The Global Export of Bovine Semen and Embryos from Australia:

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A Report commissioned by:

- Australian Registered Cattle Breeders Inc.
- Queensland Department of Agriculture, Forestry & Fisheries
- Trade & Investment Queensland
The Brief

- Review available data on world trade of beef and dairy genetic materials, including Australia.
- Conduct competitor analysis of major players.
- Recommend possible targets for Australian exporters.
- Examine the constraints to export of genetic materials from Australia.
- Make preliminary recommendations on ways to improve and simplify export.
- Overview of export processes from Australia.

Main Findings

- Australia is a very minor player in the global dairy and beef semen export market.
- It performs better in the export of embryos but sales have dropped in recent years.
- A major effort by all in the export chain will be required to improve the situation and capture a share of the global trade.
Basicall : We import our genetics

- Australia has little credibility as an ‘exporting’ country in genetic materials as it imports up to **fifteen times** as much dairy and beef semen as it exports and nearly **three times** as many embryos.

Global Semen Sales

- USA exported **$142,419,392** worth of bovine semen in 2012
- In the same year Canada, with half the cattle population of Australia, exported **$88,726,586**
- We cannot calculate the value of Australia’s exports in that year because that value is not reported but it is unlikely it passed **$1.5 million**.
Export Statistics

- Australian Bureau of Statistics (ABS) ???
- DAFF – OK but no values and manual

Why such underperformance?

Many reasons:
- relatively small national dairy herd
- Low use of AI in beef industry
- No significant local company with global vision
Major Global AI Companies

- ABS Global, a division of GENUS
- CRV One of the largest AI organisations in the world
- ALTA a Canadian global AI organisation
- CRI - Cooperative Resources International
- Semex Canada formed in 1973

Government Support

- In the USA and Canada, the two largest global exporting countries, there has been a strong history of Government funding and support to the trade especially in the form of overseas trade promotion and market development.
- Unlike our major competitors there has been virtually no Australian Government – either Federal or State- support for exporters or for export market development.
DAFF Inputs

- The lack of resourcing for the departments previously known as AQIS and Biosecurity Australia, now DAFF, has become a major issue.
- There are a number of veterinary protocols that require concentrated, targeted and specific input from qualified staff in order to become finalised but generally, the staff at DAFF are fully utilised in crisis management for live exports and genetic exports work gets postponed and seldom prioritised.
- DAFF’s documentation and inspection fees and efficiency in the export process has been generally criticised by respondents to this study.

Industry Inputs

- There is a lack of coordinated effort amongst breeders exporting dairy and beef genetics. They never meet together.
- Seedstock breeders are often members of bodies such as MLA and Dairy Australia but the levy monies collected by these organisations do not get used to promote exports of genetic materials.
- Embryo practitioners are not represented by any of the aforementioned organisations.
No single industry organisation

- There is a real gap without the existence of a single organisation that can align the export interests for semen and embryos for stud breeders, embryo transfer practitioners and AI companies.
- Everyone must understand the need for such an organisation and furthermore, be prepared to pay for it.

Beef Genetic Exports

- Mainly Boutique
- Individual Companies
- Many one-off sales
- Few have import agents
Who? How much?

- However, there is considerable doubt whether all sectors would be prepared to financially underwrite the overseas trade promotion that would be necessary in order to put Australian genetics at the forefront of a global market.

Export Model

- Canada’s exports of bovine genetics virtually stopped when BSE was identified in their industry and the GFC subsequently affected sales of dairy semen. Canada’s recovery from these threats provides a useful model that Australia could follow.

- However, it will require Government support and a single coordinating association like their Canadian Livestock Genetics Association (CLGA) for success.
South America

- South America should be a major target for exporters of beef semen and embryos.
- However competition from countries within South America is growing, Argentina in particular.
- Brazil, offers potential for tropical beef breed sales however attention to documented genetic merit of individual donors is important and price will be an issue with semen.

South America new targets

Post-FMD aspirants:-
- Colombia
- Paraguay: No export embryo protocol in place
- Argentina: Govt. Currency controls making exports to ARG almost impossible
Asia

- While Australia may be perceived as an ideal hub or entry point for dairy and beef genetics to enter Asia, we have seen little activity in that region relative to other countries’ exports.

- We must target Asia......

Leveraging on Live Exports of Breeding cattle

- Leveraging off that trade currently certified by ILRIC and Holstein Australia, is the **single most important strategy** recommended to boost Australia’s future beef and dairy semen and embryo sales.
Melbourne – The Hub

DAFF’s

“One - Stop – Shop” for genetic exports

The Future

A Total Genetics Exports approach
Critical first step is a National Meeting of all interested parties to map out a way forward.

Failure to move in that direction will lead to continuation of the trend downwards for semen exports and stagnation of embryo export sales and lost opportunities.

Initial thought: Brisbane October 2013
ARCBA Involvement in Qld BJD issue

Presentation to ARCBA
7 August 2013

Alex McDonald - ARCBA BJD Representative

Financial support for infected herds
July 2004 to October 2012

- After lobbying by ARCBA a significant Financial and Non Financial support program for beef herds affected by BJD funded from CCA controlled BJD Fund (from transaction levy)

- Non Financial is the availability of counsellors to assist owners of newly infected herds
Financial Support 2004-2012

- In addition to slaughter value

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Herds assisted by FN&F program

- 359 herds joined F & NF program since 2004
- 222 (62%) have had their trading status restored.

- Most claims below $15K
- Highest claim approx $250K
- Total claims paid approx $4.5mill
Source of funding

- Cattle Council controlled BJD fund had a balance of approx $4 mill in 2004 from a contribution of 7c/head from transaction levy
- Soon after it dropped to 4c/head or $450K/yr and has gradually run down due to funding of AHA, research projects and the F & NF program

- The BJD Fund had run down to $340K by June 2012
  Annual Commitments are
  - $420K for R & D (new tests and new vaccines)
  - $200K to Animal Health Australia to administer the National BJD Management Program
  - $700K for F&NF program including Counsellors (will rapidly decline)
$1.5 million was transferred from the Cattle Disease Contingency Fund to the BJD fund in 2012/13 with a further $1.5 million to be transferred in 2013/14

Cattle Disease Contingency Fund is a $20 million fund built up from approximately $10 million left over from the BTEC fund and $10 million from Transaction levies since 2002

F & NF support now

In October 2012 all additional support for stud herds was removed and funds available to each herd capped at $10,000 by Cattle Council

Financial counselling service retained at least till end 2013 (is it still needed)
Financial Support since Oct 2012

- Testing Costs
- Financial support in addition to slaughter value

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ARCBA Actions

11 Feb ; Letter to Minister McVeigh

- Support for letter from ABBA to McVeigh outlining request for financial support for affected herds
ARCBA Actions

7 March; Letter to Cattle Council

- Expressing disappointment with the lack of consultation with ARCBA as an Associate member of CCA in slashing of BJD Financial and non Financial program on Oct 2012

- Request that the cap of $10,000 on the F & NF package be removed and that additional funds be sought from Cattle Disease Contingency Fund.

ARCBA Actions

- 14 April; Meeting of ARCBA Executive with Justin Toohey, advisor to Cattle Council on Animal Health, Welfare & Biosecurity in Brisbane.

- ARCBA invited to nominate a representative to participate in CCA Animal Health, Welfare & Biosecurity Committee
ARCBA Actions

16 April Letter to Cattle Council requesting;

- Restoration of 7c contribution to BJD fund
- A review of the Standard Definitions, Rules and Guidelines with ARCBA input

ARCBA Actions

- 24 June; A McD attended BJD Update meeting in Brisbane with John Croaker and Bill Dunlop
- 27 June; Letter to Qld Minister McVeigh requesting him to honour his statement; “The Newman Government does not expect individual producers to bear the cost of eradication programs that ultimately benefit all in the cattle industry”
ARCBA/ABBA Actions

- **July 5;** A McD met with representatives of Brahman and Santa Gertrudis Societies in Rockhampton to plan a way forward

- **July 15;** Letter to Qld Minister McVeigh requesting the implementation of a "More Flexible" approach by QDAFF as stated by McVeigh at 24 June meeting

ARCBA/ABBA Actions

- **July 19;** Phone meeting between Agforce, ABBA/SGBA representatives and A McD after lobbying by John Croaker/ABBA
Outcomes

- Barriers between Agforce and ABBA/ARCBA reduced
- Croaker to articulate requests for a “More Flexible” approach to management of BJD by Qld DAFF
- McDonald to develop a possible pathway for the Rockley herd and possible research project involving the Rockley herd

ARCBA/ABBA has requested Agforce to put pressure on QDAFF for a “more flexible” approach

- Increase in maximum age for slaughter from 24 mths to 36mths for desexed animals released from Suspect herds
- Issue of clean PICs for part of properties to allow access to the Live Export market for quarantined herds (see WA)
- Questioned the logic of holding Suspect herds in quarantine for two years for
ARCBA/ABBA have requested Agforce to seek

- A transfer of a significant funds from the CDCF fund to the Qld Biosecurity Fund to provide meaningful financial support for Qld herds affected by the BJD issue until the Qld Biosecurity fund kicks in (late 2014)

Current situation

- Three possible options for funding from CDCF to assist Qld herds will be presented to Cattle Council meeting in late August

- Meeting has been organised between owners of Rockley Brahmans and QDAFF on 9 August to try to find a way forward.
BJD Update
ARCBA Meeting 7/8/2013

John Croaker, ABBA

• Q24 BJD incident declared in mid November 2012
• Rockley established in 1963
  • About 900 breeders
  • Selling about 200 bulls annually
• Decided to go public
• Trace forward point taken as 2005
  • Start of NLIS
• Initially 170 QLD herds quarantined
  • 36 stud
  • Many large commercial operators
• About 30 in other states including NT
• Biosecurity not prepared for scale of the exercise

• Ron Glanville appointed Industry Liaison Officer
  • Convened technical reference group
  • Established process for releasing herds
    • End of January 2013
  • HT-PCR test established at EMAI

• Trace forward animals cleared on negative histology & negative faecal HT-PCR
• Herd to be cleared with one clean test of susceptible animals 2 years from last dangerous contact
• Where not all bulls are located the situation becomes more complex
  • Up to 5 years for full clearance
• Different interpretation between QLD, WA & NT

ABBA Position
• We agreed in December to go along with Protected Area status until more data was available
• In January we changed our position due to;
  • The devastating impact of quarantines
  • No financial support
  • Concern the introduction was much earlier than 2005
• Bison strain typing indicates it most likely came from USA before 2005
Queensland Cattle Industry Biosecurity Fund announced in January 2013

“The Newman Government does not expect individual producers to bear the cost of eradication programs that ultimately benefit all in the cattle industry”

- Provided $2M grant
- $3M loan to be matched by industry through a voluntary levy as part of the new Biosecurity Fund
- Biosecurity Fund will begin collecting levies from July 1, 2014 at the earliest

- Currently the scheme has 2 parts
  - Direct Market Assistance
  - Supply Chain Pathways Assistance

- Paying sliding scale on Market Assistance
  - Animals under $2500 25%
  - Animals $2501-$3000 35%
  - Animals over $3000 50%
• Supply chain assistance pays up to 50% of additional operating costs with a cap of $50,000 per property in a year and a cap of $200,000 over 4 years
• The cap applies to both parts of the scheme
• The caps are necessary because of the limited amount of funds
• Additional funds would allow the caps to be lifted

**Finlay-Hill report released May 2013**

Made 45 recommendations including
• That QLD continue to pursue Protected Area status
• Recognised the inadequacies in the early stages
• Recommended increased response capacity
• Stronger sense of urgency
• Improved communication
Third BJD Industry Forum June 24
• Obvious AgForce and QDAFF were determined to pursue Protected Zone Status

Revised ABBA Position
• Agreed not to continue to push for Management Zone status
• Still have major concerns about level of financial support
• Seeking more flexible approach to quarantine
  • Pathways for de-sexed cattle
  • Access to export markets
  • Mortality allowance
• Pathway for Rockley

Present situation
As at 23/7/2013
QLD
• 39 properties that received trace forward cattle remain under quarantine
• 5 properties have returned at least 1 positive result including the index property
  • 2 infected
  • 2 suspect
WA
• 1 trace forward bull infected
• 5 properties in quarantine until 2018 undergoing herd testing
• All have a clean PIC on part of the property with access to live export markets
NT
• All herds cleared
Summary

- The reduced prevalence of infection from Rockley is good news
- Infection or suspected infection with BJD remains the biggest threat to destroying a stud cattle business
- Individual Producers/Studs should not have to bear the cost of eradication programs which ultimately benefit all of the cattle industry
- We need to continue to strive for better financial support for stud breeders
On Farm Biosecurity

Alex McDonald
Limousin Australia
Livestock Biosecurity Network

Joint initiative of;
• Cattle Council Australia,
• Sheepmeat Council of Australia
• Woolproducers Australia

Funding of $5mill over three years

Biosecurity Officer to be based in each state
What is on farm biosecurity?

On farm management system to;

• Prevent the introduction of infectious diseases
• Manage diseases already present on the farm

On farm biosecurity programs are going to become increasingly important as Departments of Agriculture pull back from administering regulated health schemes
*OJD is effectively deregulated in all states

* BJD is effectively deregulated in Victoria and Tas

• “Beef Only” status in Vic & Tas and being in the “Beef Protected Area” of NSW and SA are on farm biosecurity systems to minimise the spread of BJD

• Require accurate records of introduced stock over 5 years
BVDV

• Bovine Viral Diarrhea Virus (Pestivirus) is not regulated

• It is managed (or not managed) by On Farm Biosecurity
SECTION 2 – Johnes's Disease Beef Cattle (see explanatory notes for further information)

The cattle originate from the following BJD Zone/Area:
- Protected Zone
- Free Zone
- Beef Protected Area
- Management Area

The cattle originate from a herd with a status of:
- Infected
- Suspect
- Non-Assessed
- Check Tested
- Beef Only
- Tested to MAP Standard
- Tested 4yo
- MN1
- MN2
- MN3

Beef Protected Area beef cattle (non-assessed) eligible for the Protected Zone
Seedstock herds

- Have the capacity to spread disease widely
- Generally want to protect their customers
- Are very competitive so use their on farm biosecurity programs as a marketing tool

Some seedstock producers have very good on farm biosecurity programs with input from their veterinarian

Others have very poor biosecurity programs especially if they just sell bulls directly off farm
Good biosecurity program

• BJD MN3 so cattle free to all states
• Vaccinated twice with 7 in 1
• Vaccinated with Pestigard
• All bulls tested free as PI carriers
• Bulls vaccinated for vibriosis

Most multivendor sales and shows have “biosecurity” requirements

Generally limited to
• Minimum BJD status of “Beef Only”
• PI tested (not shedding pestivirus)
UK Examples of on farm biosecurity programs

CHeCS

- Herdcare
- SAC
- Hi Health
- NADIS

What is CHeCS?

- Cattle Health Certification Standards is the self-regulatory body for cattle health schemes in the UK and Ireland.
- Established by the cattle industry for the control and eradication of non-statutory diseases by a set of standards to which all licensed cattle health schemes must adhere.
is owned by

- **British Cattle Veterinary Association**
- National Cattle Association (Dairy)
- National Beef Association
- Holstein UK

Scottish Ag College

- **Premium Cattle Health Scheme**
- "We seek to identify herds free from certain diseases and to offer a control programme for those herds in which the diseases have been identified."
- The Premium Cattle Health Scheme (PCHS) is organised and supervised by Veterinary Services of SAC Consulting in partnership with practising veterinary surgeons.
• ARCBA and individual breed associations have a role to play in the organisation and promotion of on farm biosecurity programs?

British Limousin Society

• Is very active in promoting on farm biosecurity programs to its members
• Provides a refund of £4 for each calf registered to members who are also members of a CHeCS-approved herd health scheme.
• In 2012 BLS provided £37,032 in refunds to members
• In 2012 47% of the 20,000 calves registered by the British Limousin Society were in a CHeCS approved herd health program
There is a role for ARCBA to play in association with the Australian Cattle Veterinarians

Actions
1. Discussions have been held with Australian Cattle Veterinarians and there are keen to be involved.

2. A small working group to be set up to establish guidelines for accredited on farm biosecurity schemes initially covering BJD and BVDV.
Update on Beef Genetics R&D

Rob Banks
AGBU

Aims

• Producers can make informed choices in buying bulls
• Double the rate of genetic progress
• Breeders have skills, confidence and tools to drive genetic progress and bull sales
Where are we today?

• 25 years plus of BREADPLAN and supporting R&D:
  – BLUP technology well-established, proven and accessible
• 21 years of CRC R&D:
  – Genomic technology established and evolving fast
• Australian rate of genetic progress:
  – Average internationally
  – Heavily dependent on importation

2012-2015 RDE plan

• Strategic R:
  – Methane and feed efficiency
  – Improved genomic tools (cheaper)
  – Use of genomic information underpinning within- and across-breed evaluations
2012-2015 RDE plan

• Applied R&D:
  – Drive polled gene testing
  – Validation of CRC reproduction outcomes – incl. testing adaptedness of high fertility animals
  – Maintenance R&D (AGBU) tied to breed focus on genetic improvement and strong integration with SBTS/TBTS
    • Breeding program design incl. use of genomics and international linkage

2012-2015 RDE plan

• Implementation:
  – Demonstration of value of improved fertility in north
  – Supply chain integration to capture data from feedlot and processor
  – SBTS and TBTS more focussed on genetic gain in key studs/sources
  – Capacity building (skills, knowledge, confidence) in breeders
CRC Genomics Results

• Prediction equations now available

• BREEDPLAN can include multiple tests on an animal

• Accuracies in medium range (25-45%)
  – Scope for screening young bulls

• Limited spread:
  – Angus
  – Fertility in Brahman

Opportunities

• Expand BIN projects
  – More breeds, more cattle, more traits

• More data from feedlot and processor

• New reproduction traits for north

• Use genomic tests – young bulls
Major challenge:

- Genomic tests require calibration
  - At least 5,000 animals recorded and phenotyped
  - Maintain this number with 1-2,000 animals per year
- Breeds that cannot achieve this – no genomic tools
  - What breeds do we want in our portfolio?
- Breed societies will have to find ways to support recording and faster genetic progress