *The association reviewed the participation of the congress, with our Association President leading the discussion.*
>
> *We are aware that Wagyu genetics have great influence in the global beef production. Also, we fully appreciate the importance and significance of the World Wagyu Congress where global Wagyu industry stakeholders are gathering in one place for information exchange.*
>
> *That said, we represent views of our members - Japanese Wagyu producers - and state that Wagyu genetics were shipped out from Japan, without consent nor willingness of Japanese producers. While there is little we can do concerning the current use of genetics that were previously exported, we have to inform you that Japan is extremely sensitive on (any possibilities or discussions on) further exports of new genetics.*
>
> *We understand that the World Wagyu Congress is not an occasion to discuss or take on activities that we have grave concerns about. However, we have to be very mindful about sensitivities among Japanese producers, and wish to inform you that we will not participate in the congress as the Japan Wagyu Registry Association.*
>
> *We are not able to meet with your expectation this time; however we would very much like to continue the relationship we built with your organisation and people in Australia. We would very much like you to visit Japan one day. As you know,*

Miyazaki has many Wagyu farms, and Kyoto (where Association is) is a traditional Wagyu consumption area.

3. Personal introductions from delegates of each country

The Chairman invited each association delegate represented to introduce themselves and their colleagues and to present the Wagyu situation in their country.

Steve Bennett, Spanish Wagyu Association advised:

- Wagyu is spreading throughout Spain with the main intention of increasing animal longevity on the beef industry

Klaus Möbius, President, German Wagyu Association presented the President of the Australian Wagyu Association with a gift to mark the occasion and thanked the Australian Wagyu Association for establishing the World Wagyu Congress. Regarding Germany he advised:

- 67 members
- 350 – 400 registered Fullblood females
- Conducts a Fullblood auction

Ralph Valdez, President, American Wagyu Association presented the President and CEO of the Australian Wagyu Association with gifts to mark the occasion and thanked the Australian Wagyu Association for its hospitality and for establishing the World Wagyu Congress. Regarding America he advised:

- Association established 1989
- Doubled membership and registrations in the past two years to 500 members and 3000 registrations per annum
- Using ABRI's International Livestock Registration System Version 2 (ILR2)
- Strong focus on genetic recessive conditions with 12,000 recessive test results
- In 2013 moved to SNP testing for parent verification
- The main goal is to work together for a global Wagyu genetic evaluation
- Very strong demand for Wagyu n the USA and can't produce enough bulls for the market.

Scott de Bruin, President, Australian Wagyu Association, thanked the German and American Wagyu Associations for their generous gifts. Regarding Australia he advised:

- 350 members with over 50 from overseas
- Very commercially focused
- Rapid industry uptake of Wagyu, particularly Crossbred Wagyu F1 50% with Angus, Holstein and Brahman the major base dam breeds
- Registering some 7000 Herdbook animals per annum, mostly females
- 169,000 joinings in 2014 with 20% Fullblood and 80% Crossbred

- High demand for high quality beef
- Wide range of Wagyu breeders, from seedstock through feeder suppliers to fully vertically integrated producers.

Jim Bloom (Jnr), British Wagyu Association advised regarding Britain:

- Association established 2014 with strong interest from over 40 Wagyu breeders
- 2500 total registrations
- Objective is to improve provenance, traceability and integrity of the breed and wish to create international standards for Wagyu.

Brian Angus, South African Wagyu Association advised regarding South Africa:

- Wagyu first bred in South Africa in 1999
- Association established 2014
- 1320 total registrations with 80% females, 30% by AI and 17% by ET
- Will move to BREEDPLAN for genetic analysis by the end of 2015
- Has 8 million cattle with 30% feedlot fed. Therefore Wagyu works well in South Africa.

Garry Lopes, New Zealand Wagyu Breeders Association advised regarding New Zealand:

- The Association was established but disbanded in 2012 and re-established again in 2014
- 10 members
- The Wagyu industry is disjointed in New Zealand. Firstlight is the most prominent marketer with most Wagyu beef supplied to the domestic market. The cattle are grass-fed with almost no grain feeding.
- There are two Wagyu organisations and are trying to merge into a single New Zealand Wagyu Breeders Association.

4. Terms of Reference for a World Wagyu Congress

The meeting considered the Terms of Reference proposed by the Australian Wagyu Association.

***Resolved**: To accept the Terms of Reference for a World Wagyu Congress as specified in Appendix 1 with all associations present agreeing to become full members of the World Wagyu Congress.*

5. Standardised registration and pedigree recording to facilitate movement of animal genetics between countries

The meeting considered standardised registration approaches proposed by the Australian Wagyu Association as presented.

5.1 Standardised registration requirements across countries

Objective: To standardise the registration requirements across countries and so facilitate the movement of animal genetics between countries.

It would appear that over 20 countries are registering Wagyu in their herdbooks. As the genetic performance of these individual animals becomes more accurately assessed international demand will see more cross-country trade of these genetics. This will require the transfer of animal registration details from one herdbook to another. Common rules for the registration of Wagyu animals would assist such transfer.

For example, initial imports of Wagyu to Australia came via the USA, however their Wagyu Associations do not have consistent rules for registration:

- Australia – requires all animals to be registered in its breeding animal registers to be DNA parent verified.
- USA – requires that all animals to be registered as Fullblood must be DNA parent verified, but Purebred and other grades do not require DNA parent verification.

This has led to difficulties in the registration of Purebreds from the USA into Australia.

Germany advised it only registers Fullblood Wagyu in its herdbook with all animals DNA parent verified. It is a closed herdbook and no polled animals may be registered.

America advised all Fullblood animals must be DNA parent verified for registration and Purebred Wagyu are also encouraged to DNA parent verify.

South Africa advised all Fullblood and Purebred animals plus Crossbred Wagyu F2 and F3 must be DNA parent verified for registration.

Resolved: *That the World Wagyu Congress recommend to its member Associations that:*

- *DNA parent verification be required as a prerequisite for at least Fullblood animal registration.*
- *Complying WWC member herdbooks to be recognised by other WWC members and Fullblood registrations from those members to be automatically accepted, providing they meet the receiving association's other rules.*

5.2 Animal registration from another country's Wagyu Association

Objective: To reduce the effort and cost of animal registration for animals already registered in other countries.

When a Wagyu Association is requested to register a Wagyu animal which is already registered in another country it is usually a requirement to obtain a registration certificate for the animal and record at least three generations of that animal's pedigree in the herdbook of the receiving country, with accompanying fees for each generation recorded. Hence international animal registration can be expensive.

A number of countries are using the Agricultural Business Research Institute's (ABRI) International Livestock Recording System Version 2 (ILR2) and web-based Internet Solutions (I4) service. ABRI is considering development of an ILR2 service to enable the extraction of pedigree information from an association's Internet Solutions (I4) database. If an animal is already registered in another country, ILR2 would then be able to identify that animal from the target database and extract that animal's details including its pedigree to a nominated number of generations and load that data into the receiving database. To prevent unauthorised data load the target association would be required to agree for such extracts, and an extract animal counter would prevent excessive data extract. As this would be developed for general use no development cost is anticipated.

Spain advised it has no registration system as yet.

Germany advised that in continental Europe the animal associations are not free, they may only be members of the Cattle Breeders Association. Therefore at this stage they cannot use BREEDPLAN or other ABRI systems, but may consider use of BREEDPLAN.

America advised they use the ABRI systems of ILR2, I4 and BREEDPLAN.

South Africa advised it is moving to BREEDPLAN by the end of 2015.

New Zealand advised it will be setting up use of BREEDPLAN.

Resolved: *That the World Wagyu Congress:*

- *Endorse the ABRI development of the ILR2/I4 pedigree data extract service.*
- *Encourage those World Wagyu Congress members using ILR2/I4 to allow ILR2/I4 data extract for overseas animal registration.*
- *Where such extract is used for overseas animal registration, World Wagyu Congress members to only charge for a single registration at their standard pricing, without a charge for background pedigree loading.*
- *Recommend that the originating country's registration identifier be recorded on the importing database.*

5.3 Maintaining Genetic Condition data consistency

Objective: To share Genetic Condition test results and so reduce the overall cost of testing.

The Wagyu breed tests and records the results for a number of recessive genetic conditions and the common conditions are described in Appendix 2. Many animals have already been tested so other countries could share the benefit of that testing and prevent the need to retest.

ABRI has developed a service for ILR2 which extracts all genetic condition test results and makes them available in a file. With agreement from Wagyu Associations using ILR2, these files can be run to load their results into the Association databases. The extracts can be run automatically, with each association required to load the update files when ready. Setup cost per Association is AUS$440.

America advised it has been very proactive in the use of genetic recessive testing with some 20,000 tests recorded and would work with Australia to provide those test results to other Wagyu associations. In 2013 they moved to SNP for parent verification and can now do all genetic recessive testing and parent verification on the same 24K SNP test.

Resolved: *That the World Wagyu Congress:*

- *Encourage World Wagyu Congress members using ILR2 to extract genetic condition test results and make them available at no charge to all other mutually agreeing World Wagyu Congress member associations using ILR2.*
- *Recommend that ILR2 record the genetic condition test sample identifier from the originating country in the importing country's database.*

6. Global Wagyu genetic analysis

The meeting considered the concept of global Wagyu genetic analysis provided by the Australian Wagyu Association as presented.

Objective: To compare Wagyu animal genetics across the world and so identify leading animals in every country which may add value to member breeding programs.

Best Linear Unbiased Projection (BLUP) has been used for genetic analysis in many biological species since the 1960's. BREEDPLAN provides BLUP genetic analysis for beef cattle and is generally regarded as the best of its type internationally. BREEDPLAN uses the world's most advanced genetic evaluation system (ie. an "animal model" which incorporates multi-trait analysis procedures) to produce Estimated Breeding Values (EBVs) of recorded cattle for a range of traits (e.g. birth, weight, carcase and fertility). In North American countries, BREEDPLAN produces Estimated Progeny Differences (EPDs) to conform to the local reporting conventions.

BREEDPLAN was developed by the Animal Genetics & Breeding Unit (AGBU) and is commercially delivered by ABRI. It is the national beef recording scheme in Australia, New

Zealand, Namibia, Thailand and the Philippines. Its use is increasing in the United States, Canada, United Kingdom, Hungary, South America and South Africa.

The Australian Wagyu Association has completed the first stage of a Wagyu Collaborative Genetics Research Project which has upgraded the Wagyu BREEDPLAN analysis to include AUS-MEAT and Japanese Digital Imaging Camera carcase data into the carcase EBVs for: Carcase Weight, Eye Muscle Area, Marble Score and Marbling Fineness. The model also includes EBVs for fertility, maternal and growth traits. A Fullblood Terminal Index based on carcase weight and marble score has provided overall animal performance ranking.

A global Wagyu Genetic Analysis could be developed enabling registered and performance recorded Wagyu in different countries to be genetically analysed and ranked on a common base for all traits, enabling international comparison of Wagyu males and females.

Technical alternatives:
The technical alternatives for a global Wagyu Genetic Analysis needing further investigation include:

1. Each country to maintain its own pedigree and performance database along with an alias file of animals registered in other countries with different identifiers. Combine pedigree and performance databases on a monthly basis from all contributing countries and produce country report data matching country requirements.
2. Larger Wagyu Associations eg. Australia, America to provide facilities management based registration and performance data recording services to overseas associations. For example, Australia will provide services to the British Wagyu Breeders Association.
3. Establish a cloud-based central Global Wagyu Database into which each country registers its own animals under a common set of rules. A global analysis to be run monthly from that database and produce country report data matching country requirements.

Spain advised it is early in its use of Wagyu to preserve other breeds.

Germany advised it is interested in a global genetic analysis but will need to investigate if and how it could use BREEDPLAN, but is supportive of the concept.

America advised its support for a global genetic evaluation and wished to set timelines for its establishment.

South Africa advised it will implement BREEDPLAN by the end of 2015 and then will consider joining a global Wagyu genetic analysis.

New Zealand advised it will need to establish its own BREEDPLAN analysis before joining a global Wagyu genetic analysis.

Resolved: *To develop a global Wagyu genetic analysis based on BREEDPLAN in a staged approach:*

- *Initially develop a joint analysis between Australia and America with the timeframe:*
    - *Within 6 months set the American Wagyu Association database to include the same carcase fields as in the Australian Wagyu Association database*
    - *Within 12 months combine the Australian and American databases for a joint analysis.*

7. Technical Committee

The meeting considered the establishment of a Congress Technical Committee as proposed by the Australian Wagyu Association as presented.

Objective: To establish a World Wagyu Congress Technical Committee to actively pursue technical matters considered important to member country Associations.

To achieve technical objectives across countries a working group is needed to advance their delivery between World Wagyu Congress meetings.

Resolved: *To establish a World Wagyu Congress Technical Committee as follows:*

- *Responsibility to pursue technical matters assigned to it by the World Wagyu Congress*
- *Each member country to appoint one person to the Technical Committee with the initially nominated appointments being:*
    - *Australia – Graham Truscott*
    - *USA – Michael Beattie*
- *The Technical Committee to have the power to co-opt additional members*
- *Technical Committee Terms of Reference to be established*
- *The first meeting to be held via Skype within 6 months.*

8. Use of the Wagyu breed name internationally

The meeting conducted open discussion regarding the use of the Wagyu name internationally.

America advised the USDA recognises as an F1 the cross of Fullblood or Purebred with another breed. The Association also recognises the importance of polled genetics. Therefore it would prefer the F1 definition to allow for a Purebred sire, resulting in the F1 being 46.5% Wagyu breed content. The name “Kobe Beef “ is discouraged as that refers to the Kobe Prefecture in Japan. The terms Japanese Brown or Japanese Red should also be used.

Germany advised F1 is regarded as 50% Wagyu breed content in Germany. Their members are advised not to use the term “Kobe” to promote Wagyu.

Britain advised F1 is regarded as 50% Wagyu breed content in Britain, so if an animal is over 50% it is marketed as 50% Wagyu. Britain supports development of a common set of international Wagyu breed standards.

South Africa advised that to qualify as Wagyu in South Africa an animal must be sired by a registered Fullblood Wagyu.

New Zealand advised that F1 has been marketed as Wagyu in New Zealand for a long time. They would like to see crossbred Wagyu marketed as such.

Australia advised it regards breed description as important, with only 100% Fullblood Wagyu breed (whose forebears originate from Japan) content as actually being Wagyu. The simplest approach is to have only two levels: Fullblood and Crossbred. Country of origin is also important e.g. Japanese Wagyu, Australian Wagyu.

Miho Kondo, Meat & Livestock Australia sought leave to speak as an observer and advised MAFF is tightening registration in Japan and is gearing up for export marketing. Japan is closely monitoring the outcomes of this World Wagyu Congress and Conference. Therefore the Congress needs to be careful as Japan may use non-Japanese definitions to strengthen their marketing and their claims for Japan to be the only authentic Wagyu, that are raised and fed under their standards.

Peter Eshelman, American observer, also advised that Wagyu has a higher standard than any other breed, so should disclose if an animal or its products are Fullblood, Purebred, F3, F2 or F1.

Motion: To accept the Wagyu Breed Content Classification definitions developed by Australia as follows:

Wagyu Breed Content Classification	Definition
Wagyu Fullblood 100%	The offspring of a Wagyu Fullblood sire and a Wagyu Fullblood dam whose forebears originate from Japan and whose pedigree shows no evidence of any crossbreeding.
Purebred Wagyu F4 93+%	Has greater than 93% Wagyu genetic content. For example, the result of at least four generations of crossbreeding using a Wagyu Fullblood sire and a Crossbred Wagyu F3 dam.
Crossbred Wagyu F3 87+%	Has greater than 87% Wagyu genetic content. For example is the result of at least three generations of crossbreeding, using a Wagyu Fullblood sire and a Crossbred Wagyu F2 dam.
Crossbred Wagyu F2 75%	Has 75% or higher Wagyu genetic content. For example is the result of at least two generations of crossbreeding, using a Wagyu Fullblood sire and a Crossbred Wagyu F1 dam.
Crossbred Wagyu F1 50%	Has 50% or higher Wagyu genetic content. For example the first generation of crossbreeding a Wagyu Fullblood sire and the dam of another breed.

MOVED: Ralf Valdez, SECONDED: Jim Bloom (Jnr) CARRIED

9. Next World Wagyu Conference and World Wagyu Congress meeting

The meeting considered the conduct of future meetings.

***Resolved**: To conduct future World Wagyu Conferences as follows:*

- *World Wagyu Congress meeting to immediately precede the conference*
- *World Wagyu Conference to be held every 4 years*
- *The bidding process is to involve countries nominating to host the World Wagyu Conference and Congress and the Congress to vote to select the winning bid*
- *The American Wagyu Association to conduct the next World Wagyu Conference and Congress meeting in 2019.*

10. Other business

Cloning

The meeting considered the concept of cloning in the Wagyu breed and the registration of cloned animals.

***Resolved**: That the Technical Committee consider the matter of cloning and the registration of cloned animals.*

Structural assessment of donor females for international sale

The meeting considered that it would be useful for donor females required for production of embryos for export to undergo independent structural assessment prior to embryo export.

Spirit of co-operation

The meeting recognised that there was a high spirit of co-operation between member country associations and hoped this would continue into the future of the organisation.

The meeting closed at 12:10 pm

Appendix 1

World Wagyu Congress

Terms of Reference

Constitution

The World Wagyu Congress has been established by resolution of the following Wagyu associations:

- American Wagyu Association
- Australian Wagyu Association
- British Wagyu Breeders Association:
- German Wagyu Association:
- New Zealand Wagyu Breeders Association
- South African Wagyu Association
- Spanish Wagyu Association.

Membership

Membership of the World Wagyu Congress is voluntary. Categories of membership are:

Full Member: The association formed to represent the Wagyu breed in a country. The Member association may be represented at a World Wagyu Congress meeting by up to two (2) delegates. Only Full Member delegates may vote on resolutions of the World Wagyu Congress. Full Members will pay a membership subscription of AUS$200 per annum to assist in maintaining the Secretariat services.

Associate Member: Wagyu breeders from a country where an association has not yet been established. Associate Members may attend meetings of the World Wagyu Congress but shall have no voting rights.

Chairman

The Chairman is to be appointed by the Member country association which will host the next World Wagyu Congress meeting or a major interim meeting in a host country eg. a World Wagyu Technical meeting.

Secretariat

The Secretariat is to be provided by the Australian Wagyu Association. The role of the Secretariat is to:

- Maintain the record of membership.
- Invite agenda items for the next World Wagyu Congress meeting from among the Members, set the agenda and record and distribute the minutes.
- Manage and report on the finances of the World Wagyu Congress.

Observers

Other interested parties may attend the meetings of the World Wagyu Congress as observers. They shall not take part in the meeting unless invited by the Chairman and shall have no voting rights.

Other attendees
Other specialists may be invited to attend meetings of the World Wagyu Congress, as required.

Quorum
A quorum will be the delegates of three Full Members.

Meetings
World Wagyu Congress meetings will be held not less than biennially (every two years). Every second World Wagyu Congress meeting will be held to coincide with the World Wagyu Conference which will be held every four (4) years. In addition, the Chairman is required to call a meeting of the World Wagyu Congress if requested to do so by any Full Member. The biennial meeting will be held in the host country. Interim meetings may be conducted by telephone or video conference.

Authority
The World Wagyu Congress is authorised to undertake any activities within its charter. The World Wagyu Congress can only make recommendations to its Members and has no authority to enforce those recommendations.

Reporting procedures
The Secretariat shall provide the minutes of the World Wagyu Congress meetings to the Chairman for approval then circulate the minutes of the meetings to all Full and Associate Members. The minutes of the World Wagyu Congress meeting are to be tabled and accepted at the next World Wagyu Congress meeting. The Secretariat is to maintain a list of resolutions and their status is to be reported at the next World Wagyu Congress meeting.

Objectives of the World Wagyu Congress
The purpose of the World Wagyu Congress is to:

Facilitate the development of the Wagyu breed internationally with goodwill and integrity.

In undertaking this purpose the World Wagyu Congress recognises that while Members may compete in the global marketplace, it will be beneficial to work together on matters of common interest and concern. In particular, the World Wagyu Congress has the following objectives:

Pedigree Integrity

1. To maintain the integrity of Wagyu animal pedigree information.

Genetic Improvement

2. To develop a common genetic benchmarking approach to assist with the identification and selection of superior Wagyu genetics.

Marketing Integrity

3. To protect and enhance the Wagyu image with the world beef industry and the public.
4. To encourage truth in labelling of Wagyu products.

Sharing of Information

5. To encourage the sharing of information which would be of mutual benefit to Members and to the Wagyu breed globally.

Appendix 2

Genetic Conditions in Wagyu Cattle

All breeds of cattle, in fact all mammals including humans, have undesirable genetic conditions. Fortunately, advances in molecular genetics have facilitated the development of DNA tests for their management. Breed Associations are at the forefront of development of strategies to manage undesirable genetic conditions and seedstock members are leading the industry with their uptake of this technology.

The more commonly known genetic conditions of Wagyu are as follows.

Spherocystosis (B3) - This is a disorder of the surface membrane of the erythrocyte (red blood cells). The protein from the B3 gene makes up the basic structure of the erythrocyte. Cattle that are homozygous (have two copies of the recessive allele) have pernicious anaemia (bleeding caused by the abnormal red blood cells). Death normally occurs within the first 7 days after birth. Some cases live to adulthood but there is a severe retardation in growth.

Chediak Higashi Syndrome (CHS) - CHS is a macrophage disorder (a white blood cell that has an important role in the immune response to disease). If cattle have a malfunctioning immune system, this makes them unable to resist bacterial challenge. Blood is slow to coagulate so often the first indicator is unusual umbilical cord haemorrhage at parturition (calving). Cattle with this syndrome often have an unusually pale coat colour.

Claudin 16 Deficiency (CL16) - CL16 (also known as RTD or Renal tubular dysplasia) is a gene disorder on chromosome 1 and causes kidney failure (chronic interstitial nephritis often with zonal fibrosis or excess of fibrous connective tissue). This disorder results in terminal kidney failure and the onset can occur any time from late adolescence. Cattle are unlikely to live more than 6 years.

Factor XI deficiency (F11) - F11 is a plasma protein that participates in the formation of blood clots. Factor XI deficiency is an autosomal disorder that is associated with mild bleeding in Wagyu. Affected animals show prolonged bleeding time and abnormal plasma coagulation after trauma or surgical procedures such as castration or dehorning. It is also possible that Carrier x Carrier matings have increased difficulty producing viable fertilized embryos or full-term pregnancies and are may be repeat (return to cycle)breeders. Note – this is generally a non-lethal recessive condition with affected animals being able to live and breed as normal.

Note – There are other recessive genetic conditions known to exist in Wagyu cattle (e.g. F13) however they have not been identified in the Australia Wagyu population.