



# *Australian Nuffield Farming Scholars Association*

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*Report of the Study Tour to South East Asia, United Kingdom,  
Europe, South and North America*

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1996 Nuffield Scholar*

**SUBJECT:**  
*Farmers and the Supply Chain  
Achieving Consumer Satisfaction*

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# **An International Scholarship for Australian Farmers**

The Nuffield Farming Scholarship Scheme is now firmly established in the United Kingdom, Australia, New Zealand, Canada, Zimbabwe and France and it is probable that other countries will join the scheme in future years.

Each country has its own independent Association responsible for funding, selection and administration.

The United Kingdom remains the focal point of the Scheme, with the United Kingdom Nuffield Farming Scholarship Trust providing an overall secretarial / liaison service.

Since 1950, more than 800 Nuffield Farming Scholars from the participating countries have criss-crossed the world studying a range of agricultural, trade, political and cultural issues.

Each country awards two or more scholarships annually and as a general rule, scholars from all countries assemble in the United Kingdom in February each year for approximately four weeks of group study before pursuing their individual programmes in the United Kingdom and / or other countries.

The interchange of scholars between countries is facilitated, costs are reduced and the standards of study enhanced by the Association and individual scholars in each country accepting an obligation to assist visiting scholars with itineraries, introductions, travel arrangements and accommodation.

This "Nuffield Network" has become a potent force within the overall scholarship scheme and it is constantly reinforced through the holding of a World Conference in one of the participating countries every three years.

These conferences are usually attended by over 150 former scholars at their own expense. They are concerned with the maintenance and improvement of the scholarship scheme and at the same time they provide an opportunity for former scholars to further expand and increase their knowledge of farming and related issues.

## **The Scholarship**

The scholarships are awarded annually by the Australian Nuffield Farming Scholars Association to enable established farmers to travel to the United Kingdom and other countries for the purpose of increasing their knowledge of practical farming and the broader issues of agricultural production.

## **Obligations**

Scholars are required to devote the whole of their time to a programme approved by the Australian Management Council; to resume residence in Australia upon

completion of the scholarship; to submit a written report to the Association covering the study programme completed under the award; and to communicate details of their newly-acquired knowledge and experience to other Australian farmers.

## **Eligibility**

The scholarships are open to Australian citizens of either sex who are engaged in farming of any kind in their own right or managing a commercial farming enterprise, and intend in the future, to engage in farming in Australia. The preferred age is between 25 and 40 years, although outstanding applicants outside of these age limits may be considered.

## **Tenure and Location**

The scholarships are tenable for four months. Initially a minimum of six weeks must be spent in Asia and the United Kingdom; a group orientation study with the Award winners from other countries is undertaken during this period. Scholars are then able to pursue their individual study programmes.

The United Kingdom Farming Scholarship Trust, the national Farmers Union and the Ministry of Agriculture provide generous support and assist in the development and execution of these programmes. Should successful applicants have farming interests which are not practised in the United Kingdom, they are permitted to complete their study programmes in the country or countries best suited to their pursuits.

## **Application Procedure**

The Australian Nuffield Farming Scholars Association allocate a scholarship to each of the States and the Northern Territory once every three years in rotation.

Applications are invited by advertisements in the daily press from February to May; final selection takes place in August and the scholars are expected to arrive in the United Kingdom in February of the following year.

## **Further information is available from:**

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## **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.

## **Asia**

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 conditions 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 auditors 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 - UK**

With 80% of lines being sold in major supermarkets branded as that particular chains brand, the retailers have become conscious of eating quality. Each of the major chains have base requirements of eating quality. This was also a push from the MLC (Meat and Livestock Commission)

The Major Retail Chains have requirements on processing:  
The Four Golden Rules:-

- 1) Stress minimisation during transporting and lairage - no mixing of strange cattle.
- 2) Low voltage stimulation.
- 3) Aitch bone hanging or Hip suspension of carcasses. (Tenderstretch)
- 4) Slow controlled cooling of carcasses 10 hours to 10 degrees Celsius.

These are not new and their effect on eating quality are not new, but the commitment from the retailer to require the meat they purchase to be handled in such a way is.

The same arguments as we hear in Australia went through the UK industry about these practices being too expensive and unworkable. Once the retailers required these processes, they were implemented efficiently.

The TASTE TESTING and monitoring of product was routine at all packing plants I visited, whether it was pork, beef or lamb. They all understand that taste testing is inexact but gives a good guide. It allows the plants to have a monitoring process in place so they know the reason and have rectified it before a complaint is received.

I was very impressed with two systems, :

- (a) Bowes of Norfolk - Pork Processors, Norfolk, and
- (b) Scots Beef - Bridge of Allan, Scotland

Bowes of Norfolk process 11,000 pigs per week with traceability and taste testing so they can monitor suppliers lines and feeding systems. This has already identified animals that don't eat as well. They are also investigating genetic lines with more intra-muscular fat for the highest value and best eating quality brands they supply.

Scots Beef supply Marks & Spencer, and Sainsburys. They have all their suppliers (farmers) audited by their own auditors. These farmers are grouped together in Producer Clubs and given preferred supplier status. The data collected about each farm is comprehensive and includes whether a finisher/breeder, cattle numbers of cows, bulls, steers, breeds and crosses, finishing regime, types of concentrates used and suppliers, forages used (e.g. silage, hay, straw), housing management, and BSE status.

Pre BSE, Scots Beef sourced 80% of slaughter animals from auction marts and 20% direct. Now 80% of kill is direct and 20% from auction marts, and that is going into different supply chains.

Scots Beef has been Taste Testing since 1991 to supply the Marks & Spencer "St Michael", "Aberdeen Angus" and "Traditional" brands. They rank Angus as the best eating with Limousin and Charolais as acceptable and the Simmental as unacceptable.

With traceability, they can trace primals through to the retail shelf and processed meat (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 seem 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.

<u>National Beef Audit</u>	<i>Red Angus Breed</i>	<i>Teague Yard</i>
PRIME	1.3%	42%
CHOICE	47%	65%
SELECT	46%	30%
STANDARD	5%	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 (*see page 6*).

### **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 rigor 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 producers.
  - = 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.

SELECT

SELECT

Actual bull measurements

Extra pedigree information.

The **Less Favourable** value is to the left, the **Breed average** in the center and the **More Favourable** value to the right. However it is never that simple. Improving most traits tends to cause negative side effects. It is important to take a **Balanced** approach considering all traits, your herds current status, target market specifications and cow herd efficiency when making selections. eg. see Fat comment below

**EBVs are estimates only.** The width of the diamond represents the accuracy or possible change in the EBV (how confident Breedplan is in the EBV).

Desirable **Fat** depth is dependant on market specifications. More fat can be beneficial for finishing stock at a young age and for cow fertility. Less Fat may be desirable for finishing cattle at an older age.

**BREED RANGE**  
These graphs represent the range of values for all Angus animals born in 1997.


For **Birth wt** lower values are to the right (more favourable?).

**Growth EBVs** tend to have narrow diamonds (higher accuracy's) because there is more information and the traits are highly heritable.

**Milk EBV** has a wide diamond (lower accuracy) because the trait is less heritable and there is less information (cant measure directly)

**Carcase Wt. and Intra-Muscular Fat** are both new EBVs for this year. All Carcase EBVs are now related back to a 300 kg Carcase not to a specific age as in the past.

Specific comments on this Bull

Lot 20		MURROA S336				
ID:	S336	Sire: TE MANIA NEWFIELD N159 TE MANIA KELP TE MANIA JAPARA F119 6+ HORIZON TE MANIA DANDLOO G171 TE MANIA DANDLOO E143				
Born:	16-Sep-97	Dam: MURROA P278 P S HIGH POCKETS (USA) TE MANIA KIRK TE MANIA MOONGARRA E37 TE MANIA ECLIPSE E168 MURROA 181				
Frame Score:	4.8					
Scrotal Circ (cm):	38.5					
Serving Capacity:	9VH					
		Breed Range ← Less Favourable    Breed Average    More Favourable →				
Birth Wt (kg)	+4.3 77%	+8.7	+6.2	+3.7	+1.2	-1.3
200 Day Growth (kg)	+25 71%	0.0	+12.0	+24.0	+36.0	+48.0
400 Day Growth (kg)	+51 70%	+5.0	+25.0	+45.0	+65.0	+85.0
600 Day Growth (kg)	+68 66%	+11.0	+35.0	+59.0	+83.0	+107.0
Milk (kg)	+10 48%	-8.0	-1.0	+6.0	+13.0	+20.0
Scrotal Size (cm)	+2.7 50%	-2.3	-0.8	+0.7	+2.2	+3.7
Carcase Wt (kg)	+31.0 57%	+2.0	+14.0	+26.0	+38.0	+50.0
Eye Muscle Area (sq.cm)	+0.1 42%	-4.6	-2.1	+0.4	+2.9	+5.4
Rib Fat (mm)	-0.1 42%	-2.0	-1.0	0.0	+1.0	+2.0
Rump Fat (mm)	0.0 42%	-3.1	-1.6	-0.1	+1.4	+2.9
Intra-Muscular Fat %	NA 0%	-1.0	-0.5	0.0	+0.5	+1.0
0						

Purchaser \_\_\_\_\_ Price \_\_\_\_\_

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 in 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 the 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 i.e. 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 falter. 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.

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