

### **Acknowledgments**

I would like to thank the selection panels of the Australian Nuffield Farming Scholars Association, for having faith in me and providing the opportunity to see Agriculture from a different perspective.

To our sponsors, who without their support the scholarship would not survive.  
Qantas William Buckland Foundation  
Rural Finance Corporation of Victoria.

To my referees Graham Lean and Philip O'Toole who were kind enough to support my application.

To my wife Mandy , who took on so much while I was away, and three sons, James, Nickle and George who tested everyone and reminded me why we have to challenge all we do. To my Parents, John and Jenny, Parents in law John and Sally Gunn, Mark & Anna Gubbins, Colin & Jill Frawley who all had a stint at looking after our children so Mandy could join me for part of the time.

To my parents who did an excellent job, along with Mick Petersen in running the operation at Murroa while I was away, especially after a terrible spring of 1996 and near drought conditions of summer & autumn 1997.

To Mick Sheehy for organising the Malaysia Leg, and introducing us to Asia .

To my fellow scholars,  
Bernadette Clarke  
Peter Notman  
Liz Riley  
Alison Worsley  
Murray Douglas  
Paul Harris  
Julian Raine  
Nigel Dorward  
Ronald McCoy

Thank you for your stimulating company and learning experience with so many diverse views.

### **U.K.**

Stephen Fell and Steven Bullock for organising a very interesting and well run 4 week tour.

My host "Farmers" John and Petie Alliston for somewhere to feel at home and pointing me in the right direction, and the many introductions. To all the wonderful people I visited who opened their homes and thoughts.

### **USA**

To Tom and Lisa Field, Who were like a home away from home and a wealth of information and contacts.

To Joe , Chris and Gary King who gave an insight to commercial ranching in blizzard condition in Montana.

To Tom Elliott , the Sitz family, Henry and Nan Gardiner and all the wonderful people I visited in Montana, Colorado and Kansas.

### **Introduction**

My objective was to study the process of growing grass, efficiently and profitably converting it to a product (Meat) that consumers desired.

This included on farm management as well as post farm to retailing aspects.

This was a very broad topic but I didn't want to make my focus too narrow for fear of missing some future direction. I ended up focusing on meeting consumer expectations profitably. Topics I will cover include farm assurance in the U.K. Measuring Eating Quality in UK and USA, alliances in the supply chain and matching production systems with the environment..

### **Asian leg**

The initial tour, of Singapore, Malaysia and Thailand, was extremely valuable. These two weeks reinforced two things to me -

- (a) We must target our production to what we have identified the target market to require at a competitive price.
- (b) Doing business in ASIA takes time to develop the relationships and trust. This is nothing new but we must focus better.

### **Farm Assurance in the U.K.**

Much has been written about The BSE Crisis in the U.K. The biggest issue was the crises in consumer confidence. Up until BSE, consumers had considered food to be safe. These ideas were shattered with BSE. Consumers questioned what food was safe and became hysterical.

The major food retailers (supermarkets) who retail up to 80% of lines under their own "brands" wished to "ASSURE" their customers that their food was safe, and produced under a system that could guarantee integrity.

The FARMERS UNIONS had been pushing FARM ASSURANCE SCHEMES for some years (like our QA Schemes - Cattlecare and Flockcare - but more inclusive to suit more stringent animal welfare councils brought about with housing livestock for long periods.

Food safety was taken for granted, therefore no retailer or buyer support was given. This made it difficult to gain required support from producers. The auditing requirements were relaxed from independent outside audition to vets and auctioneers , the equivalent of our stock agents but who may be compromised in order to keep business. This gained some momentum but compromised the integrity of the Farm Assurance Schemes.

With this crisis in consumer confidence, the supermarkets were looking to assure their customers that their food was safe. In looking at the existing assurance programs they found them compromised. Each retail chain then set up their own Assurance Scheme, almost getting to the stage of competing over whose food was the safest. This led to a very difficult situation for the farmer in trying to decide which scheme and marketing chain they would support and sell to.

The major retailers changed the emphasis of their buyer's to supply Chain Managers.

They are now just as concerned about the integrity of the product as they are about purchase price.

It has now evolved that the initial Farmers Union Scheme is the base for all the supermarkets schemes, but all the ones I visited had their own auditors to audit the farmers who supplied them. Therefore, if supplying to more than one processor, the farmer will be required to be audited by each processor.

The lesson here for Australia is that we cannot compromise our auditing procedure.

### **Eating Quality - U.K.**

With 80ouglas Paul Harris Julian Raine Nigel Dorward  
Ronald McCoy

Thank you for your stimulating company and learning experience with so many diverse views.

U.K.

Stephen Fell and Steven Bullock for organising a very interesting and well run 4 week tour.

My host "Farmers" John and Petie Alliston for somewhere to feel at home and pointing me in the right direction, and the many introductions. To all the wonderful people I visited who opened their homes and thoughts.

USA

To Tom and Lisa Field, Who were like a home away from home and a wealth of information and contacts.

To Joe , Chris and Gary King who gave an insight to commercial ranching in blizzard condition in Montana.

To Tom Elliott , the Sitz family, Henry and Nan Gardiner and all the wonderful people I visited in Montana, Colorado and Kansas.

## Introduction

My objective was to study the process of growing grass, efficiently and profitably converting it to a product (Meat) that consumers desired.

This included on farm management as well as post farm to retailing aspects.

This was a very broad topic but I didn't want to make my focus too narrow for fear of missing some future direction. I ended up focusing on meeting consumer expectations profitably. Topics I will cover include farm assurance in the U.K. Measuring Eating Quality in UK and USA, alliances in the supply chain and matching production systems with the environment..

### Asian leg

The initial tour, of Singapore, Malaysia and Thailand, was extremely valuable. These two weeks reinforced two things to me -

(a) We must target our production to what we have identified the target market to require at a competitive price.

(b) Doing business in ASIA takes time to develop the relationships and trust. This is nothing new but we must focus better.

### Farm Assurance in the U.K.

Much has been written about The BSE Crisis in the U.K. The biggest issue was the crises in consumer confidence. Up until BSE, consumers had considered food to be safe. These ideas were shattered with BSE. Consumers questioned what food was safe and became hysterical.

The major food retainers (supermarkets) who retail up to 80% of lines under their own "brands" wished to "ASSURE" their customers that their food was safe, and produced under a system that could guarantee integrity.

The FARMERS UNIONS had been pushing FARM ASSURANCE SCHEMES for some years (like our QA Schemes - Cattlecare and Flockcare - but more inclusive to suit more stringent animal welfare councils brought about with housing livestock for long periods.

Food safety was taken for granted, therefore no retailer or buyer support was given. This made it difficult to gain required support from producers. The auditing requirements were relaxed from independent outside audition to vets and auctioneers, the equivalent of our stoat (mince etc) to batches. This traceability forced on the industry by the BSE scare is becoming a very powerful tool for those seeking to supply consistent high eating quality meat.

Scots Beef have used the Taste Testing with traceability to monitor suppliers lines (farmers). They have already found cattle that don't perform and won't buy them again. They are looking at comparing feeding systems and after that, genetics.

They have also the additional requirement to age beef before sale with some cuts being aged for up to 40 days.

The Marks & Spencer specification requires different cuts to be aged for different periods for standard maturation. They require from 3-10 days for Fillet, and to 23-30 days for Sirloin.

I believe Scots Beef will make big gains in the next few years in supplying the high eating quality brands of beef, by having a much greater understanding of what drives the variation in eating quality and how to control it.

Another plant I visited was the ABPI Plant at Shrewsbury, Shropshire, who are supplying Tesco's Supermarkets and informed me they have implemented the four golden rules to eating quality. They were experimenting with scanning equipment to identify dark cutters and bruising in the live animal with the plan to treat dark cutters with electrolytes and send animals with unacceptable bruising home. They were very secretive about this work and I wasn't given an opportunity to take the topic further.

There seems to be differences to what the M.L.C. (Meat & Livestock Commission) say breed has on eating quality and the plants that are doing a lot of taste testing. This can be explained by the different levels of eating Quality being targeted. There is a big need to put all this taste testing work together

and develop a graded system. Although with the commercial work done so far there may be reluctance for this to happen.

A large proportion of male calves are kept entire and slaughtered as bulls. MLC work indicates bull meat can achieve good average eating quality if killed under 15 months of age, and grown quickly, at least 1.2kg/day over the last 100 days. Scots Beef find it is unacceptable for the higher eating Quality Brands they service.

### UNITED STATES

USA now produces as much beef with 100 million cattle as it did 10 years ago with 130 million head. They are aiming to export 20% of production within 5 years. With the change in health status in Argentina the world beef market is going to become more competitive. The Australian Beef Industry, a major beef exporter, only produces 7% of and exports only 3.1% of world beef production

On talking to beef specialists at Colorado State University, meat is graded on quality and yield. QUALITY is measured as the amount of marbling. Marbling is the only measure of quality at present. Eating Quality is termed Palatability.

- Palatability is
- (1) Tenderness
  - (2) Juiciness - marbling - degree of doneness
  - (3) Flavour - quality grade or marbling
    - feeding
    - ageing.

In the 1995 USDA Audit 30% of steaks were considered tough. In order to overcome this packers are working to sort carcasses post slaughter to treat unacceptable meat to make it acceptable. This is a different approach to the U.K. where they managed the process to reduce variation. The US system seems to be moving to a measure and treat method. Time will tell if it can deliver the results.

Management on feed can have a large effect on grading performance of cattle. I visited Gary Teague's feedlot in Colorado with Bob Taylor (CSU), and again with Ian Johnson (Australian MRC), and better management of the finishing system is giving very impressive results.

By matching implant and feeding program (% protein and energy) to the breed and muscle type, and sorting before slaughter, taking only those that are ready has given big changes in grading performance.

National Beef Audit	Red Angus Breed	Teague Yard
PRIME 1.3%	42%	4%
CHOICE 47%	67%	65%
SELECT 46%	29%	30%
STANDARD 5%	1%	1%

The Teague yard results are impressive when they feed less than 15% Angus and have over 50% of Bos indicus cattle in their feed yard.

Of feed yards and Beef Industry Specialists visited, I asked them to rank breeds on eating quality =

- 1 Angus
- 2 Limousin
- 3 Charolais
- 4 Simmental the worst

This result is the same as Scotland where the emphasis on marbling is much less.

The same ranking of the breeds with different systems and measures of Eating Quality is very interesting and begs the Question, 'Is it the ability to marble that is the important component of palatability, not the level, whether fed to express that ability or not?'

It seems to me that the ability to marble is vital to consistent high Eating Quality and the level of the marbling becomes a taste factor for different markets.

### **Presentation of Genetic Data.**

During my trip around cattle producers, researchers and educators of the rocky mountain state of Montana, Wyoming, Kansas and Colorado there was much discussion of cattle matters. The topic that often arose was the process of informing cattle producers what all the genetic information (EPD's and in our case EBV's) means. In simple terms there are three pieces of information that must be understood in order to make a meaningful judgement of where an animal fits or its merit within a population. The actual EBV, the accuracy of that EBV, and the range of the population that animal is compared with. The accuracy is often misunderstood as it relates to the range in which the EBV is likely to move in as more data is processed.

On discussing this with Dr Tom Field at Colorado State University (CSU) where they display their data as an absolute value positioned within the population range, I thought of the idea to use a Variable sized diamond to display the accuracy to the EBV. This gives a visual display of where the animal is compared to the group it was compared with and the likely change is its positioning as more data is added.

On my return our Western Angus Group took it up and David Kelly developed the computer graphics to the following display.

Diamond select display

### Alliances or vertical partnerships

A definition of "alliance" is some arrangement between buyer and seller entered into freely, to facilitate a mutually satisfying exchange over time, which leaves the operation and control of the two businesses substantially independent of each other.

With the beef down turn in the USA, Ranchers are looking for ways to increase returns. Alliances or Vertical Partnerships are one such way. 30 such alliances have sprung up over the country. Academics I spoke to are very sceptical that few will be long lived as their argument is that when returns improve, producers will slip back into their old ways, and the rigour of the commitment to an alliance will be too hard.

One developing alliance given a better chance of survival that I followed through is 'FARMLANDS SUPREME BEEF ALLIANCE'.

This alliance involves the seedstock producer, rancher, feeder, processor and retailer and targets the premium ANGUS beef brands - the well known Certified ANGUS Beef and "Farmland Black ANGUS Beef".

This alliance is set up to give benefit to players in the chain:

- (1) Seedstock Producer = extra bull sales and demand through preferred status.  
= Information feedback on progeny.
- (2) Rancher = bonus in cash up to 10cents A\$ kg carcass above quality grading premium.  
= Bonus in the form of credits to buy bulls from participating seedstock buyers for animals that make the grade.  
= Incentives to retain ownership of cattle through the finishing stage.  
= Genetic and management support from affiliated seedstock supplier
- (3) Packer and Retailer = to source carcasses that meet their specifications in a reliable and planned way.  
= to reduce carcasses that don't meet specifications

Alliances have developed in the U.K. post B.S.E. by retailers keen to guarantee the integrity of the meat they sell. The producer Clubs mentioned previously are the farmers end of these supply chains. I spoke with processors who have been supplying the same retailer for over 100 years with no written contract. This processor's business has grown and diversified in partnership with the retailer. As the retailer saw a need for different products or processes the processor was working with them to supply what was required.

The producer clubs is an extension of this down to farmer level. The advantages of the producer clubs to the farmer is that in the oversupply situation that exists stock can be slaughtered as they meet specification with a bit of planning. Often animals are having to be held and fed for long periods for those farmers not aligned substantially increasing their costs.

Alliances need mutual benefit to all members along the supply chain, and are the logical way for the supply chains of premium brands offering differentiated measuring eating quality. All segments can measure how they are performing.

### Commercial Beef Production in U.S.

Many commercial ranches I visited had a large amount of European blood in their cow herds despite the harsh environments. This was introduced initially to increase calf growth rates to achieve higher weaning weights and higher sale prices for weaner calves. Then the heifers were retained in the cow herd. This has had two detrimental effects on Rancher profitability:

- 1) Increased maintenance cost (in extra feed to maintain cow herd) requires more supplements to be used or lower cow numbers wintered.
- 2) Increased Dystocia causing calf loss - increased calf losses;
  - a labour higher requirement at calving
  - longer rebreeding intervals resulting in either longer calving periods or lower rebreeding rate..

This effect is made worse by the often extreme conditions at calving time.

There is a move back to improved British breeds and their crosses to gain market acceptance and increased efficiency on the ranch in conjunction with retained ownership.

### **Retained Ownership**

There is a move to retain ownership of cattle in the finishing system by Ranchers, although initially this has significant cash flow implications and possible increase with risk.

The big benefit to this retaining ownership is the advantage in turning more beef off the ranch. As returns are made at slaughter, weaners don't have to be as heavy and carry as much condition on entry to feed yard or can be contract grown out on other feed - Wheat pasture or corn stocks for some of the winter.

This allows the management of the Ranch to better fit the season variation, often calving at a more optimum time (slightly later).

It also allows full value of genetic potential to be realised by the Rancher, giving the Rancher more incentive to use the appropriate genetics.

Many Feed yards are becoming just that, sellers of feed and pen space, making their return on how efficiently they service their customer, the owner of cattle in the feed yard, the rancher or investor. It was common to find feed yards that only owned 5-10% of cattle on feed, the rest on retained ownership or investor owned.

It is this Investor money that has freed up the feed yard from having to own all the cattle they feed to just a small percentage. This has reduced the risk and amount of capital required to run a feed yard. Their repeat business depends upon the way they have just performed. The funds they compete for are looking for the best return. Good feedyard performance exceeding targets is essential to maintain customers.

## Conclusions

1. Only a small proportion of the world beef production is traded internationally. Therefore the price is subject to very small changes in world production. Price volatility will continue.
2. Every market is calling for consistency and reliability in eating quality .  
World wide -the eating quality, niche is still unfilled.  
UK - meat due to subsidies is too expensive on world market unless sold at a loss. GATT negotiations are vital in stopping this potential dumping.  
US - standard USDA choice only focuses on one part of eating quality - marbling.
3. Every segment of the Australian industry must focus on graded measurable levels of eating quality.  
Producers can then target the eating quality level that their country allows them to produce most profitably, matching environment, genetics and management.  
Producers will have to continue to concentrate on the costs of production.  
This may even involve a fundamental reassessment of where we have our breeding/growing/finishing segments of the industry and the production systems within each..
4. Producers will benefit in the future from being part of a well managed supply chain of mature retailers who require consistent safe product.  
These supply chains will require an assurance program to be monitored right through the chain. These assurance programs won't just be recording systems, they will guarantee product is produced within guidelines and there are no surprises. This will often require a change in attitude from just producing what suits the producer, to supplying an article to specification over a range of seasons. Pricing will move away from the spot market to a more long term pricing arrangement.  
Producers will require a much greater knowledge of their costs of production, what production efficiencies they can make, required levels of return and margin per unit supplied in order to negotiate from an equal position a supply agreement.  
The membership of a supply chain will become an essential part of profitable farming businesses of the future.
5. The initial work done on pathways to eating quality in the Australian Meat Standards is leading the world. This must not be allowed to faultier. This is a chance for Australian Beef to gain a competitive advantage if a graded eating quality focused system can be implemented. within this system there must be room for different niches to develop. Flavour is the one part of palatability that can be differentiated and branding can capitalise on..

## **References**

Breaking with tradition edited by David Hughes  
ABP's Animal Welfare and Livestock Policy  
J. Sainsbury Technical Policies for Farm Assurance  
The Marks & Spencer Select Farm Scheme  
Farmland System News  
Farmland's Supreme Beef Alliance Agreements.  
Farm Animal Welfare by Bernard Rollin