

Focus | Integrity | Performance | Profit | Commitment | Innovation

## YOUTH AND EXPERIENCE

i. We have now had two 'years of the producer' with the marvellous run of prices, and in 2016, an thoroughly wet winter and spring which built sub soil moisture and filled waterways. It is delightful to see you, our commercial clients reaping the rewards for your efforts. The medium term predicted supply, the dollar and exchange rates, the balance of global factors beyond our control, should see good prices continue.

It is also a 'watershed' at Rennylea with our youngest, Anthony (also known as Bood) returning home to work in the business after some years away, including his time in Central Australia with the Costello family. He spent the last four years with Hunter Valley Operations, completing his apprenticeship as a Mobile Diesel Mechanic. We are delighted that he and Ruth have chosen this path, excited by their energy and commitment, amazed by their ideas and proud of the skills they have brought home.

We are building a multi generational family agribusiness, utilising the strategic skills and experience of our generation (Bryan, Annie and Lucinda), with the deep production experience of Peter, Sue and Dirk, and joined by the youthful energy of Ruth and Anthony. We are also delighted this year to welcome Shayne Halfpenny to the team, from a family farming business at Gulargambone and Menangle.

Peter Govan is currently completing the Rabobank, Executive Development Program for Primary Producers, a high level, MBA type course which gives technically competent



operators global and leadership exposure and some challenging personal development. He has a short article in the newsletter and reiterates the benefits of getting away from the daily grind to see anew.

ii. "Our mission is to minimise cost of production pre farm gate and maximise market suitability post farm gate."

## YOUTH AND EXPERIENCE cont.

These two goals are not completely aligned or completely antagonistic, and the skill is balancing selection to achieve both. To do this we need tools that can help us achieve the balance.

It is the reason we have joined the new Trans Tasman Maternal Productivity project, a project involving herds located in New Zealand and Southern Australia, Angus and Hereford. In addition to the mounting evidence that increasing cow size has negative effects on herd profitability, we have been concerned that the fertility EBVs do not enable us to improve overall herd reproductive performance. We reported evidence from four US studies (involving hundreds of herds) in the Winter Newsletter, showing that reproductive performance had not changed in 25 years. This paper, by Dr. David Thalman from Oklahoma University is available on the Beef Improvement Federation website under 2016 proceedings.

We shall report annually through the Newsletter, as we progress with the research project. This is in addition to the research work with the adoption of genomics, and genomic enhanced EBVs that we are already involved with.

We also have a project in the pipeline, a collaborative project with CSIRO, Zoetis, NSW DPI, ABRI and Angus Australia, to utilise digital collars to collect data on grass fed intake. We are very interested in improving feed efficiency on grass, as that is where the cow herd spends her lifetime. As we reported last newsletter, recent research in the USA (Dan Shike, BIF 2016) have put the grain:roughage correlation at .58, with a greater variation in performance on a roughage diet. And these diets were both fed in a feedlot situation, rather than a grazing situation. The hypothesis is, that the performance in the paddock on a year round diet that varies in protein, energy and cellulose will have greater variation again.

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**iii. In the forthcoming Autumn Bull Sale there is a fine line up of Rennylea genetics, superb carcass performance combined with high fertility and a moderate maturity pattern.**

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There are 17 HBR bulls in the catalogue, by a range of sires including GAR Prophet and HPCA Intensity, VLYH921 (a Bartel son) and Rennylea H7 and Rennylea E11. **There are a number of very high performance HBR bulls, including Lot 45 – L506 by Intensity, Lots 67 and 76.** The HBR bulls include some calving ease, low birthweight sons of H7, E11 and GAR Prophet.

**Bryan and Peter have noted their pick lots including lots 2, 3, 4, 6, 8, 11, 14, 15, 20, 28, 29, 45 and 54.** Rennylea has used the USA bull HPCA Intensity as an outside sire since 2014. Although the bull's birthweight EBV is a little outside our comfort zone, we are very happy with the progeny. They are

moderate framed cattle with lots of body capacity, explosive early growth and excellent carcass performance.

Our continued selection for EMA and IMF in the top 3% or 4% of the breed, has shown increased muscling and intramuscular fat in commercial herds and ultimately will improve consistency in these traits for value based marketing systems of the future.

**This is the first sale we have interfaced with Auctions Plus. It is another tool to enable buyers to participate, and the video clips of the bulls will be on both the Rennylea and Auctions Plus website. The bulls are being filmed on the 6th February and will be uploaded within 10 days.**

We look forward to welcoming visitors to Beef Week on the 3rd February and to our autumn bull sale on the 14th March.

Bryan and Lucinda Corrigan



**“We are fortunate to have a visit from Mr. Alan Laing, Senior Extension Officer from far north Queensland, DPI in January. Alan is based at the research station at Ayr and specialises in beef nutrition, supplementation, improving economics using genetics, Breedplan, meeting MSA target markets amongst many other interests. He had a good look at the operation and passed on his knowledge about the environmental demands and adaptation of Bos Taurus cattle in the north. Alan has been a great supporter of Rennylea genetics with herds seeking to improve their fertility and market suitability. He said that Rennylea has the most balanced genetics for what he is seeking.”**

## WHAT'S NEW - FROM PRECISION AG TO DECISION AG?

There has been a lot of chat in the media about where technology is taking us in a space now labelled as AG TECH. The language of digital disruption, of drones, robots, spatial information, genomics, big data, open data sharing along supply chains.

How does a greater understanding of market and consumer insights enable us to improve the value creation from behind the farm gate to the customer? To whom are the benefits delivered and how can we, at the start of the value chain, capture some of the value?

What will these technologies deliver?

The Australian Farm Institute ran a conference on the promise of Digital Disruption in June. The conference introduction went as follows:

“Across all agricultural commodities, digital technologies and applications are emerging that are disrupting production systems and supply chains, creating radically different business models, and enabling farmers and agribusiness to manage with levels of precision and insight that were previously unimaginable.”

“The generation of data is not new,” said Mr. Mick Keogh, CEO of the Australian Farm Institute.” Think of the data collected by GPS systems, of the immense data and the possibilities of the National Livestock Identification System.”

It is the software integration and the data platforms that are new. In the US corn production system, data is collected from machinery, drones and integrated to assist decision making by farmers. US studies show productivity gains of 10-15%



where ½ is generated by increased yields and the other ½ by reduced inputs. The data is used to sharpen decision making.

We know that gains in agricultural productivity have been flat lining for the last 30 years. There is clear evidence that especially in the broadacre sector that Digital Ag will assist productivity gains.

The tools will be Apps, new software, integrated platforms that deliver tailored solutions from the massive amounts of available data.

Australia’s challenge is to work out where the weak linkages are, where investment is required, (in addition to mobile and internet connection) and speed up the development of solutions.

## A DIGITAL CHALLENGE - THE PROMISE OF GENOMICS



In September 2016, Meat & Livestock Australia ran a workshop in Brisbane to bring together the parties in genetic improvement with the aim of fast tracking the developments needed to increase genetic gain.

A keynote address by Professor Ben Hayes, from the University of Queensland (and with a background in genetic improvement in the dairy industry) gave an insightful view of the disruption that genomics will deliver in a decade. Professor Hayes leads the ‘1000 bull Genomes Project’ globally.

“By 2026, genomics will deliver on farm and in the stud sectors, working across all breeds for all traits,” Professor

Hayes said. “EBVs will be based on genomics only, with no use of pedigrees, and results will be instant with a crush side test. Heifers will be assessed for fertility, steers for market end point as young as is practical”

He described the steps industry needs to make to get to this, the shared investment in phenotypes to develop prediction equations, so that low cost and highly predictive tests are available for northern and southern cattle. A disposable crush side sequencer is being developed in the medical sector.

“Large reference populations are required, including seedstock and research herds. There will be two sources of truth, the animals that are measured in industry and along the supply chain, and the validation populations. The key will be consistent language across the supply chain.”



# A DIGITAL CHALLENGE - THE PROMISE OF GENOMICS cont.

## THE 1000 BULL GENOMES PROJECT

The 1000 bull genomes project, led by Dr Hayes, is a large consortium of 30 partner institutes from around the globe, that have sequenced the entire genomes of more than 2000 bulls. The bulls represent 14 breeds that are widely used in Australia and other countries for milk and beef production, and include many of the key ancestors of each breed. The project aims to build a large database that captures the majority of the genetic variation for all cattle breeds. The database is the key to allowing cattle producers to make better genomic predictions of the breeding merit of young bulls or heifers, for key traits in beef and dairy production, including milk production, fertility, meat quality, feed efficiency and other traits that affect farm profitability.

There have been several significant discoveries as a result of the project already. These include embryonic lethal defects carried by key bulls that have reduced fertility, mutations causing defects in sperm, and mutations including severe dwarfism. These mutations have been included on the latest SNP chips, so that breeding animals can be screened on a large scale for the defects.

## OTHER APPLICATIONS

The proliferation of data, with the development of the integration platforms that The Australian Farm Institute identified, promise more accurate decision making in many areas. These include the ability to identify and select for:

- \*improved disease resistance
- \*nutrient digestibility in feedstuffs
- \*feed savings through genomic predictions
- \*ethical welfare considerations and improved animal welfare metrics

When you combine these technologies with advanced reproductive technologies such as sexed semen for particular markets, higher value can be extracted from the final product.

At the MLA AGM in November, Sean Starling, General Manager for Value Chain Innovation, covered some of the fast

moving developments in the next few years. Technologies such as 3D printing, driverless cars, artificial intelligence, the internet of things, rely on the ongoing development of digital capability. The prediction is that they will be commonplace in the next decade.



**“In May we were searching for a young person to assist Ruth with the cows and through connections, ended up with a young NZ lass, Hana Linssen from near Picton in the South Island. A very determined young woman, it was a pleasure to have Hana here, with her broad accent and quirky sense of humour. She applied herself to many tasks she had not done before, learned a great deal and we are delighted that she is choosing to go to Lincoln University this year. She has a great future!”**

## THE NEXT STEPS IN GENETIC IMPROVEMENT

At a high level, industry has come to realise the need to streamline and improve our genetic improvement systems. After a long period of negotiation a National Livestock Genetics Consortia has been formed with key underlying principles.

The principles recognise that breeders capture less of the benefits of genetic improvement than what it costs them to collect. Recent papers from the academic community have focussed on this issue, of sharing the cost of phenotyping as an industry resource, across the value chain. The principles include:

- i. Valuing phenotypes, socialise the costs and the benefits, new funding model so that those collecting all the data are not paying all the costs.
- ii. Collaboration – an open and transparent culture of working together.
- iii. Genomics, very important for the hard to measure traits and will in time become the sole driver of selection values.
- iv. Multicountry analyses will be a factor for smaller breeds
- v. The multibreed analysis is vital, if the commercial industry is to deliver the traits of importance to the consumer in a cost effective manner. In the sheep breeding example, traits of importance are combined from different breeds to produce the terminal and maternal composites that are more efficient in growth and reproduction.
- vi. The game changer in all these changes is a national data platform, which is independent of the component systems, via the shared platform.

Then there is the promise of ‘Single Step’ analysis, which is the way the genotypes and phenotypes are combined to produce the EBV for each trait. This new method has been in the pipeline in Australia and internationally since high

density DNA tests were developed and started to become commercially viable.

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**The basis of single step is the relationship matrix, which maps the genotype based on the proportion of genes from the dam and the sire rather than averaging them at 50% from each.**

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At a practical level, the genius of the single step method is that it uses both the pedigree and genomic data, where available, to determine the relationships among genotyped and ungenotyped animals. In an example, the calf may receive 50% of its genes from its dam, of which 10% overlap with the genes received from the sire (same allele). In that case the calf would be 50% related to the dam and 60% related to the sire. Based on genomic information, animals identified as unrelated by pedigree, will often share common genes and have a relationship through their DNA.

When single step is implemented, the genotypes will be incorporated continuously into the evaluation, and there will be less fluctuations in EBVs.

The initial change to Single Step is expected to produce re ranking of sires. It is one reason that Rennylea has embarked on whole of herd genomic testing. The advice we have received from our genetic advisers is that where genomic testing has been implemented for a couple of generations, we shall see a greater effect of genomics on the performance figures. That is not necessarily a greater impact.

The word is that the US Angus industry will adopt single step in the middle of the year and Australian Angus some time after that, possibly by year’s end, after thorough testing.

## Paddock Talk by Bryan

I am on the steering committee for the Trans Tasman beef cow profitability project, and the hope is that this is an opportunity to better describe maternal efficiency and fertility in beef cattle.

From years of experience in running a breeding herd, and in developing a seedstock herd, Breedplan has been a fantastic tool to make genetic progress in the easy to measure traits. However, in terms of female fertility and maternal efficiency it has fallen short.

At the Beef and Lamb NZ conference and at BIF in Kansas last year, there was considerable evidence to support this. I was particularly taken by a paper by Prof. Dorian Garrick that

showed that productivity increases in NZ Angus have been negated by increased cost of production.

My experience in designing genetics is that you cannot ignore what happens in the paddock, we as seedstock producers have a responsibility to realise that today’s genetics have impacts in commercial herds for decades. Following fads for short term gains is not going to deliver long term profitability and sustainability.

I am hoping this project can assist to develop tools that aid the beef industry going forward and assist us adapt to changing markets and the environment.



## RENNYLEA – A FULL SERVICE

**“A High Performance Team, giving service every day of the year.”**



Ruth, Dirk, Shayne, Anthony, Annie,  
Lucinda, Bryan, Peter Sue

**“Fully described, phenotypes and genotypes, bulls and cows.”**





## GENETICS BUSINESS

**“High Performance Bulls”, exceeding consumer expectations.**



**“Delivery and after sales service.”**



On sale day and throughout the year, the Rennylea team is interacting with clients, industry professionals, researchers and service companies.



**“Lifetime animal health records.”**

# THE NEXT STEP IN MATERNAL EFFICIENCY – the TRANS

Rennylea participated in the Maternal Efficiency project in Beef CRC III, the significant investment in Southern Australia which sought to understand the cow’s partitioning of energy for maintenance and growth.

The project investigated high and low (genetic) fat and feed efficient lines of angus and Hereford females, both in seedstock and research herds. The research questions were particularly focussed on the fertility in the first and second calvers, and the responses under limited feed. The latter was not able to be fully challenged, due to animal ethics not allowing cattle to get too light.

The results showed significant differences in fertility and profitability, and economic predictions of lifetime performance, with most of the differences expressed in the heifers and their rejoining with a calf at foot.

It is important to note that in Angus cattle, the ‘average’ performance such as 600 day growth, changed significantly over the life of the project (2003 - 2012), from 60 to 97 (as the cattle selected were born prior to the project commencing). The increase in frame size and body composition over those years, decreased the body fat by 24%.

There were many interesting results about how the cow stores and mobilises energy in fat and muscle. There was evidence that selection changes body composition but did not change the basic metabolism, the efficiency of maintenance.

**At the end of the project there was general agreement that a new measure of cow efficiency was required, to the mature cow weight EBV currently available. In this study and other international studies since, a mature cow EBV has been proposed combining weight at weaning, hip height and body condition score at weaning. In addition a broader definition of efficiency must include fertility.**

A new project has commenced, in 2016, with collaborating herds in Australia and New Zealand. Called The Trans Tasman Beef Cow Profitability Project, the project will pick up the issues raised in the former project, improve trans Tasman linkages and genetic and environmental interactions.

The ultimate goal is to improve the rate of genetic progress in a self replacing herd, by improving maternal performance. Some of the research is focussed on collecting more accurate data, that uses 100% accurate fate codes, or why a cow leaves the herd.

There is a large piece of research looking at age of puberty, through ovarian scanning, and combining these data with fat and muscles scans to estimate body composition.



K heifers with calves at foot.



# TASMAN BEEF COW PROFITABILITY PROJECT



**The heart of the herd with mixed age cows and calves.**

We will be looking for a more accurate way to select highly fertile females with moderate mature cow size, through the development of new tools, including EBVs. This will create the profitable commercial herds of the future.

Days to Calving uses only natural mating records and excludes all the data from AI and ET. Gestation Length, which is highly correlated with calving ease, only uses data from artificial matings and excludes back up bulls. What would inform our selection more accurately?

The dairy industry has an EBV, 'Wet and Pregnant', an important profit driver for heifers, to rejoin and become

pregnant six weeks, with a calf at foot. If you look at the current days to calving trait leaders in the Angus breed, you will find, in the top animals, cows that have not reared a calf each year. They may be getting in calf quickly when the joining is successful, but they will not be profitable if they don't calve every 365 days!!

At the end of the project we hope to have new genomic tools that assist selection for maternal efficiency.



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# RENNYLEA SPRING SALE

The Beef Central website has become the disruptive, immediate source of information in the cattle industry. Anyone can subscribe to the Beef Central daily email, which covers news across the nation and in international markets.

The report in the edition 30th August 2016, summed up the week's sales results and featured the Rennylea results.

“The blue ribbon for last week's sales must go to Rennylea Angus in the Riverina, where the 137 bulls offered all sold at an average price of \$10751, despite the sale producing a comparatively modest \$22,000 top price. It's easy for one or two outstanding high prices at the top of a bull sale to artificially inflate the average prices for the others, but not in this case, where every bull had to pay his way.



**The sale produced spectacular gross of \$1.47 million. Add to that the \$621,000 Rennylea grossed at its autumn bull sale in March 8, where 80 bulls averaged \$7763 and the stud's 2016 auction gross for bulls is more than \$2million.”**

Noteworthy was the popularity of sons of young Rennylea sires involved in the Angus Sire Benchmarking program.

All the team at Rennylea would again like to thank buyers and underbidders for your confidence in our program and the wonderful support we received.

## COHORT 4 – RENNYLEA G255

The final results for the 4TH cohort of the sire benchmarking were released at Christmas, following the slaughter of the bulls' progeny.



**Rennylea G255's had his superior carcass confirmed, with the following results of his steers' carcasses.**

- \*3rd in the group for scan IMF%
- \*1st MSA marble score
- \*1st CARCASS IMF
- \*8th CARCASS EMA
- \*1st MSA index 65.4

January 2017 Angus Australia BREEDPLAN																														
Name/ID	Calving Ease Dir (%)	Calving Ease Dist (%)	Conformation (Score)	Born Wt. (kg)	200 Day Wt. (kg)	300 Day Wt. (kg)	400 Day Wt. (kg)	Milk (kg)	Scallop (mm)	Days to Calving (days)	Calving Wt. (kg)	Run Involvement (mm)	Rib Fat (mm)	Rump Fat (mm)	Refract. (kg)	IME (%)	NEEP (kg/ha)	NEFE (kg/ha)	Actual Breeding Index	Domestic Index	Heifer Gross Index	Heifer Carcass Index								
RENNYLEA G255 (APRIET)	-3.4	-4.1	-3.4	+4.1	+49	<b>+97</b>	<b>+137</b>	+118	<b>+23</b>	+0.7	-3.3	<b>+93</b>	+5.7	+0.4	-2.9	-1.5	<b>+5.4</b>	+0.12	+0.29	-1	66%	61%	76%	85%	-1	66%	+\$ 137	+\$ 107	+\$ 179	+\$ 118
Breed Avg. EBVs for 2016 Born Calves	+0.0	+0.1	-3.7	+4.3	+42	+77	+100	+88	+15	+1.7	-3.8	+66	+4.8	+0.0	-0.2	+0.3	+1.6	+0.09	+0.15	+5	+108	+103	+110	+105						



# THE RABOBANK EXECUTIVE DEVELOPMENT PROGRAM 2016

Early August 2016, I had the privilege and pleasure of attending the Rabobank EDP in Sydney.

The first part of the program is run over six very full days and nights on the beautiful campus of Macquarie University. We covered a broad range of subjects from Self-understanding, Goal Setting and Succession Planning right through to Financial Management, Benchmarking Performance and Strategic Thinking and Planning.

The calibre of the Speakers and Guest Presenters was outstanding. The Guest Speakers had a common theme of “thinking outside the square” to achieve their dreams.

One of the guest speakers, Peter Mac Smith is a Director of MSM Milling in Manildra, central west NSW. Peter and his brother Bob started Mac Smith Milling on their family farm in 1992. The Mac Smiths were growing canola and realised that there was more potential in marketing the oil, rather than just marketing the seed. They started pressing around 300 kg of canola seed per hour, and after forming a joint venture with the Chairman of the Manildra Group, Mr Dick Honan, in 2006, they constructed a purpose built factory in Manildra. MSM Milling now employs around 60 people and processes more than 100 000 metric tonne of seed each year and is still expanding. All of this was achieved by thinking outside of the square. A few of my take home points from this inspiring presentation were

- Persistence will pay
- Challenge the status quo

- You can’t beat hard work and instinct
- Know your figures and back yourself, but don’t fool yourself.
- You can’t beat personal service and relationships.

One of my true highlights of the course was being able to network with the high quality participants. Most of the attendees’ enterprises were very different to our operation. These enterprises included Stone Fruit Orchardists, a Seed Potato Grower, Organic Vegetable Growers, Dairy Farmers, Croppers, Lamb Producers, Rangeland Cattle Farmers and Seed stock operations. These farms were spread over wide geographic and climatic areas, ranging from the bottom of New Zealand to the Northern Territory in Australia and almost everywhere in between.

Even though these operations were vastly different, we shared a common goal of working towards improving ourselves and our businesses.

Thank you Bryan and Lucinda for making possible this rewarding opportunity to me.

Peter Govan

The Corrigans would like to thank Rabobank for accepting Peter onto the program, it is wonderful to see how much he is gaining from it.



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# Rennylea

*creating your future in beef*



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**Peter Govan:  
"Quality genetics  
are always  
affordable."**