A Nuffield Farming Scholarships Trust Report

Award sponsored by

Alan and Anne Beckett

To explore ways to restore confidence in, and increase consumption of

Beef in the UK

Pauline Adams Harkin

First published: October 1999
Reprinted : June 2019

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"Leading positive change in agriculture. Inspiring passion and potential in people."

Title	To explore ways to restore confidence in, and increase consumption of Beef in the UK
Scholar	Pauline Adams Harkin
Sponsor	Alan and Anne Beckett
Objectives of Study Tour	1. To find out why consumption of beef is so much higher in New Zealand and Australia than in Britain. 2. Assuming the reputation for good eating quality in these countries is true, to find out why, and what factors affect eating quality. 3. To visit a third world country which is looking to increase its export quota to Britain. Is their standard high enough, or will this beef further decrease consumers' confidence? 4. To explore practical ways in which to increase consumption of beef in the UK using the knowledge gained from other countries. 5. To take my Sponsors' advice (Alan and Anne Beckett) which was to travel with an open mind, never eat alone and investigate every opportunity
Countries Visited	Australia, New Zealand and Zimbabwe
Messages	With consumption of beef in the UK at a very low point it was my mission (in 1999) to find out why, and whether it was because of the BSE crisis or whether there was an underlying problem. Many surveys were carried out with our customers - the consumers – and I was really surprised at the response. The lack of desire to eat beef was nothing to do with BSE or expense but mainly due to eating quality and consumers' lack of confidence in what they were buying. My knowledge gained in New Zealand and Australia where eating quality and consistency is their top priority was pivotal to how I was subsequently able to approach the leaders of the beef industry in the UK with the aim of improving eating quality and therefore increasing consumption.

Author's comment concerning this reprinted version of original report

This report was originally written in 1999, 20 years ago. My Nuffield Farming Scholarship was then, and remains to this day, a pivotal time in my life and understanding of the beef industry.

With eating quality and increasing consumption as my main mission, and armed with the knowledge I had gained from my Nuffield Farming travels, I was able to meet with the main supermarket buyers and directors of processing plants in the UK to discuss eating quality and how to improve consumer confidence. I was met with very little enthusiasm as it wasn't deemed necessary, and 'fast in and out' was the main objective for cash flow purposes. I left the meetings feeling somewhat deflated and frustrated with their lack of forward vision.

Consumers were encouraged to buy 'Fresh beef' - bright red was supposed to be best and whilst consumers were driving the market there was no need for the processors to change their ways.

It was clear that we had to change the consumer mindset at the same time as that of the supermarket buyers. With the help of the National Beef Association - where I became a director - and of various consumer groups, the message went out loud and clear in various press releases and open days. Twenty years on and I am delighted to report that, now, all major supermarkets supply 'matured' beef or '21-day beef' and consumption is up by 28% with the amount per capita being 18.5 Kg as compared to 14.4 Kg in 1999. This is despite the growth of veganism. The MLC, who got a fair amount of criticism in my report, has now been replaced by AHDB (Agricultural and Horticultural Development Board) where the levies seem to be far more transparently spent and a much larger percentage is now going to eating quality and product development rather than smart buildings and expensive marketing.

Revisiting my report written twenty years ago and now researching what is happening today has been a very positive experience for me. Too often it appears that change and progress in the agricultural Industry is excruciatingly slow or will never happen. Could I really make a difference? I asked myself many times. This exercise has shown that with the Nuffield Farming badge and support, stubborn persistence and a certain amount of footwork, positive changes **can** be made. To the Nuffield Farming Scholarships Trust and the Beckett Scholarship I am eternally grateful for this opportunity without whom this progress would never have happened.

I have been delighted that the findings appear to have been of interest - and, even better, of use - to others with a similar interest in improving the beef industry.

This reprinted and updated version of my original report has come about because of continuing requests for the original document and I hope you enjoy reading it.

Pauline Adams Harkin
June 2019

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DISCLAIMER

The report reflects my own views and the views of my interviewees, and are not necessarily those of the Nuffield Farming Scholarships Trust

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Note: from this point onwards this document is the report as first written by Pauline Adams in 1999

1. Introduction

I have been heavily involved in the beef industry since 1982. We bought our first pedigree Belgian Blues in 1983 and, with the help of embryo transfer, we now have a female base of over 100 cows. We also run a commercial herd of 590 suckler cows and over-wintered over 1,000 head last winter. For the past few years I have also run a separate calf rearing business, contract rearing 800 calves per year.

I am past Chairman and President of the Belgian Blue Society and am now Vice President of the International Society. It is within this capacity that I have already had an insight into the beef industry in parts of America and Canada.

On my return from my award I was appointed Chairman of the recently formed National Beef Association Breed Societies Council and have a place on the Executive Council. I strongly believe that now, more than ever, it is essential to have an independent body fighting just for the beef industry.

Figure 1: The author, Pauline Adams Harkin, pictured with one of her hunters

It is thanks to my Nuffield Farming Scholarship that I have recently formed a new company called Velvet Energy UK Limited. Whilst I was in New Zealand I heard on the car radio some fairly astonishing results about the benefits of taking Deer Velvet as an overall health tonic. As my award was the Alan and Anne Beckett Award for an Entrepreneur or Innovator I felt I owed it to them to investigate the matter further. Further research on demand has been very encouraging and I am the first person to get an import licence to bring the product into the UK the launch of which will be in June 1999.

2. Background to my study subject

At the time of my award (1997) it was becoming increasingly obvious that my husband and I were working harder with more cattle but making less money than ever before. We had a cost-effective production system and were breeding what we believed to be the right type of commercial animal for today's market. We had 700 acres committed to grassland and wanted to continue doing what we believed we are good at, on land which is ideal for growing beef.

Were we being foolishly optimistic? BSE has been blamed for the downturn in consumers' confidence with the obvious fall in consumption. However, statistics show a downward trend in consumption since 1980 with Britain showing the lowest consumption figures of any first world country. Why?

I needed to find out the answers to these questions so that we could seriously consider our options.

2a. Investigative plan

To visit Australia, New Zealand and Zimbabwe:

> **Australia and New Zealand** because they are known to produce quality beef, have a very high consumption figure per capita and have to work within very tight margins.
>
> **Zimbabwe** because they are looking to increase their export quota to the UK and there was some concern about the effect Zimbabwean beef could have on the market with particular regard to consumer confidence.

On my return I would then concentrate on the **British beef industry** with particular regard to processing and eating quality so that I could make direct comparisons, thereby making what I had learnt on my travels more relevant.

3. Australia

Australia has 51,000 beef producers with 202 abattoirs. The domestic consumption is 40-45 kilos per head per year as compared to 14.5 kgs per head in the UK. However, the consumption rate has remained stagnant over the past few years.

The beef industry relies heavily on the export market but the quality of Australian beef is not perceived to be any better than that of USA beef (their main competitors); therefore there is a decline in Australia's market share to Japan and Korea. To correct this decline both on the domestic and the export front the Meat Research Corporation instigated an Eating Quality Standards scheme, also called the Meat Standards of Australia scheme (SA), as the important of identifying the eating quality of the product was more than evident.

3a. Background to the Australian Beef Eating Quality Assurance Scheme – "The star system"

This was instigated in December 1997 by the Meat Research Corporation. This is similar to the Meat and Livestock Commission in the UK. A summary of their findings is as follows:

- **The industry does not identify the eating quality of its product.**

  Failure to adequately identify and guarantee the performance of the product is an important factor in the decline in domestic beef production.

  If eating quality is not known then consumers will discount the product to reflect the risk of it failing to meet expectations.

- **Easting quality is about tenderness, flavour and juiciness**

  Inconsistency in tenderness is a major problem for beef and visual appeal and price can both be poor indicators of eating quality.

- **Identifying and guaranteeing product performance requires an eating quality standards (EQS) scheme**

  An eating quality standards scheme has been developed to:

  - Describe and differentiate the eating qualities of different types of beef, and
  - Ensure the descriptions are credible.

- **Consumer research suggests that guaranteeing eating quality will lead to higher consumption at higher price levels.**

  Consumer propensity to repeat purchase is heavily influenced by eating performance. Consumers lack confidence in their ability to select beef that will satisfy their expectations of

eating performance. Describing eating quality will allow consumers to make appropriate price and/or quality trade-offs to suit their requirements.

- **The scheme will raise production efficiency on farm**

  By delivering clear market signals along the supply chain – different prices to producers for different quality standards of beef – the scheme will allow producers to better target their production decisions. However, this system should not be the 'target' for all producers. Commercial returns will depend on individual production systems; with live cattle exports and ground beef products, for example, remaining the best option for some.

- **Guaranteeing eating quality**

  To guarantee the eating quality of beef the Meat Standards of Australia (MSA) must:

  - Be able to measure palatability with confidence
  - Determine the factors that impact on palatability and put in place quality assurance at critical control points
  - Ensure the system works and
  - Maintain the integrity of the MSA scheme.

3b. How the scheme works

MSA-branded beef is classified as 3, 4 or 5 star.

3-star – good quality beef for everyday meals

4-star – succulent tender beef for the special dish

5-star – first class gourmet, full flavoured beef

3b.i. At retail level

The Meat Standards of Australia believe that MSA at retail provides consumers with confidence in the beef they purchase by:

The MSA logo providing an overall quality guarantee

The 3, 4 or 5 star rating providing the quality grade

The cooking symbol providing the recommended cooking method, and

The retailer providing a money-back guarantee if the consumer is not satisfied.

Taste and perception will vary between individuals. MSA has established the different tenderness levels to satisfy a known average – that was based on extensive taste tests with more than 20,000 consumers.

3.b.ii. Producer to abattoir requirements – across all cattle production systems

3-star requirements:

- Direct consignment to abattoir
- Slaughter by the day after dispatch
- Traceback requirements are mandatory
- Water available and consumer on arrival
- Animal welfare codes of practice observed at all stages from farm to slaughter
- Trained, professional stock handlers at all locations
- Guidelines for dark cutting and eating quality observed
- Groups of cattle not to be mixed in lairage
- No secondary sexual characteristics
- Cattle to be below 30 months of age
- Average whole life daily weight gain of 0.6 kg or above, determined by carcase weight and maturity
- Ultimate pH of 5.70 or less
- Slaughter process to maintain a temperature and pH relationship within the 'window' of:
    - pH above 6.0 when temperature is at or below 12C
    - pH below 6.0 when temperature is at or below 12C
- minimum of 5 mm depth of rib fat
- meat colour scores of 1b-2
- meat texture scores of 3 or better

The 3-star carcasses are then hung for a minimum of 4-14 days and tender-stretched (hung by 'h' bones). The time the carcasses are hung would depend on what percentage of Bos Indicus the cattle have. The higher the percentage of Bos Indicus the longer the aging time as these cattle are known to be somewhat tough. This of course is not a problem which we would come across in the UK.

4-star requirements

- As for 3-star. Additionally:
- Must be hung for a minimum of 14=21 days
- Must not have any more than 26% Bos Indicus
- **Must have a marble score of 1 or more**

5-star requirements

- As for 3-star. Additionally:
- Must be hung for a minimum or 21 days
- Must not have any more than 26% Bos Indicus
- Must have a marble score of 3 or more

3c. Benefits of the eating quality standards scheme

- **To the Consumer**

  The customers' response has been extremely positive. The feedback is one of great satisfaction in that they now have the confidence to buy a quality product which they can trust. They are prepared to pay more than 3 times more for the 5-star product than the unbranded product. The consumers' confidence is such that consumption has gone up by 11% since the scheme began.

- **To the Retailer**

  As at the end of October 1998 the number and scope of participants reflects a very strong commitment by all sections of the industry to the MSA program. Many food service outlets, retails butchers, supermarket chains and wholesalers had registered and the scheme is going to be extended to the East coast.

- **To the Producer**

  Producers have benefited through:

  - Higher prices for cattle that meet customer requirements
  - Increased sales
  - Lower unit costs of production, and
  - Offsetting this will be the cost of licensing/accreditation and meeting quality standards requirements

- **To the Processor**

  Processors will benefit through higher prices and increased output

  Cost benefit analysis – based on assumptions of price premiums, increased sales, efficiency gains on farms, scheme operating costs and uptake – suggests the following:

  - The Eating Quality Scheme for the domestic market will yield, over the period 1997-2010, a net present value of gross benefits to producers and processors of $1,726.5 million for a benefit/cost ratio of 13
  - The scheme for both the domestic and export markets could result in gross benefits of $3,619 million for a benefit/cost ratio of 26.

3d. Comment on Australia

I was particularly impressed with this scheme and especially the enthusiastic response from the consumers. The main problem with the UK beef industry from a consumer's point of view is the lack of confidence when buying beef because of the variable quality. As consumer research has shown that guaranteeing eating quality leads to higher consumption at higher price levels, I would very much recommend that a similar scheme is given some serious thought in the UK. In view of our falling consumption rate and low prices we cannot afford to ignore it.

Whilst I recognise the fact that UK producers and consumers are different from our Australian counterpart, nevertheless there is a lot of common ground.

However, one of the differences is that the Australian beef industry has a percentage of Bos Indicus cattle. These have the advantage of being very hardy but can be fairly tough to eat. The MSA is redressing this problem with the branded beef by only allowing cattle with less than 26% of Bos Indicus influence into the scheme. Politically this has been a 'hot potato' because of the staunch pedigree breeders of these cattle who believe that they are being discriminated against. There are always going to be problems when individuals lose sight of the end goal and allow their own hidden agendas to cloud the issue.

To run this scheme successfully it is essential to keep your eye on the ball – not lose sight of the objective with absolutely no compromise on the high standards set.

4. New Zealand

During my visit, New Zealand, like Australia, was suffering the worst drought conditions for many years. With almost compete reliance on grazing this was having an understandably adverse effect on grass-fed beef. A poor economy and dependence on world market prices compounded the problem.

However, their marketing of beef was particularly impressive. The New Zealand Meat Board targets schools and highlights the importance of red meat in a young person's diet. The theme was: IRON: THE BODY's GOLD.

They also ran a very successful advertising campaign on television particularly for men emphasising how easy beef is to cook – even a MAN can cook it!! (*Editor's note: remember this was researched in 1998. Equality legislation would almost certainly take issue with this theme in 2018!)* Emphasis was also placed on the fact that contrary to popular belief, beef is the ultimate convenience food with a steak being quick and easy to cook.

A private company has been running a TENDERNESS GUARANTEED OR YOUR MONEY BACK scheme. This has been so successful that the Meat Board has just launched a similar one. The company running this scheme paid particular attention to ensuring that the product matched expectations. Attention was paid to detail particularly within the processing side where a high level of importance was given to low pH levels, slow chilling methods and long hanging times, with the aim being to increase flavour and tenderness, therefore ensuring the customer would come back for more.

Vacuum-packed beef is also quite common with the consumer being educated by leaflets given out in the supermarkets stating that the longer the beef is kept in the bag the more tender the product will be (up to 8 weeks).

The leaflets also explain that the darkness of colour is not a bad reflection of eating quality: indeed, quite the reverse. This is an educational point which I would love to see taken up in our own supermarkets. The UK customer has been brainwashed into thinking that bright red meat with very little fat is what should be selected from the shelves. This often leads to disappointment when eaten.

The effect of this increased awareness and improved eating quality has been to boost consumption rates by an astonishing 11% over the past 5 years.

4a. The pH factor

The second thing that particularly impressed me apart from their clever marketing was the finishers' awareness of the pH factor. Every stock farmer was educated by a series of leaflets and seminars on the importance of keeping stress to an absolute minimum and the adverse effect that a high stress level/high pH factor could have on the ultimate eating quality of their animals. Farmers were advised on the best handling and loading facilities before sending animals to slaughter. Abattoirs were also well aware of the importance of keeping stress to an absolute minimum.

4b. Comment

I found the New Zealand Meat Board's effort to involve the farmer in the finished product by making them more knowledgeable about the direct effect of a high pH factor rather refreshing and in direct contrast to our own.

Loading up cattle for market or for the abattoir can, from my own experience, be a very stressful experience where time is of the essence and handling facilities are inadequate. Tempers get frayed and sticks or electric prodders are not uncommon.

The same scenario was also much in evidence in the UK abattoirs where mixing of cattle, loud noises, music, electric prodders, re-tagging, moving cattle from light to dark pens, no strawed resting area, and general rush and hullabaloo with very little appreciation of the animals' stress levels, all contributed to high pH factors leading to tougher meat. With no feedback between processor, producer and consumer this is a situation which is likely to continue as there is no incentive to be any different.

It was once again quite evident that improved eating quality increased consumption.

I was surprised about the continued use of hormones, however. New Zealand has a 'clean green image' which could be used as a unique selling point when competing against Australia and America. If the use of hormones was banned they could perhaps capitalise on this 'healthy' image – as perhaps we should also do in the UK. I am sure the British consumer would not be so keen to eat imported beef if they realised the likelihood of its containing hormones.

5. Zimbabwe

Zimbabwe is looking to increase its exports to the UK. It had suffered a serious drought in 1991/92 when a million cattle had to be destroyed. The numbers are just recovering to 530,000 commercial females. Communal farmers have 4-5 million cattle. The communal cattle are treated in the same way as an investment and allowed to accumulate with females only calving down once every 2-3 years.

Editor's note: please bear in mind that this report was written in 1999 before Robert Mugabe wrought savage changes.

5a. Export

Ten per cent of the beef produced is exported to Europe under a quota granted by the Lome convention. The quota allows for 9100 tons of de-boned beef but in 1997 only 730 tons were actually sent owing to poor prices to farmers, BSE, and not being able to market the forequarters. Thirty per cent of the hindquarters go for export.

5b. Prices

The Zimbabwean dollar crashed by 60% in November 1997 by 60%: consequently beef prices were down, although not drastically as the home prices are set by the export price. They are however set to decrease further because of the bad maize harvest due to lack of rain at the right time. During my time there (March 1998) the price of fat cattle was about half of ours (38-45p/kg) and for good quality stores around 50p/kg. However, (before the disastrous maize harvest) their feed costs were also about half of ours. Stock theft had become a lucrative tax-free growth industry. In 1996, 10,220 cattle valued at approximately $21,631,382 were stolen and in 1997 the industry lost 10,117 cattle. With a very low recovery rate this was yet another problem that seemed insurmountable.

5c. The future

The future is unsettled because of the political environment. President Mugabe has been in power for 18 years without an effective opposition. At the last election in March 1996 less than a third of the electorate bothered to vote. Riots against food prices and general corruption within the government were becoming commonplace. This unhealthy situation has led to an inflation rate of at least 40% and a lending rate of 60%. With 90% of those growing tobacco (the main crop in Zimbabwe value-wise) needing to borrow money to grow the crop this puts a huge strain on the farm income. Land designation has been introduced by the government to appease disenchanted voters with 1500 farms on 'the list'. White farmers are now faced with the possibility of losing their farms with very little compensation – this has further impacted the economy with there being no confidence in the future, and therefore no investment. This unstable outcome has led to foreign assets being withdrawn and any savings being redirected to offshore banks, further inhibiting capital growth.

5d. Chinhoyi Cold Storage Company for export

I visited the plant in March 1998 when they were killing 500 a day. The animals must come from the right catchment area vis a vis Foot and Mouth. On arrival all cattle are rested for a minimum of 12 hours regardless of their travelling time. Enormous emphasis is put on decreasing stress, and the replenishing of lost glycogen and the restoration of the levels of lactic acid is considered to be of particular importance to the tenderness and subsequent eating quality of the beef.

5d.i. Grading

There are four grades: 1. Super 2. Choice 3. Premium 4. Economy

Cattle are graded by measuring the length x weight of the carcase. The length is measured from the 5th vertebrae to the hook bone. This information is then computerised and the grade is shown. 15mm is the acceptable amount maximum fat cover for Super class.

An example of what might be stamped on the carcase is:

6	Age = 6 tooth
B	Fleshing (A-E)
3	Fat cover (1-9)
S	The Grade (Super, Choice, Premium, Economy)

5d.ii. Chilling

It is considered crucial to get the drop of temperature correct. This is critical as, if a carcase is chilled too rapidly, the muscle fibres shorten causing toughening of the meat, and if not chilled sufficiently enough bacteria can develop.

> 0-24 hours. The temperature should go from 39.5C to 15-11C depending on the size of the carcase. The temperature of the storage hall is maintained at 4C.
>
> 24-48 hours. The carcase should gradually come down to a temperature of 0-3C

When the beef has reached the right temperature it is then deboned, sorted out according to weights and grades, and vacuum packed.

Every part of the carcase is used – the dried blood and bones including spinal column is used for bone meal which then goes into poultry food. Poultry litter is used as a source of protein in cattle food.

5d.iii. Marketing

There did not appear to be a separate marketing arm. It was left to the cold storage plant to carry out any promotional work. The marketing was very non-aggressive and, as the whole of the domestic price depended on the export price, this was slightly worrying. Being government-run, it just didn't seem to matter enough.

5e. Comment

I visited this export plant in Chinhoyi expecting the worst after the horror stories I had heard in the UK about African beef – however I was pleasantly surprised. The welfare, traceability and quality of the cattle was surprisingly high. I was sorry to hear of their recent financial problems. As I was also to find out on my return to the UK, their attention to detail on the processing side with regard to eating quality was far superior to our own. (*Editor's note: written in 1999*).

It seemed to me that the most important criteria in running a business in Zimbabwe was 'man management'. I visited one mixed farm where there were more than 1,000 families employed. It was like a complete village with shops, a hospital, a school and community workers. People are the cheapest commodity and are paid a basic wage of approximately £1 per week. Mutual respect between the employer and employees was of paramount importance, and various incentive schemes to encourage the 'brighter' individual were practised. With such a huge workforce, and complete reliance on them to get the crops in etc., it was noticeably vital to keep everyone 'sweet', particularly since the balance of power has now gone to the black man with the whites being at the bottom of the pecking order. However, it was interesting to note that in times of stress, for instance when the wife was having a baby, it was always the white boss who would be woken up in the middle of the night, even though there would be midwives available in the village!

Zimbabwe and its people left a huge impression on me – one that will stay with me forever. I have nothing but enormous respect for the Zimbabwean farmer and was tremendously humbled by their camaraderie and ability to laugh in the face of adversity. The problems in the UK seem insignificant in comparison.

6. Relevant points from each country visited

6a. Australia

- The 5-star branding system based on EATING QUALITY. This was easy for the consumer to understand as it was all under one umbrella.
- The Meat Board's recognition of the importance of improving eating quality and therefore increasing consumption.

6b. New Zealand

- Astute marketing, targeting children and single males.
- The awareness of the pH factor and how this affects eating quality. Farmers were very knowledgeable about minimising stress before slaughter – there was a certain amount of responsibility towards the final product.
- "Tenderness Guaranteed or your money back". These processors could guarantee 95% satisfaction.

6c. Zimbabwe

- African beef should not be dismissed as inferior to our own.
- The importance of man management and working together should not be underestimated.

7. Conclusions in answer to my original Objectives

Objective	Conclusion
Why is consumption of beef so much higher in New Zealand and Australia than in the UK?	• The outdoor lifestyle with barbecues being a common occurrence would be a factor. • Beef is cheaper by approximately one third in relation to the average wage. However, it was interesting to note that the 5- and 4-star beef was very much in demand and cost 3 times more than the standard, which proves that money is not the only issue provided the eating quality could be guaranteed. • The beef consistently tasted good and could be relied on to give culinary satisfaction. • The customer tended to have closer links with agriculture and understood what to look for when buying beef.
Why is the eating quality of beef recognised as being superior in these countries, and what factors affect eating quality?	The one main reason why eating quality is superior to that of our own is that more attention is paid to detail during pre and post slaughter. The factors affecting eating quality are many and varied and will be mentioned in more detail later on. However, these were found to be the main ones: **Pre Slaughter** • Nutrition • Supplement feeding of Vitamin E and E • Stress • Age • Breed • Sex • Carcase classification **Post Slaughter** • Electric stimulation • pH levels • Chilling times • Temperature • Conditioning (hanging time) • Sheer testing • Hip bone suspension • Seam cutting
To visit a third world country which is looking to increase its export quota to Britain.	I was genuinely impressed by the conditions within the Export plats in Zimbabwe and the quality of the cattle. It was also quite evident that attention was paid to detail in regard to eating quality. Full traceability, however, may be a problem but, as I was to find on my return to Britain, this did not seem to rate as very important to the consumer and would therefore not affect consumers' confidence.

Based on the above findings I now turned my attention to seeing how confidence and consumption could be improved in the UK.

8. The UK Beef Industry

8a. Statistical outline (as of 1999)

- About 50% of beef is sold fresh through retailers
- About 25% is sold in processed form. This includes pies, tinned beef, but mainly beef burgers (Macdonalds etc).
- About 25% is sold through catering outlets. These vary from prisons to 5-star hotels. A large proportion of this is imported.
- It is estimated that around 210,000 tonnes of imported beef will be delivered to Britain this year – which is the equivalent of 24% of all beef eaten. Less of this is being retailed as fresh beef because the supermarkets are at present (March 1999) buying more British beef. Much of what comes in from the Continent is burger beef from Holstein bulls. The discounted chilled/frozen beef coming in from Africa, America and Australia is good quality and is almost invariably picked up by hotels. The really cheap imports at the lower end of the market are used by the Services, prisons and schools – mainly because the catering managers find the low price attractive.
- In the fresh retail sector the supermarkets account for 70% of the beef sold and butchers (who are fast declining) about 21%. The rest is served up in the Co-op, Marks and Spencers, etc.
- The UK market is overshadowed by 90,000 tonnes of intervention beef. This can only be sold in the UK and has to be cleared at some stage. At EU level overall stocks are 500,000 tonnes. However intervention purchases have all but ceased (apart form the Irish Republic) so overall stock movement will be down.
- Around 50% of beef produced in the UK is from the suckler herd. In the EU the only other significant areas of suckler operation are Ireland and to a much lesser extent France. In Germany and the Netherlands output is almost Holstein bulls.

On my return to Britain (in 1999) I was keen to find out why our consumption figures were so low and why beef had gone from 33% of the market share in 1980 to 20% now.

To find out the answers to my questions I visited a number of abattoirs, both in England and Scotland, Supermarket buyers, Auctioneers, Members of the relevant groups with the NFU, The National Beef Association, Bristol University (meat science), and the MLC. From them I learnt about future beef strategy, product development, meat technology, marketing and export.

I also carried out my own consumer research.

What are the reasons why consumption of beef is dropping?
I detail these in the next chapter.

9. Why is consumption of beef dropping?

9a. Social reasons for falling consumption

1. 75% of women between the ages of 25-55 are in the workplace
2. Less free time out of work
3. More single families, therefore more single males
4. **Social reasons for eating together have diminished**
5. **Health and food safety concerns**
6. **An increase in vegetarianism in younger generation**
7. **Ready meals up by 5% from 1991-97**
8. **Lack of confidence in cooking ability**
9. **Lack of confidence in the consistency of the product**
10. **Beef considered too expensive as compared to chicken and pork.**

It is important to accept that not much can be done about the change in people's lifestyles (reasons 1-4 above). However, I found it particularly galling to hear the same tired reasons from certain people within our industry who had spent a lot of producers' money on market research and had obviously decided that these were the only reasons, and were negative about doing anything further to improve the situation. Reasons 5-10 above should, I strongly believe, be concentrated on and I amplify them below.

9b. Health and safety concerns with eating beef

In the wake of BSE I fully expected 'Safety' to be the main reason for people's reluctance to eat beef. However I was surprised to find this was very low on the priority list. Whilst the government's mishandling of the crisis seriously dented consumers' confidence at the time, the public is now reassured to a large extent that British beef is safe. The safety measures put in place by MAFF and the advertising campaign by the MLC has helped to restore consumers' confidence from the safety angle.

It remains to be seen whether E.coli, salmonella, or tuberculosis will pose a problem. There may be a place for total decontamination of the carcase as practised in parts of America. There is still the belief that red meat is not good for health. I would like to see the same marketing as the New Zealanders adopt, targeting school children and emphasising the vital importance of iron (IRON – THE BODY'S GOLD). Also, the misconception that beef has more cholesterol – this has been proven not to be true. A trimmed steak contains the same amount of cholesterol as chicken. The industry should be advertising this fact.

9c. Increase in vegetarianism

According to MLC figures this increase is fairly slight, and mainly amongst the younger generation, who tend to become meat eaters again once married. However, this should not be a reason to rest on our laurels. The Vegetarian Society should be monitored very closely, and it would be helpful if

when they visit schools, it could be counter attacked by some friendly volunteer farmers' wives to give the other side of the story (as they do in New Zealand). I would also like to see teacher training colleges better informed about the importance of meat in young peoples' diets, and the fact that pubescent vegetarian girls are likely to have serious anaemia problems unless they have a well balanced diet containing red meat.

Farmers also have an important part to play here by ensuring their welfare practices are beyond criticism, thereby easing the conscience of would-be vegetarians.

9d. Increase in ready meals

There has been a 55% rise in the demand for ready meals and convenience foods in the past 4 years. The average 'cook' does not want to spend more than 12 minutes preparing the evening meal. This 'negative' fact should be used to our advantage. What could be more convenient than a steak? Also it has been found that there are muscles within the forequarters which are ideal for microwaveable meals – boil in the bag steaks, etc. Indeed, during the BSE crisis when there was a glut of forequarter meat new ready meals were tried using beef and were a huge success. Sadly this has been discontinued. Surely, if the forequarters had more value, then the prime cuts would not be so expensive, thereby increasing consumption both ways: creating more demand which should then have a beneficial knock-on effect for the producer. I could not understand the general reluctance of the beef industry as a whole to explore his obvious avenue.

9e. Lack of confidence in cooking ability

In my opinion this is the main reason why consumption is continuing to decline. The UK produces some of the finest quality cattle under the best management conditions – sadly this quality does not seem to follow through onto the plate. My consumer research showed that 8 out of 10 potential beef buyers would **not** be confident about cooking beef for an important dinner party because of the risk of it not coming up to expectation and therefore causing embarrassment.

The consumers' main requirement is tenderness and tastiness.

The 2 out of 10 consumers who would use beef had a local butcher whom they trusted. The main complaint from general beef eaters was that the beef was never the same twice even if bought from the same place. "*Buying good beef is like taking part in the lottery – you are generally disappointed*". This was the common theme.

The consumers' main requirement is tenderness and tastiness.

9f. Beef considered too expensive as compared to chicken and pork

There is no doubt that beef will always be more expensive to produce in the UK. Because of BSE, strong controls will always be needed thus adding to the expense. Over-wintering cattle is also

expensive and we will never be able to compete on a cost basis with Argentina or Australia. However, consumers have shown a readiness to pay more if they can be sure the product will give satisfaction.

This once again brings me back to the importance of having a universally understood branding system before cheaper imports come onto the shelves. The domestic consumer would like to buy British but will only do so if the quality on the plate comes up to expectations. It is vital to be one step ahead before it is too late.

In the next chapter I discuss practical ways in which to improve the vitally important eating quality.

10. Practical ways in which to improve eating quality

10a. Pre-slaughter

10a.i. Nutrition

It is important for the animals to be on a rising plane of nutrition leading up to slaughter. Muscle protein in a growing animal is continually turned over, such that the rate of muscle growth is dependent on the balance between the amount of protein made and the amount of protein broken down. There is enough evidence to suggest that animals with a higher growth rate give more tender meat. However, it is detrimental to the eating quality if the animal has had too much compensatory growth and therefore gains weight very rapidly. The optimum weight gain per day is 075 Kg. The diet can also affect flavour. As a rule the UK consumer prefers the taste of grass-fed beef, whereas the US consumer prefers the flavour of grain-finished beef. I have also been told by experienced feeders that the bland flavour of barley-fed bulls can be improved by adding sugar beet fodder as it sweetens the otherwise rather tasteless meat.

Evidence would suggest that continuous growing grass-finished animals are ideal for the consumer but in times of drought when grass is short the cattle should have supplementary feeding and not be sold when they are losing or working to maintain their weight with the subsequent breakdown of proteins leading to tough meat.

All other things being equal, carcasses at a similar age/degree of fatness will exhibit the same eating quality irrespective of whether they have been fed on grain or grass.

10a.i. Supplement feeding of Vitamin D and E

Vitamin D

During the 1960s calcium chloride was injected into the cattle pre-slaughter which was found to significantly increase tenderness. However, this has since not been viewed as welfare friendly and could also have the reverse effect of increasing the stress levels, therefore being counter productive. Muscles were then injected with calcium post slaughter which was also reasonably successful in tenderising meat but could sometimes leave an unacceptable 'salty' taste as well as being time consuming. Recently Oklahoma Beef industry council has finished trials on feeding vitamin D to feedlot cattle two weeks before slaughter. The results were very encouraging and found that blood calcium levels increased by 50% as a result of vitamin D supplementation. This also resulted in a 30% improvement in tenderness ratings compared to conventionally raised beef.

Vitamin D is relatively cheap and this opens all sorts of opportunities for improving the consistency of our beef.

Vitamin E

Research in this area has shown that feeding high levels of vitamin E to cattle can be effective in prolonging the bright red colour of beef and also in delaying the development of off-flavours. Vitamin E is a fat-soluble vitamin with antioxidant properties. After absorption from the intestinal tract, it is incorporated into muscle membranes and this helps to delay the chain of reactions which result in

rancidity and the formation of brown discolouring. Initial research (Bristol University) was conducted with concentrate-fed cattle. Animals were fed 2500 mg per day for 04 days. Steaks, packed in 70% oxygen and 30% carbon dioxide, remained bright red for 21 days whilst steaks from untreated steers were discoloured after 9 days. As a result of vitamin E supplementation to feedlot cattle meat discarded at retail level was lowered by approximately 40%: an enormous saving for the beef industry.

10a.ii. Stress

There is absolutely no doubt in my mind that stress in animals before slaughter is one of the main reasons why some meat is unaccountably tough. It is a well known fact that acute stress causes reduced muscle glycogen reserves and leads to dark cutting. Dark cutting will occur if the ultimate pH is above 6.0. However, a dark cutter can be spotted before getting to the retailer, so although it is an economic problem it doesn't necessarily affect consumers' confidence. What does, however, is the tough steak to which there does not appear to be an answer. I am convinced that stress pre-slaughter is one of the main factors for this and found it particularly frustrating how little attention some abattoirs in this country and the MLC paid to this problem. The MLC was particularly dismissive of this subject saying that there was no trial work to support this theory. They were right, there was **no** trial work, therefore no evidence either way. Work carried out in other countries would certainly support my theory, and just talking to people who had been in the meat trade all their lives very much supported the importance of minimising stress.

There is absolutely no doubt in my mind that stress in animals before slaughter is one of the main reasons why some meat is unaccountably tough.

As previously mentioned in Australia, New Zealand and Zimbabwe, particularly where tenderness was guaranteed, strong emphasis was placed on reducing stress pre-slaughter. Producers were very much aware of having correct cattle handling facilities to enable cattle to be loaded onto the lorry as calmly as possible. Overcrowding during transport was also kept to a minimum as it was recognised that overcrowding caused more stress and increased bruising (*Tarrant et al, 1988*). The recommended space allowance was 1.17m^2/head for hornless cattle of 600 kg. It was found that if the cattle had enough room to align themselves with the direction of travel they were far less stressed than tightly grouped cattle that could not turn around. Interestingly, it was also noted from a very experienced slaughter man that cattle that had travelled on the top deck of a double decker lorry were always much more stressed than cattle travelling on a single decked lorry.

On arrival at the abattoir (regardless of journey time) cattle were rested for a minimum of 12 hours in a bedded area with access to water to allow rehydration. It has been found that cattle rested for one day before slaughter had more tender meat than those rested for only a few hours (*Wythes et al 1988*).

The mixing of unfamiliar cattle prior to slaughter also increases the ultimate pH in the meat. (*Matzke et al)*. The resulting antagonistic behaviour directed at re-establishing dominance results in physical exertion and together with psychological stress depletes muscle glycogen, thereby producing tougher

meat. Experienced processors also commented on the effect a bulling heifer could have on the rest of the group, and reported poor quality meat from the whole group and not just the oestrus heifer.

On the way to slaughter the cattle would be fed quietly along a chute – curved races being preferred to a race that would appear to have a dead end. The use of rubber flaps on gates was not uncommon to keep the noise to a minimum. Loud music, overcrowding in pens, clashing gates, going from dark to light, shouting men, slippery floors and electric prodders were not in evidence. Cattle that had been exposed to an electrical prodder or had slipped on the way to be slaughtered had a much higher cortisol level (*Cockram & Corley 1991*). *Rearson et al 1977* also found the stress levels and subsequently the ultimate pH levels to be much low3er in small quieter abattoirs than large noisy ones. The need to keep the cattle as calm as possible is paramount. Sadly this does not seem to be the case in the majority of UK abattoirs.

Australian and New Zealand research showed that stress can induce dehydration leading to poor eating quality through reduced moisture holding capacity of meat, and that this could not be reversed by electrical stimulation or hanging.

In conclusion, it would appear that the UK falls way behind other countries in the recognition that stress can cause variable eating quality. It is obvious that more attention needs to be paid to this subject before we can even think about improving the consistency of our product and producing what the consumer requires.

10a.iii. Age

Since BSE, age is not now such an issue due to the fact that no animals over the age of 30 months can go into the food chain. It is fairly well recognised that the older the animal the more connective tissue it has, leading to tougher beef – although, provided the pH is low this can be reduced with longer hanging times. It is also the case that very young animals (less than 13 months) are likely to have paler meat, be more tender, but have less flavour.

10a.iv. Breed/sex

There has been a lot of discussion about this subject with some traditional beef producers/butchers blaming the continental crosses for the decrease in eating quality. I have looked at research both overseas and in the UK and can find very little evidence to support this theory, although the Brahman breed was found to be significantly tougher. The conclusion is that breed effect has been overstated compared with other factors.

Differences in tenderness occur between sires within a breed as well as between breeds. Rather surprisingly, particularly for the traditionalists, in a recent extensive eating trial comparing different breeds, the Belgian Blue and Piedmontese had significantly more tender topsides *(D. Homes et al 1997*) compared to Aberdeen Angus and Limousins. However, it must be stated that the level of fatness was the same within all the breeds which is an important point as it is well recognised that continental cattle are generally leaner which would also lead to drier beef. Generally steer beef is

more juicy than heifer beef and bulls tougher than castrated males particularly between 13-20 months. (*Boccard et al 1979).*

I feel it is important not to waste time on the 'breed war' as it is impractical to expect everyone to change to one breed, whatever the trial results might have been. It is clear, however, that the finished animal must have sufficient fat levels, and then some sort of consistency can be expected.

10a.v. Carcase classification

Consumers have always requested tender, flavoursome meat. But because of their concern about fat and cholesterol intake, they are now demanding meat and meat products which are low in fat. The important factor is: how much can fatness be reduced without having detrimental effects on the eating quality? There is a problem with what the consumer perceives is a good piece of beef to what will actually taste good after it has been cooked.

The important factor is: how much can fatness be reduced without having detrimental effects on the eating quality?

There is enough evidence to suggest that marbling is important for palatability. However, it accounts for only about 10-15% of the variation of eating quality (*M.E. Dikeman, 1987*). Cooking temperature also has a lot to do with how important marbling is, as the higher the end temperature, the more important it is to have marbling. Simply speaking, if beef is overcooked then it needs more intra muscular fat to keep it moist.

There is no doubt that the major role of fat in promoting tenderness is the insulating effect: this reduces the likelihood of cold shortening which leads to tough beef. The importance of finding the optimum fat level with consumer acceptance has been studied in great depth and the conclusion is that carcasses with less than 0.64 cm (0.25") of fat thickness were significantly tougher with lower flavour scores than carcasses with 0.64-2.54 cm of fat thickness. *(Dikeman et al 1979).* The optimum was found to be 0.74 cm where anything above this did not increase in palatability. Carcasses with 0.74 cm fat also had sufficient marbling to ensure excellent eating quality (*Dolezal et al 1982)* which would be perfect for the high class restaurant trade, whilst 0.64 cm fat would be ideal both for palatability and acceptable for the consumer at the retail end. In the UK this would convert to an ideal carcase being U4L-U4H, with U5L being ideal for high class restaurants.

The UK is disappointingly backward with their method of classifying carcasses with very little monetary incentive given to produce higher quality animals. In parts of Australia and America video scanning is used which shows the exact amount of saleable met. The producer is then paid accordingly. Probes are used to assess the amount of back fat and size of eye muscle. This method would stop unscrupulous processors in the UK from having very high dressing-out requirements and subsequently gaining between 5-10% of saleable meat for which they do not pay the producer.

10b. Post slaughter

10b.i. Stunning/bleeding

After stunning, the animal should be bled immediately (10-15 seconds maximum) before the heart stops beating, to ensure a clean 'bleed', thereby preventing blood being retained in the muscle.

10b.ii. Electrical stimulation

It has been found that high voltage electrical stimulation of beef carcasses soon after death has a tenderising effect as it accelerates the fall of pH and the onset of rigor in the muscles. This has been attributed to the release of catheptic enzymes during the vigorous muscle contractions it produces. However, it is only beneficial if done under conditions of slow cooling (8 hours at 16C and then storage in still air at 1C), and if the pH is already at an acceptably low level (below 5.8). If the pH is already high it can make the beef tougher. Electrical stimulation is helpful when used in conjunction with good processing methods but should not be used on its own or as a shortcut.

Low voltage electrical stimulation has become more popular because it is lower in cost and safe as compared to high voltage. However, the consistency o9f the pH response to it is variable, so it is generally not as effective.

10b.iii. pH levels

The importance of low pH – low stress pre-slaughter cannot be overstated. No amount of electrical stimulation or long hanging times can improve the meat from a stressed animal with a high pH. In the UK head restraint devices are required by legislation to hold a bovine's head for captive bolt stunning. The purpose of this legislation was to improve stunning accuracy. However, it has been found that in some cases, head restraint can increase stress (*Ewbank et al 1992)* and that the cortisol levels (indicator of stress) were significantly higher in a head restraint compared to a conventional single animal stunning box. Some poorly designed head yokes took an average of 32 seconds to induce the animal to put their heads in. It was also found *(Payne and Young 1995)* that stress was even more severe if the restraint was prolonged due to injecting or ear-tagging. Re-tagging is common practice in some of the UK's largest abattoirs just prior to slaughter. Bearing in mind all the cattle already have two ear-tags and corresponding passports I find this sacrifice of eating quality for the sake of even more 'traceability' totally ridiculous. This is particularly galling bearing in mind that managers of large abattoirs admit that ultimate traceability is impossible when large numbers are being killed.

In abattoirs overseas, where tenderness is guaranteed, the pH from all the carcasses is taken at different stages of chilling. If the intermediate pH is high the carcasses are put straight into mince and not kept for primal cuts, as it is appreciated that it is not worth trying to improve the eating quality of a carcass with a high pH. The ideal ultimate pH is 5.4-5.6.

Comment

The evidence from other countries that high levels of stress pre-slaughter can cause tough beef, is overwhelming. There are many things that can be done in the UK to improve this situation and reduce stress.

10b.iv. Chilling times and temperatures

Chilling can have serious effects on the texture of beef if it is carried out too rapidly. There is a critical relationship between pH and muscle temperature, which must be maintained to avoid cold shortening. – If the carcase is chilled too quickly immediately after slaughter (before the glycogen in the muscle has been converted to lactic acid) then cold shortening will occur. Essentially the muscles tense up causing toughness in the meat.

Cold shortening is avoided if carcass pH falls below 6.0 before loin temperature falls below 12C.

To allow a safety margin and taking into account the fact that some carcases will show high initial pH values in the eye muscle, it is recommended that beef carcasses should not be chilled below 10C (50F) until at least 10 hours after slaughter. Only under these conditions can optimal tenderness be ensured. It is important not to cut corners at this stage – particularly with the leaner carcasses as these are more prone to cold shortening, for they lack the insulator effect the fatter carcasses have.

It strikes me as strange to treat all carcasses the same regardless of their conformation. I would like to see different chilling rooms for different grades of carcass with extra care and slower chilling times for the leaner carcasses.

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10b.v. Conditioning (hanging time)

Conclusive evidence proves that the longer the carcass is hung on the bone the better. For the Australian Five Star beef the minimum hanging time is 21 days. However, evidence shows that it is the first 14 days which show the greatest degree of change, although additional improvement can continue up to 40 days. Humidity needs to be no greater than 90% and no less than 85%, with a temperature ranging from 6C down to 0C, depending on the hanging time.

Numerous trials have concluded that conditioning beef provides more consistent eating quality and levels out the differences previously noticed between animals of different fatness cover, marbling, age, sex and greed.

For real quality, hanging on the bone is the most desirable. However, vacuum packaging in primal cuts is becoming more popular and is better than no ageing at all. The chemical breakdown of meat in vacuum packs is different to that of a carcass aging on the bone, and the flavour has sometimes been

found to be less desirable as well as there being a risk of the meat being 'tainted' with an unpleasant smell and taste.

Aged beef will initially have a more attractive and brighter red colour than un-aged, but its colour stability becomes progressively poorer the longer it is aged.

> **Although it is widely recognised and accepted that hanging beef provides superior and more consistent eating quality, large processing plants are reluctant to practise it because it does not fit in with the 'fast throughput, fast turnover' philosophy.**

Lack of space is one of the reasons given – bearing in mind that these processing plants are expanding all the time, whilst the smaller abattoirs are going out of business – but I do not find that a good enough reason.

10b.vi. Hip suspension

It has been found that carcasses hung by the hole in the aitch bone produce more tender meat than those hung conventionally. This is because cold shortening is avoided to a certain degree. Although this was practised in some UK abattoirs it was seen as a bit of a chore because the sides need re-suspending. It takes up more room and the shape of the top piece can be distorted.

10b.vii. Shear testing

Shear testing of the carcase is routinely done in abattoirs overseas where quality is an issue – it is not done in any of the larger abattoirs in the UK. It is a process where different parts of the carcass are tested for tenderness. The most universally used method is the Warner-Bratzler, named after the inventor of the instrument which probes the different degrees of tenderness in a carcass.

10b. viii. Seam cutting

Seam cutting is widely practised on the continent. It is a method by which the individual muscles are seamed out and sold individually. Trials carried out in this country have shown that the eating quality of different muscles varies considerably from the **same** carcass. It would therefore follow that more could be done to raise eating consistency if more seam butchery was adopted and cuts did not contain several muscles – each with its own tough/tender peculiarities.

> **Comment**
> After visiting the abattoirs in the UK I would conclude that there is enormous room for improvement. There are three main areas which need concentrating on and which, from evidence gained from overseas, would make the most difference to eating quality.
>
> These are:
>
> 1. 0Reducing stress before slaughter, thereby reducing ultimate pH.

2. Slow chilling particularly with leaner carcasses (different chilling rooms depending on conformation of carcass?)
3. On-the-bone hanging – the longer the better.

11. Retail influence on consumer confidence

Supermarkets now have between 68-73% of the market share for the sales of fresh beef. The positive side of this increased share is that consumers trust the safety of beef bought through supermarkets, as they assume all the different checks have been made and that the 'Big Five' would not risk selling anything that could contain BSE or any other 'disease'. However, the negative side is that consumption seems to be dropping in line with the supermarkets' share getting bigger.

One would have thought that, because beef was so easily accessible to the consumer, the consumption rate would have gone up. Evidently this is not so. The supermarkets are looking after their shareholders first and foremost and it is profit-per-metre of shelf space which is top priority. Whether they sell beef, chicken, lamb or fish is inconsequential. There is no loyalty to any particular product, hence minimal attention paid to the eating quality of the product. It is a fact that supermarkets like to keep very little money tied up with carcasses in storage, so an unexpected slight demand will have supermarket buyers suddenly demanding beef on their shelves – which will only just have been killed. This obviously leads to shortcuts being taken and extremely 'fresh' but inedible results.

Bright red meat with very little fat is what the consumer has been conditioned to preferring. The problem is that this is not conducive to eating quality

Bright red meat with very little fat is what the consumer has been conditioned to preferring. The problem is that this is not conducive to eating quality so, once again, the customer is dissatisfied. However, research has shown that consumers would welcome a simple, easy-to-understand system (similar to that of the star rated system) where they are told what would eat best and would trust that rather than make a visual judgement.

0

12. The Meat and Livestock Commission

There is no doubt that the beef industry needs a marketing arm and the promotional work done during the BSE crisis by the MLC helped the public on the safety of British beef. Inevitably there is bound to be criticism, particularly when prices are not good and the industry is in the grips of a recession. Is the criticism justified?

The MLC spends £10.9 million of levied money on the beef industry. Seventy five percent of this is spent on marketing with only 3.6% spent on eating quality and 1.6% on product development. Bearing in mind consumption is continuing to drop despite the huge amount of money spent on marketing, and that consumers' main criticism of the product is the lack of consistent eating quality, it appears that the balance of expenditure is not right. The 'British Beef is Best' was a particularly effective campaign. However, winning the public's loyalty with a substandard product can only last so long.

In 1989 the MLC produced a blueprint advising abattoirs on the best way to achieve consistent quality. The theory behind the blueprint was well meaning but pointless unless the standards advised can be audited and rewarded when adhered to. There would be very little short term incentive for any abattoir to keep within the blueprint guidelines.

I found the MLC most helpful and came home clutching piles of glossy brochures from my many visits. I was initially impressed by the 'High tech' image but became increasingly uneasy the more I read and the more discussions I had with the beef strategists. One of my main concerns was their acceptance that beef consumption was going to continue to drop whatever happened, and their lack of **practical** targets. For example, these were the only targets relating to consumers for the 1995-98 period (MLC Corporate plan 1999/2000):

> TARGET 1. To maintain scores for "eating as much as ever" at 36.5% and for eating "less meat than I used to" at no more than 47%.
>
> TARGET 2. To get a 40% positive consumer response to statements on meat and a 50% positive response to statements on the effect of advertising.
>
> TARGET 3. To increase the share of red meat in recipes in monitored women's magazines to over the 1993/94 baseline.

As well as being rather unambitious these targets are extremely hazy and ill-defined and would be virtually impossible to prove or disprove either way as to whether they have been met.

The improvement of eating quality was treated dismissively with "the blueprint" given as the reason for not doing any more and, when asked about the 'Guaranteed Tender or Your Money Back' scheme as practised in New Zealand (95% guaranteed in NZ and 99% guaranteed for Glenbervie Beef, Scotland), this was the written response:

> *"As yet we only know about 50% of the variation relating to tender beef. It would seem to me that no retailer in the UK would take a guaranteed tender beef marketing activity up".*

The se000000cond quote from them relates to stress:

"There is no known experimental data that proves the effects of stress. The comments are purely rumour". This from the Head of Beef Strategy, MLC! (See the section in this report on stress page and pH on page)

In my opinion the MLC has become too large, has lost sight of original objectives, and cannot respond quickly enough to change.

Sadly, I conclude that the criticism of certain sectors of the MLC is totally justified.

12a. The present subsidy system

The present subsidy system is not conducive to eating quality as it does not take into account the different rates of growth for different breeds. For instance a big Charolais cross is likely to be too lean at 29 months (with 30 months being the deadline) and a smaller breed like the Hereford will be too fat for the second payment at 22 months. This encourages the producer to sacrifice eating quality for the sake of the brown envelope.

12b. Farm Assurance/Quality schemes

There is no doubt that Farm Assurance was a necessary evil during the BSE crisis and will need to continue for the foreseeable future. In most cases it works well. However, it is important to remember why it in place and not use it as an excuse to have heavy handed officials making the beleaguered producers' lives even more hellish with never ending nonsensical rules and regulations. If enforced in a practical and sympathetic manner it should go towards helping to restore the export market.

All they (the consumers) wanted to know was how would that beef taste when it was cooked.

However, I was disappointed how little consumers understood about the Farm Assurance scheme. Most of them were completely baffled by the different 'quality' schemes and really didn't want to know exactly how that animal was reared or whether the farmer had kept up with his individual medical records. All they wanted to know was how would that beef taste when it was cooked. Once again they were disappointed. I would like to see the assurance schemes combining food safety, welfare **and** eating quality, thereby making it mor3 relevant both to the producer and the consumer.

13. What can be done as a producer?

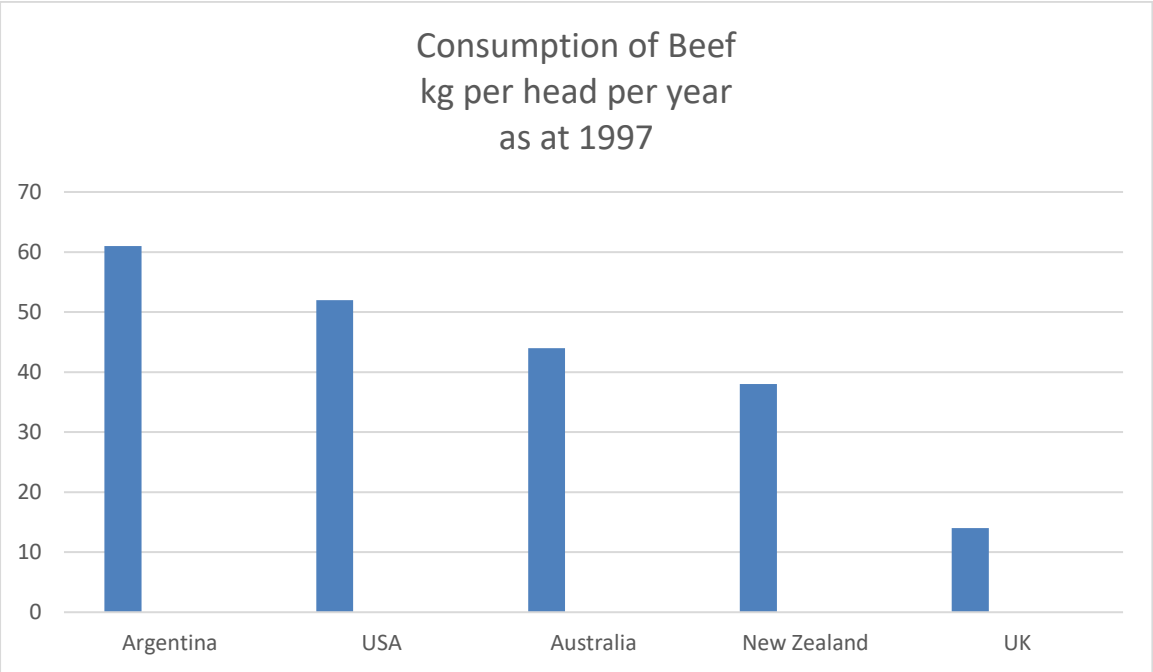
The problem is that farmers are busy 'producing' and simply do not have time to look into the marketing or the processing of their product. However, this simply cannot continue. The more distant farmers become from the end product the worse the situation will become and the more consumption will decline. Farmers spend between 18 and 30 months producing beef of the highest quality for it, often, to be ruined in 4-5 days by bad processing methods. Questions should be asked at their local abattoir and, if not satisfied with the answers, the cattle should be taken somewhere else where more att0ention is paid to detail. Pressure should be put on both the abattoirs and retailers to improve the eating quality of our beef and the long term future of the beef industry.

The MLC should also be lobbied. It must be remembered that farmers are paying them to promote their product and, if famers are not satisfied, they must be told why.

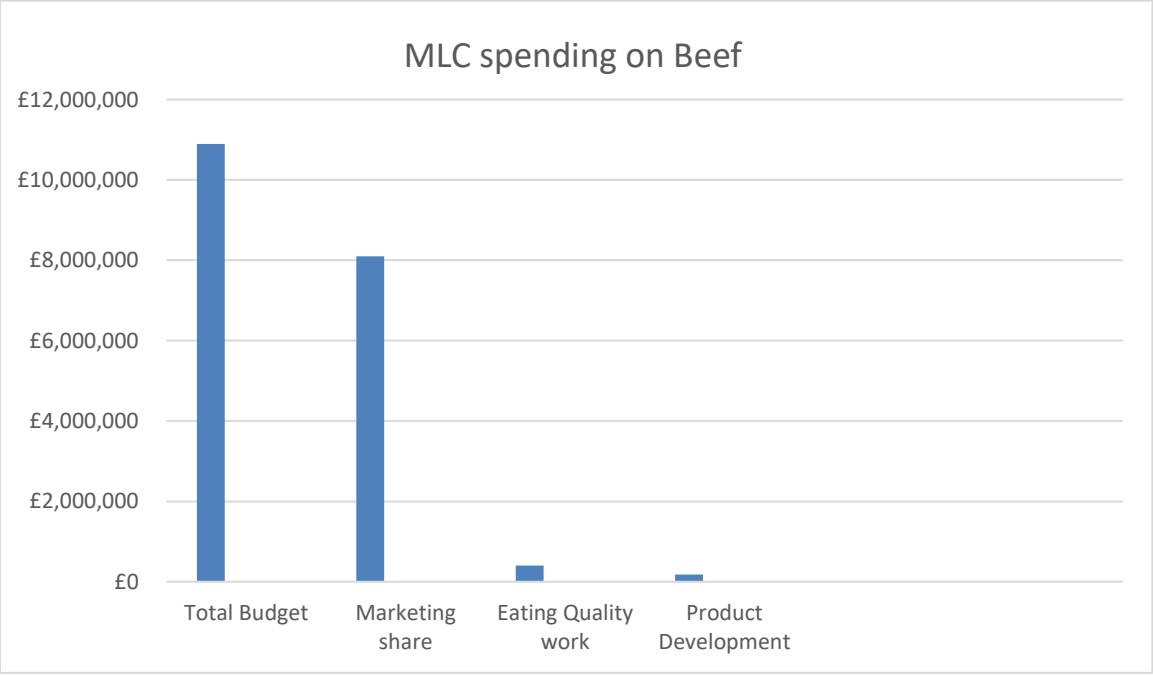
13a. Producer owned food halls

This is a concept I would love to see more of in Britain. If farmers were able to work together by producing, processing and marketing their own product, then not only would they cut out all the middle men who are profiting at their expense, but they would know what the consumer requires and be able to ensure that their product is one to be proud of. Farmers by their very nature are individuals and like to 'paddle their own canoes' but now more than ever is the time to pull together and get more control. Many consumers would love to support the farmers, especially at present when they are worried about the profiteering supermarkets and the distrust that GM foods have brought.

14. Graphs



Statistics courtesy of MLC annual report 1996



15. Conclusions and Recommendations

1. To restore **consumers'** confidence the eating quality of British beef **must** improve
2. **Processors** to be made accountable and eating quality guidelines enforced.
3. **Retailers** to have pressure applied by farming organisations not to allow beef to continue to sink into mediocrity
4. Beef to be branded according to eating quality – the system must be simple to understand and all under one umbrella **(audited by the MLC).** This should be incorporated into the assurance schemes.
5. **Farming organisations** to work more closely with consumer groups. Individual consumers have shown tremendous enthusiasm for the 'star rating' system (as practised in Australia). However, it is imperative to have pressure coming from organised consumer groups to make the retailers change their attitude.
6. In view of the 55% rise in demand for ready meals, **more forequarter beef** should be used for this market thereby increasing the value of the whole carcass and increasing overall consumption of beef.
7. **The MLC** to trim their sails and concentrate on increasing or at least maintaining consumption. No more glossy brochures or 'talking heads'. **Practica**l targets should be set and **action** is required.
8. **The producers** to take more of an active interest in the processing and marketing of their product after it leaves the farm gate. More producer/processor groups are needed as well as a more organised approach to collaborative marketing.
9. **Small abattoirs** to be supported by the government and not driven out of business by expensive rules and regulations. These steps are the key to quality meat and ultimate traceability.
10. A good product should not continue to be ruined by short term greed. This betrayal must end.

"Beef should be treated like a good red wine, with the time and respect it deserves".
Scotch Beef, Inverurie

"We don't do anything difficult, we just do it properly".
Glenbervie Beef, Stonehaven.

16. Acknowledgements

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