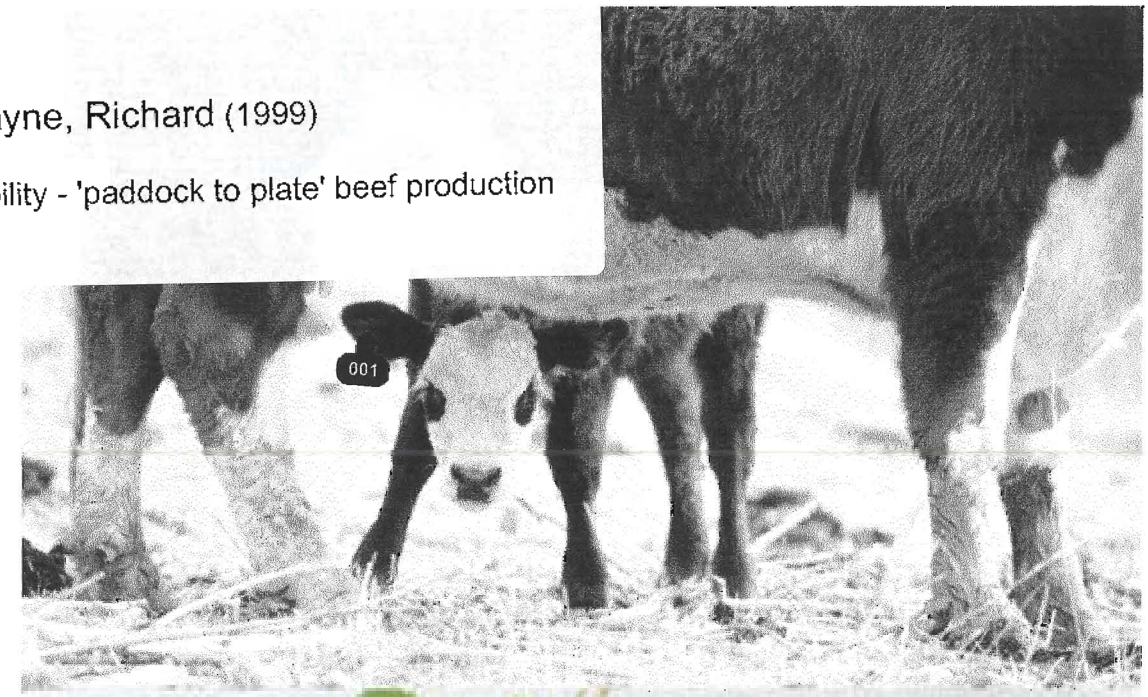
TRACEABILITY



'Paddock to Plate' Beef Production

Richard Redmayne
Kellogg Rural Leadership Programme 1999

EXECUTIVE SUMMARY

The concept of **Traceability** in the food supply chain becomes more important each time a consumer falls ill or dies as the result of a particular problem in a food production system.

This report sets out to define the supply chain in relation to beef production. It is also an investigation into the necessary components that are required for an effective system of traceability that is able to provide a safe eating experience for the consumer, every time.

If the consumer does not have confidence in the integrity of how a particular food product has been produced, they will not purchase it. The beef industry must act to circumvent a change in consumer eating habits. If shoppers do not 'trust' beef as a product or if they have concerns regarding animal health and quality assurance standards and procedures they could choose another form of protein to satisfy their requirements.

When looking at **'Paddock to Plate'** beef production, there are a number of key areas that need to be addressed. These are:

- **Food Safety**
- **Quality Assurance**
- **Animal Welfare**
- **Bovine Tuberculosis (Tb)**
- **Systems of Traceability**

The separate links that make up the beef production supply chain place a varying degree of emphasis on each of the areas that I have identified above as being important in the production of safe food.

This report investigates the systems of traceability that are currently in use. It also presents the concept from the relative perspective of each link in the supply chain.

Any system of traceability will apportion different costs and benefits to the different sectors that make up the supply chain. It is essential that there is an excellent channel of communication operating within the industry enabling each individual link to understand the needs and requirements of the others.

In this report I have set out to cover the quality assurance and food safety issues that have led to consumer, market and industry demand for an effective trace-back system; the various systems of traceability that are available and in use today in relation to beef production; and the costs and benefits relative to each sector of the industry.

Currently there are several traceability systems running in parallel and each processing company has different elements within each system. I advocate that capturing as many elements as possible in an industry-wide system would be the best practice in the long term.

The biggest limitation in completing this report has been related to the commercial sensitivity of the material and the myriad of opinions on the subject that are represented within the industry.

CONTENTS

INTRODUCTION

The primary purpose of a traceability system in relation to the production and supply of beef, is to provide the consumer with the assurance and comfort that the meat they have purchased is safe to eat.

Traceabiity is essentially **'paddock to plate'** beef production. It's about providing a line of communication and accountability between the various links in the supply chain – from the producer to the processor through to the retailer and eventually the consumer.

An effective system of Traceability provides certainty and assurance to the consumer every time. It also serves as a management tool for producers, providing vital information that enables them to make important decisions resulting in improved production and better management practices. For both the processor and the retailer, an effective system of traceability can be used as a marketing initiative that adds value to their product.

Traditionally beef has been produced and marketed as a commodity with each sector of the industry operating independently. Stud breeders, cow and calf producers, finishers and meat processing companies have viewed their role as being complete on the day the animal or product is sold.

Due to greater consumer awareness and an increasing demand for food safety, communication channels have been established and systems of traceability implemented to send the appropriate information back through the supply chain. Consequently today's beef industry is a **consumer** driven business rather than a **commodity** driven business.

In the context of this project, the supply chain has been defined as:

Producer ➡ Processor ➡ Retailer ➡ Consumer

Each link is studied independently, while at the same time the relationship between the links is also investigated.

The issues that will be examined within the context of **Traceability** are:

- **Food Safety**
- **Quality Assurance**
- **Animal Welfare**
- **Bovine Tuberculosis (Tb)**
- **Systems of Traceability**

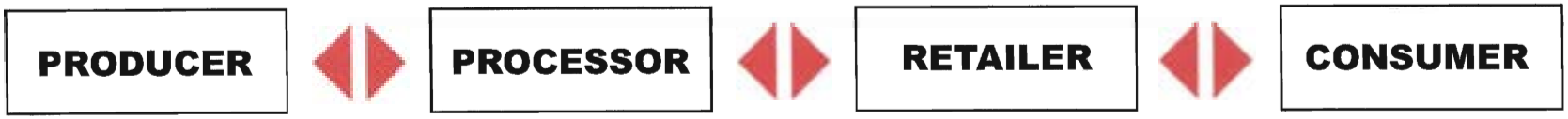
When I began to research this topic it seemed evident to me that there were several traceability systems running in parallel and that each processing company had different elements within each system. I speculated that perhaps having an industry-wide system would be better in terms of long-term viability.

I have found that the biggest limitation in completing this report has been the commercial sensitivity of the material and the myriad of opinions on the subject that are represented within the industry.

The structure of this report is detailed overleaf in diagrammatic form.

TRACEABILITY IN THE BEEF INDUSTRY SUPPLY CHAIN

SUPPLY CHAIN



ISSUES

- FOOD SAFETY
- QUALITY ASSURANCE
- ANIMAL WELFARE
- Tb
- SYSTEMS OF TRACEABILITY

TRACEABILITY FROM THE PRODUCER'S PERSPECTIVE

Today's food market is constantly evolving and consumer's are becoming more demanding and certainly more aware of what they eat and where it has come from. It is therefore essential that today's beef producers, who represent the first link in an often long supply-chain, operate an efficient system of animal identification and traceability.

While traceability is usually discussed in the context of the consumer's requirement to have a safe eating experience and it is universally agreed that this is the most compelling reason to implement a traceability scheme, there are also numerous benefits for the producer. These benefits relate to individual animal identification and the information that can be connected to that identification.

For the producer, the traceability challenge lies in identifying the origin, movements and management regimes experienced by individual animals before they are presented for processing.

Essentially the responsibility of traceability from the processor to the market is just as important as the responsibility of traceability from the farm to the processor. In fact one is not effective without the other.

As far as the producer is concerned the cornerstone of an efficient and effective traceability scheme is individual animal identification. Thus the concept of traceability involves keeping records pertaining to the 'safety' of the farm on which the animal has been domiciled and may include the treatments that the animal has received. The target market invariably dictates the scope of the information recorded.

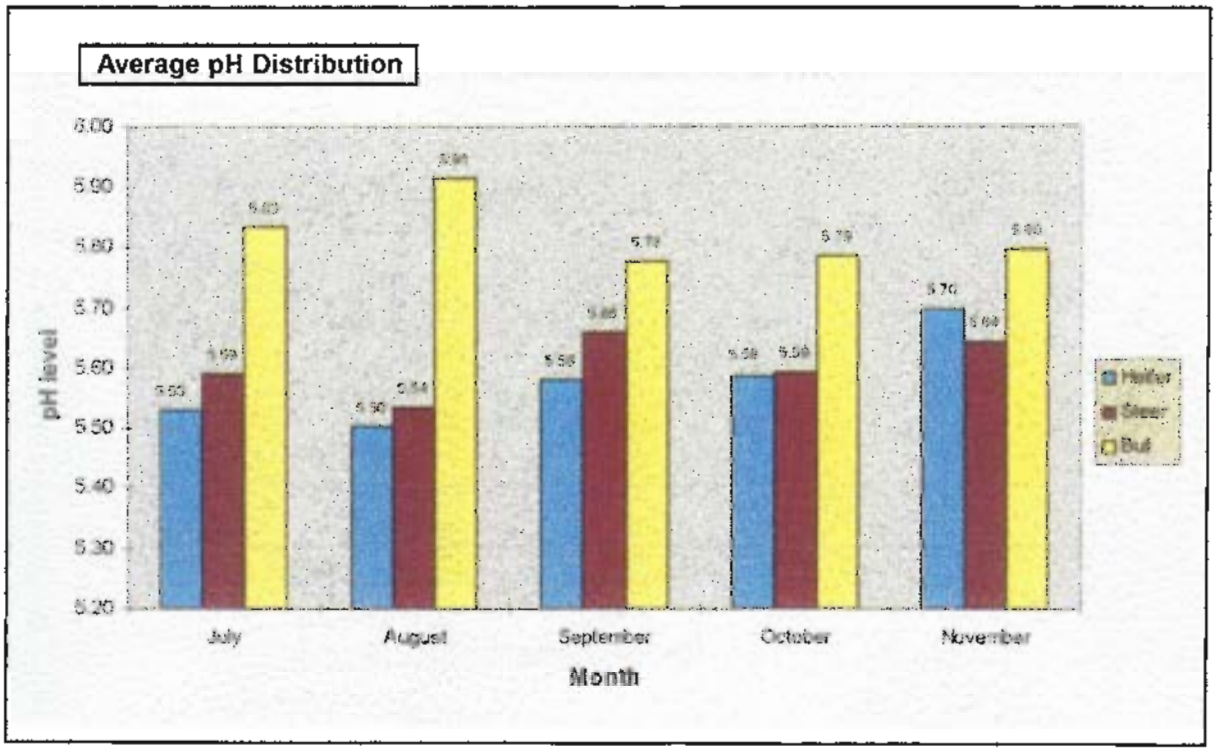
An effective traceability system provides an environment through which the producer can raise animal performance. The benefits of traceability extend beyond tracking animals for food safety reasons. An efficient system allows continuous improvement gains in production efficiency and quality. It can also result in a more organised supply of cattle for market whether store or prime; and at the same time has the potential to reduce sales costs through less sale transactions by connecting breeders with finishers.

PRODUCER – WORKING EXAMPLE

1 MANAGEMENT

The accurate collection of individual animal breed composition and parentage is particularly valuable to Breed Societies. This type of data provides accurate reporting of between breed performance and the collection of progeny growth and carcass performance information for inclusion in Sire Evaluation reports.
Within and between breed evaluations for carcass attributes are lacking in New Zealand and yet Australian data, as reported by the Meat Research Development Corporation (MRC), suggests that up to 50% of our opportunity for increased beef quality is available through genetic improvement.[1]

A practical example of how information from a large database can be used to promote genetic improvement is shown in the graph below. The data relates to pH performance within the Beef Improvement Group (BIG) database from the period July 1997 to November 1997. There are 1671 animals in the analysis including 326 heifers, 567 steers and 778 bulls.



Overall, 98.2% of heifers, 94.5% of steers and 66.2% of bulls had pH levels of 5.8 or less. These results compare favourably to surveys previously conducted by MIRINZ. It is significant that the MIRINZ survey showed that only 29% of the bulls had pH levels of 5.8% or less whereas the above study shows that 66.2% of the bulls surveyed have a pH level of less than 5.8.[2] Data such as that shown above can be used to target market specifications that set maximum pH levels.

[1] R D Thomson, General Manager, The NZ Beef Improvement Group Ltd. From a speech made to NZ Beef Council 'Traceability' Field Day, 5 March 1998

[2] ibid

PRODUCER – WORKING EXAMPLE

2 BREEDING

An effective system af Traceability and individual animal identification can be used as a management tool by the producer to improve animal performance.

Data from 'Tunnel Hill' shows how a system of traceability can be employed to improve cow herd performance.

The table on **Page 7** illustrates that by monitoring and recording data pertaining to each individual animal, it is easy to identify those in the herd that are performing exceptionally and those who are failing to meet expectaions.

The two main criteria measured at 'Tunnel Hill' in terms of the cattle traceability system are the calf's weight at weaning as a percentage of its mother's weight at weaning (cow efficiency) and the calf's birth to weaning growth rate.

As well as drawing attention to the non-performers, this system also highlights the top performers. The figures highlighted in purple pertain to calves at the top end of the weight scale whose mother's have produced a correspondingly high live weight / weaning weight ratio.

With information such as this to hand the farmer is able to cull the poor performers and modify their mangement practice in a bid to improve the overall performance of the herd. For example he/she may choose to purchase more breeding stock from a particular breeder if the monitoring tells him/her that stock purchased from one source is consistently out performing another.

In summary, by culling the poor performing cows from the herd on the basis of objective measurement, it is possible to dramatically increase productivity. With information such as this to hand the farmer is able to make important management decisions. The result being increased productivity and maintaining a cycle of continuous improvement.

COW TAG NUMBER	COW AGE Mar-99	HISTORY OF COWS PERFORMANCE	Calf Weight 1997	Weight Gain 1997	Cow Weight 1997	Weaning % 1997	Calf Weight 1998	Weight Gain 1998	Cow Weight 1998	Weaning % 1998	COW SOURCE	2 yr Weight Gain	Average Calf Wgt(2 yr)	Mob Average
720	7.5	WET DRY 94 (NO MILK)	314	1.15	528	59%	295	1.18	502	59%	BUSHLANDS	1.17	305	
721	7.5		248	1.06	512	48%	295	1.09	520	57%	BUSHLANDS	1.08	272	
722	7.5		230	1.03	508	45%	272	0.96	512	53%	BUSHLANDS	1.00	251	
723	7.5	CALVED 97 (BREECH)	243	0.86	449	54%	257	0.89	472	54%	BUSHLANDS	0.88	250	
726	7.5	TWINS 94	259	1.03	546	47%	275	0.97	516	53%	BUSHLANDS	1.00	268	53%
728	7.5		289	1.05	576	50%	290	1.02	542	54%	BUSHLANDS	1.04	290	1.00
729	7.5		268	0.89	566	46%	279	0.96	568	49%	BUSHLANDS	0.93	269	286
734	7.5	CALF OVERSHOT JAW 94	282	1.04	558	51%	304	1.08	560	54%	PETERSON	1.06	293	
736	7.5		259	0.90	554	47%	267	1.01	524	51%	PETERSON	0.96	263	
738	7.5	DEAD CALF 98 (FOSTERED)	295	1.14	646	46%	266	0.95	666	40%	PETERSON	1.05	281	
739	7.5	WET DRY 94 (NO MILK)	302	1.07	604	50%	304	1.04	608	50%	PETERSON	1.06	303	
740	7.5	LATE 95 / HIPPY 97 P.T.	280	1.05	594	47%	280	1.07	594	44%	PETERSON	1.06	270	
742	7.5		317	1.26	544	58%	336	1.18	538	62%	PETERSON	1.22	327	
744	7.5	WET DRY 94 (NO MILK) / TWINS 98	283	1.21	662	43%	268	0.94	646	TWINS	PETERSON	1.08	276	
745	7.5		317	1.20	590	54%	304	1.16	580	52%	PETERSON	1.18	311	50%
748	7.5	BAD FEET 98 P.T. / WET DRY 95	288	1.02	610	47%	294	1.11	588	43%	PETERSON	1.07	270	1.08
749	7.5	WET DRY 94 (NO MILK)	270	1.14	548	49%	295	1.12	566	52%	PETERSON	1.13	283	287
750	6.5	LATE 96 / HIPPY 99 P.T.	305	1.31	604	50%	280	1.21	596	47%	TAUPOTO	1.26	293	
752	6.5		301	1.13	608	50%	239	1.02	648	37%	TAUPOTO	1.08	270	
753	6.5		336	1.24	644	52%	274	1.03	624	44%	TAUPOTO	1.14	305	
755	6.5	LATE (96 / 97) / WET DRY 96	343	1.42	642	53%	340	1.28	644	53%	TAUPOTO	1.35	342	
756	6.5	LATE 96 / TWINS 98	238	1.04	598	40%	338	1.20	528	64%	TAUPOTO	1.12	288	
757	6.5	LATE 96	225	1.1	604	37%	266	1.14	598	44%	TAUPOTO	1.12	246	
758	6.5		239	1.01	584	41%	273	1.07	600	46%	TAUPOTO	1.04	256	
759	6.5	LATE 96 / DEAD TWINS 97 (FOSTERED)	243	0.89	522	47%	258	1.13	504	51%	TAUPOTO	1.01	251	
760	6.5		271	1.12	544	50%	272	1.09	576	47%	TAUPOTO	1.11	272	
761	6.5	DEAD CALF 98 (FOSTERED)	300	1.15	564	53%	250	0.87	638	39%	TAUPOTO	1.01	275	
762	6.5	COW DEAD 24/04/99	300	1.11	542	55%	351	1.23	556	63%	TAUPOTO	1.17	326	
763	6.5	LATE 96	218	0.97	662	33%	261	0.99	662	39%	TAUPOTO	0.98	240	
764	6.5		249	1.14	586	42%	306	1.14	578	53%	TAUPOTO	1.14	278	
765	6.5		271	1.26	608	45%	306	1.09	600	51%	TAUPOTO	1.18	289	
767	6.5		271	1.09	608	45%	274	1.16	604	45%	TAUPOTO	1.13	273	
768	6.5		291	1.19	584	50%	325	1.16	590	55%	TAUPOTO	1.18	308	
769	6.5		293	1.01	532	55%	271	0.96	538	50%	TAUPOTO	0.99	282	
770	6.5		292	1.17	548	53%	306	1.16	552	55%	TAUPOTO	1.17	299	
771	6.5	LATE 96	227	1.08	600	38%	300	1.19	566	53%	TAUPOTO	1.14	264	
772	6.5		257	1.11	548	47%	286	1.05	576	50%	TAUPOTO	1.08	272	50%
773	6.5		347	1.28	534	65%	325	1.14	518	63%	TAUPOTO	1.21	336	1.12
774	6.5						298	1.03	442	52%	TAUPOTO	1.03	298	294
775	6.5	BAD FEET 98 P.T.	321	1.19	475	68%	292	1.03	487	60%	FANNIN	1.11	307	
778	6.5	LATE 96	260	1.01	476	55%	307	1.05	473	65%	FANNIN	1.03	284	
779	6.5	HIPPY 97 / 98 P.T.	288	1.06	462	62%	327	1.14	483	70%	FANNIN	1.10	313	
780	6.5	LATE 96	225	1.05	468	48%	248	1.06	479	52%	FANNIN	1.06	237	
785	6.5		274	1.02	556	49%	297	1.13	544	55%	PIO PIO	1.08	286	
786	6.5		296	1.17	504	59%	271	1.04	504	54%	PIO PIO	1.11	284	
787	6.5		269	1.13	499	54%	289	1.09	504	57%	PIO PIO	1.11	279	

TRACEABILITY FROM THE PROCESSOR'S PERSPECTIVE

Meeting customers' food safety and quality standards is an essential part of any food processor's core business in today's market.

The following statement of intent clearly captures how AFFCO, one of New Zealand's leading beef processors, views the concept of traceability:

"To satisfy the standards being set by our customers, AFFCO have developed a strategy to collect detailed information from our clients concerning on-farm practices and procedures. This information enables us as the processor to establish that the livestock supplied complies with our customers' specifications in all respects." [1]

As a first step towards an internationally acknowledged standard, AFFCO is introducing its **AFFCO Select – Beef Accreditation** programme in January 2000, which in conjunction with the **AFFCO Livestock Presentation Policy**, will provide customers with an assurance regarding food safety and the quality of the product being supplied.

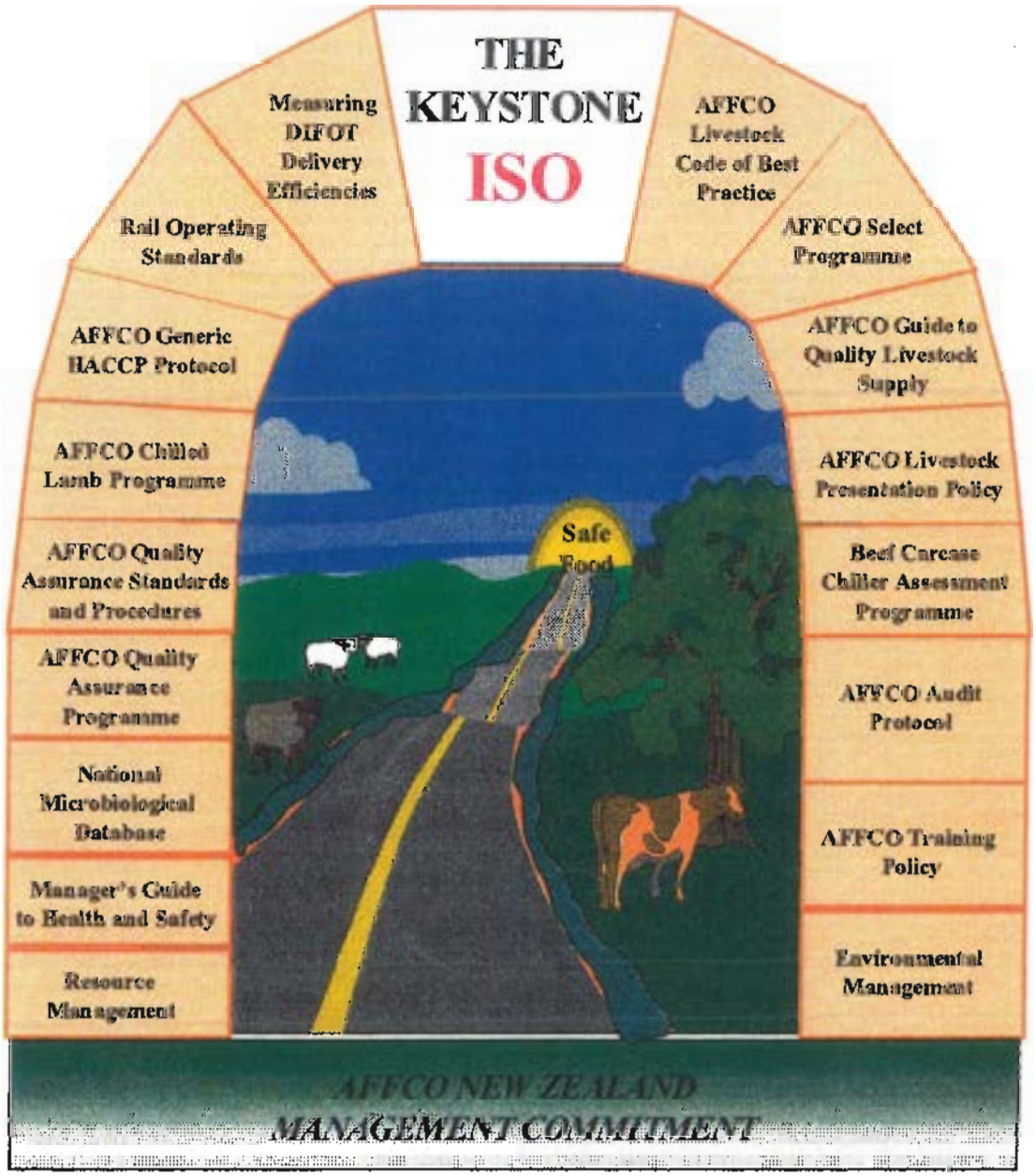
By implementing an effective system of traceability, the meat processor is essentially implementing a mechanism to deliver safety.

Prior to adopting its policy on traceability, AFFCO had widespread consultation with its suppliers in order to encourage both quick adoption and low levels of supplier resistance. This **consultative approach** is one of the key concepts in linking the various sectors that make up the supply chain in the beef industry.

AFFCO's internal strategy for providing a "Safe Food Highway" is detailed in the diagram on **Page 9** which shows how the various disciplines interrelate as part of an internal management commitment to the production of safe food.

From a practical point of view it is imperative that the meat processor has the systems in place to allow the information supplied for each animal to be accurately recorded. They are essentially providing a credible and effective means of tracing any problems with respect to every carcass or part thereof, should such information be sought at any point further down the supply chain.

1 Doug Lineham, Client Services Manager, AFFCO Foods Group. From a speech made at the 'Beef Week Field Day', Kapiro Staion, Keri Keri, February 1999.


THE
KEYSTONE
ISO
Measuring DIFOT Delivery Efficiencies
AFFCO Livestock Code of Best Practice
Rail Operating Standards
AFFCO Select Programme
AFFCO Generic HACCP Protocol
AFFCO Guide to Quality Livestock Supply
AFFCO Chilled Lamb Programme
AFFCO Livestock Presentation Policy
AFFCO Quality Assurance Standards and Procedures
Beef Carcase Chiller Assessment Programme
AFFCO Quality Assurance Programme
AFFCO Audit Protocol
National Microbiological Database
AFFCO Training Policy
Manager's Guide to Health and Safety
Environmental Management
Resource Management
Safe Food
AFFCO NEW ZEALAND
MANAGEMENT COMMITMENT

The meat processor can certainly benefit from an effective system of traceability. They are now supplying a value-added product that assures potential clients of the integrity of the beef supplied. At the same time such a system also serves to under-pin the processor's own quality assurance claims.

Further details regarding how it is possible to trace product from the market back through the processor and eventually to the producer is demonstrated later in this report. Refer **QUALITY ASSURANCE – WORKING EXAMPLE, 'BUCKSHOT' – JAPAN** on **Page 21**.

TRACEABILITY FROM THE RETAILER'S PERSPECTIVE

An effective system of traceability can be used by the retailer as a front-end marketing tool and as a back-end management and control tool. When marketing beef products the retailer benefits from an improved image of quality and safety consciousness – both of which are critical in the mind of the modern consumer. This brings customers into the store to buy beef and consequently other products. The key commercial benefit for the retailer is therefore multiple market share.

The retailer also employs traceability as an internal auditing and quality control measure. The benefits in this respect include being able to guarantee independent control on compliance with beef contract specifications; increased confidence in the integrity of the beef supply chain; a reduced need for routine meat factory inspections; and an improved relationship with the meat processor.

Today's food retail stores and the industry in general, are increasingly placing more emphasis on quality assurance and food safety.

Chet England, Burger King Corporation's Director of Quality and Food Safety made a significant impact with his address to participants attending the **Surviving in an HACCP[1] World** workshops in August 1998, in which he urged a 'hoof to mouth' approach to food safety. [2]

England said a recent study listed 'food poisoning from meat' among the top five on a list of things about which Americans are afraid.

He was speaking at the workshops as a representative of the National Association of Chain Restaurants (NCCR). He is chairman of NCCR's Food Safety Task Force. He said that the council represents 40 companies that operate over 90,000 establishments, employ 2 million people, and have annual sales in excess of US$50 billion.

England said that restaurants are taking a number of steps to ensure food safety, such as implementing controlled cooking processes and other rigorous in-restaurant safeguards. He said restaurants have improved their training for management and crew and have implemented testing and auditing procedures to enhance scrutiny of their suppliers.

1 Hazard Analysis Critical Control Points.

2 Chet England, Director of Quality and Food Safety, Burger King Corporation. Speech made at the "Surviving in an HACCP World" Conference, London, August 1998.

According to England, the quick service restaurant industry is also beginning to issue specification mandates for microbial interventions at slaughter. He urged participants to ensure that the animal producers were doing their best to minimise pathogen levels. He cited research that has shown that E Coli 0157:H7 is able to thrive in water troughs, in silage and even on equipment. He urged producers to employ production practices that minimise manure build-up and shipping stress.

England said more research is needed on pre-harvest interventions and encouraged the application of "Agricultural HACCP," often referred to as best management or production practices. He also stressed that for the production sector to eliminate the source of contamination when it surfaces, improved systems of traceability must be in place.

In summary, England cited four reasons as to why he was convinced it was necessary for the industry as a whole to act, under the heading **"Why Should We Care?"**

1 "**Liability** - He said the Jack in a Box incident litigation has resulted in hundreds of millions of dollars being paid in lawsuits. 'It won't take lawyers very long to look around and figure out they can sue producers, as well as processors and food service operators.'

2 "**Regulation** - Should there be a major public outcry, he said to expect increased regulation, even unwarranted, especially if there is little evidence of voluntary action.

3 "Protecting sales abroad in other countries.

4 "'It's the right thing to do.'" [1]

In his role at Burger King, England is responsible for supply quality assurance, product safety, regulatory compliance, environmental affairs, nutritional information and technical services. He said Burger King alone uses meat from over four million cattle each year.

England said that NCCR and its members hoped to continually engage in open dialogue with other meat industry sectors in order to improve communication within the supply chain. He said that he hoped this series of workshops was "just the beginning." [2]

[1] Chet England, Director of Quality and Food Safety, Burger King Corporation. Speech made at the "Surviving in an HACCP World" Conference, London, August 1998.

[2] ibid

In summary the retailer is the closest to the consumer in terms of the supply-chain and therefore has the closest relationship with the consumer. The demands of the consumer are interpreted by the retailer and in turn fed back to the processor and the producer to form the basic elements of a traceability scheme.

TRACEABILITY FROM THE CONSUMER'S PERSPECTIVE

The shift in emphasis with respect to the production, processing, marketing and sale of beef can certainly be accredited to consumer demand. Today's shoppers are very aware of what they eat.
In the past few decades we have changed everything about our relationship to food – from how we produce, process and distribute it to how we prepare and eat it – and the changes are making us sick.

"Contaminated food kills 9 000 Americans and sickens as many as 81 million every year. Outbreaks from hamburger, fresh basil, alfalfa sprouts, baby lettuce, fruit juices and frozen strawberries – each week it seems another familiar food is incriminated as the cause of illness or death… …Intensive factory farming methods, mass processing, widespread distribution, importing and exporting, and consumer demands for novelty, year round availability of fresh produce, cheap food and convenience have each created a niche for an opportunistic pathogen, some unheard of a generation ago. Tragically we have upset the subtle ecological balance of the food chain and we have only begun to pay the price." [1]

According to Robin Cook, author of a book called Toxin that deals specifically with the scourge of E Coli 0157:H7, *"… a basic requirement for the pursuit of good health is clean water and uncontaminated food. Human beings as a civilisation have been struggling with the former since urbanisation. Tragically the circumstances with the latter is the opposite. After significant technological progress with food preservation, particularly in regard to refrigeration, we have been losing ground due to the pressure for increased food quantity and lower retail prices. Intensive farming and animal rearing practices have actually created new and frightful forms of contamination and threaten to spawn more."* [2]

Today's farmers and meat processors have an obligation to ensure that the food supply chain in this country remains blemish free. The rest of the world views New Zealand as clean and green – this is a message that requires constant reinforcement and it is vital that the industry as a whole works diligently to preserve this image. [3]

1 Spoiled, Nicols Fox, (page 27).

2 Toxin, Robin Cook, (page 66).

3 Doug Lineham, Client Services Manager, AFFCO Foods Group. From a speech made at the 'Beef Week Field Day', Kapiro Staion, Keri Keri, February 1999.

The BSE crisis in Britain shattered consumer confidence in beef and precipitated acute public concern for the safety of the human food chain. The crisis served to alert consumers to the lack of information available on meat products generally.

The reverberations of the BSE disaster had an immediate effect on meat trading around the world. No British beef is exported to Asia and yet consumption there declined 45% overnight. [1] Perception became a reality for the consumer and they quickly moved to other forms of protein.

Reacting to this, retail chains and other major buyers throughout Europe and the rest of the world are now demanding reliable traceability in all meats and in particular beef, on behalf of their customers.

[1] Meat Matters, Meat New Zealand, 23 April 1999

FOOD SAFETY

When discussing food safety issues, it is necessary to consider the important role each link in the food chain plays in ensuring a safe food supply. The entire chain includes growers, packers, shippers, food handlers, processors, retailers and consumers. If a link in that chain is broken, it threatens the safety and integrity of our food supply.

Retailers and other industry groups are working hard to promote safe food preparation and handling procedures. Not only must they ensure that their food products are transferred safely from the producer to the processor and on to the retailer; but it is also important that their products are transferred safely from the supermarket shelf to the dinner plate.

According to the United States' Centres for Disease Control (CDC), 97% of all traceable foodborne disease outbreaks result from improper handling and preparation of food. In fact, CDC data from 1983 -1992 confirms that the most common practice that contributed to foodborne disease outbreaks was improper holding and cooking temperature, followed by poor personal hygiene practice by the food handlers. [1]

The beef industry as a whole must work to improve how it communicates public health messages to the entire food chain, particularly consumers. Regardless of the cause or origin of any foodborne disease, the result will always be detrimental to the industry and will have a negative impact on each link in the supply-chain.

As our society continues to demand more pre-prepared and processed foods, consumers are spending less time in their kitchens. They are also forgetting, and in some instances not learning - basic food safety skills and practices that are essential when handling and preparing food.

Consumers need to understand and practice food safety; they must become familiar with proper food handling and preparation methods. When preparing foods, they should remember the important role they play in the entire food chain and do their part to ensure a safe, abundant and healthy food supply.

[1] From the California Department of Food and Agriculture Website, www.cdfa.ca.gov/foodsafety/food_safety.html

Winn-Dixie, a supermarket chain that has stores spread across the United States are particularly proactive in their approach to food safety. They work hand-in-hand with the United States Department of Agriculture and the Food Safety and Inspection Service to ensure that the food consumers purchase at their stores is safe to eat.

Of particular concern to them however is that the consumer continues to safeguard their perishable items even after purchase and preparation. Winn Dixie offer a number of **Food Safety Tips** to their shoppers to ensure proper handling and food storage practices. These tips include valuable food safety and food storage information, precautionary advice regarding take-away food and leftovers and a consumer guide to the safe handling and preparation of ground meat and poultry. [1]

[1] From the Winn-Dixie Stores Inc Website, www.winn-dixie.com/safety/default.htm

QUALITY ASSURANCE

Recording and storing accurate animal health information is vital to the ongoing production of safe food.

The best way to illustrate the protocols and procedures involved with respect to this critical area of traceability is perhaps by way of an example that illustrates how one of New Zealand's meat processing companies has approached this issue.

AFFCO have produced a manual for all their suppliers called a **Guide to Quality Livestock Supply**. This publication is an integral component of their quality assurance programme. The manual asserts the proposition that it is the producer's responsibility to keep and maintain reliable records regarding animal health information and procedures undertaken up to the point of processing.

All chemicals used for the treatment of stock, relevant batch numbers, quantities and use-by dates must be recorded. AFFCO also requires that animal identity groups be noted, along with the correct withholding periods from possible processing dates.

The table on **Page 19** is a practical template that was used by 'Tunnel Hill' last season in relation to their lamb operation. The animal health information recorded on this sheet satisfies the comprehensive criteria dictated by AFFCO in relation to their **Quality Livestock Supply** standards.

Should a problem or alleged breach regarding the use of animal health products be discovered at the processing level, or perhaps even further down the supply chain, it can easily be traced back to the producer using the same process as that illustrated on **Page 21**. (**QUALITY ASSURANCE – WORKING EXAMPLE, 'BUCKSHOT'- JAPAN**). For their part in belonging to the quality assurance program, the producer is required to provide the necessary information regarding any incident that might arise.

From the customer's point of view, the fact that AFFCO's quality assurance programmes are independently audited is seen as a major factor in giving them credibility. The **Audit Sheet** (**Page 20**) must be completed by both the producer and the auditor, Asure New Zealand, in order for the farmer to be accepted and remain in the programme.

WEANED LAMBS 1998

9/11/98 - 13/11/98

			30KG – 33 KG	27KG – 30 KG	UNDER 27 KG	M & S	WORKS	% OF MOB
MONDAY	9/11/98	M.A. EARLY SINGLES	116	57	35	0	256	55%
MONDAY	9/11/98	M & S < 32KGS (5/11/98)	0	0	0	172	0	0%
TUESDAY	10/11/98	M.A. / 2TH LATE SINGLES	77	50	49	0	91	34%
TUESDAY	10/11/98	M.A. / 2TH LATE TWINS	36	52	350	0	21	5%
WEDNESDAY	11/11/98	M.A. / 2TH EARLY TWINS	134	294	723	0	53	4%
THURSDAY	12/11/98	2 TH EARLY SINGLES	86	49	34	0	154	48%
THURSDAY	12/11/98	LIGHT M.A. EARLY SINGLES	18	15	13	0	36	44%
THURSDAY	12/11/98	M & S <34 KGS (13/11/98)	0	0	0	62	1248	85%
FRIDAY	13/11/98	VERY LATE EWES	29	24	104	0	0	0%
			496	541	1308	234	1859	
					TOTAL KEPT	2579	WORKS 1859	42%

ALL LAMBS WERE DRENCHED WITH 7 mls OF VALBAZEN . ANY DIRTY WERE DAGGED

DRENCH **VALBAZEN BATCH NUMBER 51647 EXPIRES DEC 2000 . MEAT WITHHOLDING 7 DAYS**

LAMBS PADDOCKED OUT POST WEANING 12/11/98

CULL M&S

YARDFLAT	62	
NO 4	172	234

30KG - 33 KG **BLUE DOT**

NEW GRASS	250	
BACK PDK	120	
TERRACE	100	
PIT PDK	26	496

27KG - 30KG **RED DOT**

JUNGLE	120	
TOIS	180	
LAKE 1	80	
LAKE 2	20	
JUNGLE DAMS	60	
FLATS SAND	80	540

UNDER 27KG **GREEN DOT / NO MARK**

CRIBBS 1	50	
CRIBBS 2	50	
22 ACRE	200	
13 ACRE	80	
SWAMP	100	
TWEEDS	150	
JESSOPS	200	
C.T.	150	
NO 5	100	
SANDKNOB	70	
SY2	60	
SY1 N.G	50	
SY1	50	1310

Audit Sheet

Date:		Supplier Name:	
Auditor:		Supplier Address:	
Supplier No.:			

1. ORIGIN OF STOCK	*(Tick where applicable)*	Yes	No
1.1	Is the farm of origin of bought in replacement breeding sheep and store lambs known?		
1.2	Are the Livestock Movement Records up to date?		

Additional Comments

2. STOCKMANSHIP	*(Tick where applicable)*	Yes	No
2.1	Have all staff had any training in livestock husbandry skills?		
2.2	Has the person responsible for the day to day management of the sheep unit demonstrated competence in stockmanship and animal welfare?		
2.3	Do staff understand the importance of a calm environment with emphasis on minimising stress?		
2.4	Are goads used at any time? (Electric goads must not be used)		

Additional Comments

3. ANIMAL HEALTH	*(Tick where applicable)*	Yes	No
3.1	Are you registered with a veterinary practice?		
3.2	Is professional veterinary advice available and sought when required?		
3.3	Are the medicines stored in a locked cupboard?		
3.4	Is there an effective recording system in place for the use of medicines and are these records up to date documented?		
3.5	Is the person responsible for administering medicines aware of the correct withholding periods for all medicines used?		
3.6	Is there awareness that diseases may be transmitted through re-using needles/unclean syringes? Are needles disposed of correctly?		
3.7	Do injured animals receive immediate attention and veterinary treatment where applicable?		
3.8	Are staff aware of the procedure for casualty animals which have to be slaughtered on farm or at the nearest abattoir?		
3.9	Is there a worming and vaccination policy for all dogs on the property, developed in consultation with the client's veterinarian?		

Additional Comments

4. BUILDINGS AND HANDLING PEN MANAGEMENT	*(Tick where applicable)*	Yes	No
4.1	Are all buildings/handling pens designed and maintained to allow free movement, avoiding distress and injury?		
4.2	Is sufficient daylight available and does in-house lighting enable detailed inspection at any time?		
4.3	Are electric fences designed and maintained in proper working order?		
4.4	Are all paints and preservatives used non-toxic?		
4.5	Are all minimum space allowances as recommended by AWAC adhered to?		

Additional Comments

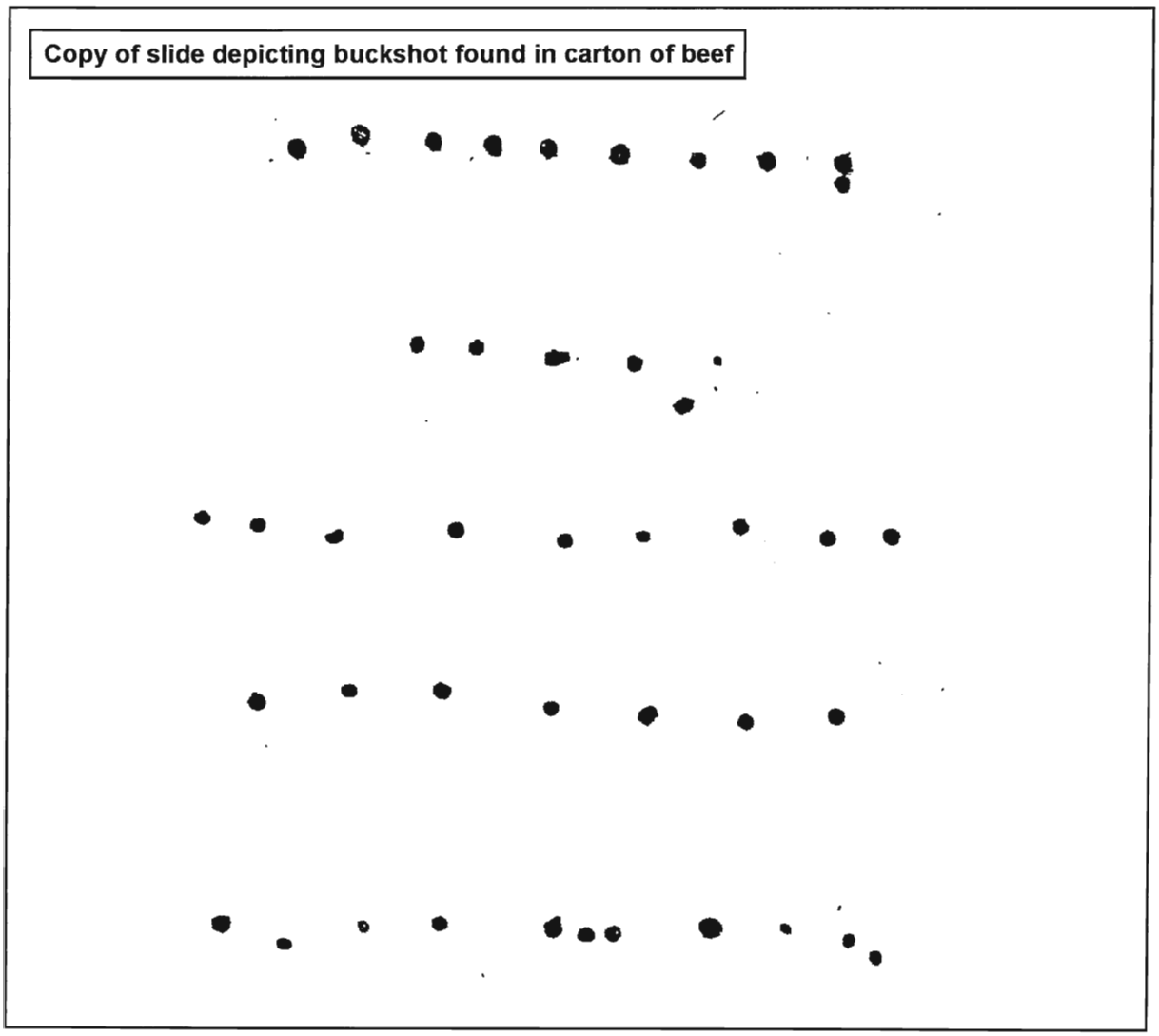
QUALITY ASSURANCE - WORKING EXAMPLE

3 'BUCKSHOT' - JAPAN

In Japan recently a situation arose where the Traceability system of a New Zealand processing company was put into practice. The following example illustrates how the different links in the chain interact and how an effective system of traceability works in a practical situation.

A retailer reported to AFFCO's office in Japan that 'buckshot' had been found in a carton of beef that they had recently purchased and imported.

Copy of slide depicting buckshot found in carton of beef



This was obviously a major concern for AFFCO and the wheels were quickly set in motion to trace the carton back through the supply chain to the producer.

AFFCO requested that the Japanese retailer fax them a copy of the carton label from the product in question.

Carton label

From the information provided on the label AFFCO were quickly able to ascertain when and where the animal was killed and when the meat was packaged for export. The barcode on the label provided additional information including the packaging time on the cutting floor and the carcass range from which the beef in question was extracted.

Analysis of carton label

KEY:

1	Country of origin	**- New Zealand**
2	Processing company	**- AFFCO NZ Limited**
3	Plant	**- Manawatu Beef Packers Feilding**
4	Location in plant	**- Boning Room #1**
5	Slaughter date	**- 20 August 1999**
6	Production date	**- 24 August 1999**

The carcass barcode records (refer highlighted section of **Carcass Evaluation Report** below), could then be traced to identify the slaughter time and the relevant mob number from the stockyards.

Carcass Evaluation Report

Tag ID No.	Carcase No.	Breed	Grade	Live Weight	Paid Weight	Weight Ratio	Individual Health Assessments			
	323	ANGX	M1	463.0	286.4	61.9	4TEETH			
	320	ANGX	M1	494.0	298.2	60.4	4TEETH	H COND	HQB L	L LAS
	322	ANGX	M1	516.0	311.7	60.4	8TEETH			
	318	ANGX	M2	460.0	274.5	59.7	8TEETH	HORNS	H COND	L PERT
	324	ANGX	T1	552.0	333.6	60.4	2TEETH			
	319	ANGX	T2	479.0	277.0	57.8	8TEETH	H COND	FQB L	
	321	ANGX	T2	541.0	310.1	57.3	4TEETH			
		TOTALS		3505.0	2091.5					
		AVERAGE		500.7	298.8	59.7				

Average for Month of	April	529.8	299.0	56.5
Average for Week of	26/04/97	539.4	302.2	56.0

INDIVIDUAL HEALTH ASSESSMENT CODES:

2TEETH	2 Teeth	HORNS	Horns
4TEETH	4 Teeth	HQB L	HQ Bruise Left
8TEETH	8 Teeth	L LAS	Liver Fluke Evidence
FQB L	FQ Bruise Left	L PERT	Liver Peritonitis
H COND	Head Condemned		

From this information, AFFCO were able to identify the producer who supplied the animals and to contact them in relation to this matter.

Section of Producer's Killing Sheet

Slaughter Payment 3 **BULL**

Description	Individual Weights

Meat Returns

Description	Head	Weight Kg	Ave Wt Kg	Rate	Premium	Units	Value $	Ave Value
M2 245.1 / 270.0	1	253.2	253.2	2.53		Kg	640.60	640.60
M3 220.1 / 245.0	1	223.8	223.8	2.44		Kg	546.07	546.07
M3 245.1 / 270.0	1	260.4	260.4	2.48		Kg	645.79	645.79
	3	737.4	245.8		Total		1832.46	610.82

In summary we have now traced the product from the retailer in Japan via the processor to the farmer who produced the animal.

In this instance the farmer was sent a letter by the processor to make him aware of the problem.

AFFCO were also able to make internal enquiries as to why the 'buckshot' had not been discovered at the time of processing. According to the processing team, analysis of their process audit did not show any sign of metal pieces. It is standard procedure to put all bulk packs through a metal detector however this method of detection does not pick up non-ferrous metals such as lead. They therefore concluded that it was remotely possible that some buckshot may have escaped detection.

Fortunately for AFFCO the Japanese retailer, whilst concerned at the discovery, did not make any claims against the company. Nor did they reject the entire consignment. They did however request that AFFCO contact the producer / supplier of the animals and advise them of the situation.

ANIMAL WELFARE

Today, retail chains and other major buyers insist on a reliable system of traceability. In particular those buyers based in Europe, where the BSE scare has had a marked effect on the beef industry and consumer confidence in beef as a product. Retailers are demanding assurance from their respective suppliers that their customers' concerns are being satisfied, in respect of food safety and also animal welfare.

Today's consumer wants to know what has happened to an animal during its lifetime. While they are not concerned with the detail, they want to be assured that it has been reared in a stress free environment, that it is healthy and able to express normal behaviour and that the meat it produces is unencumbered by medicines and residues.

Animal welfare regulations set minimum standards for all farming enterprises in New Zealand. *The Five Freedoms of Animal Welfare* is a standard that has been set by the Animal Welfare Advisory Committee in response to demand from consumers along with animal rights supporters and conservationists. The Five Freedoms are:

- Freedom from thirst, hunger and malnutrition;
- The provision of appropriate comfort and shelter;
- The prevention, or rapid diagnosis and treatment of injury, disease or infestation with parasites;
- Freedom from distress;
- The ability to display normal patterns of behaviour.[1]

Customers and consumers want to be assured that animals are presented for 'harvest' in a clean, healthy and distress free condition as above all else, food safety is paramount.

Like the farmers, the processors take the issue of animal welfare very seriously too. Each of the processing companies in New Zealand that is involved in the production and distribution of beef and beef products have a set of formal guidelines that relates specifically to the issue of animal welfare.

[1] Code of Recommendations and Minimum Standards for the Welfare of Animals Transported within New Zealand, Animal Welfare Advisory Committee, (page 1).

AFFCO for example, have published a manual called A Guide To Quality Livestock Supply that contains a section headed *"Guidelines For Animal Welfare"* and opens with the statement:

> *"Animal welfare is about looking after, and caring for, the comfort and wellbeing of animals."* [1]

The text then details the minimum requirements for stock rearing in order to comply with their Accredited Beef Programme. This programme was implemented to meet customers' food safety, animal welfare and quality standards. It is principally concerned with the concept of traceability and the processor's need for information concerning on-farm practices and procedures.

This information enables AFFCO to establish that the livestock they procure complies with their customer's specifications in all respects.

Achieving these standards impacts greatly on the ability of the processor to provide fresh food to the market place all year round. In today's market place, more and more consumers' are demanding their food supplies fresh. Therefore beef and beef products are no longer routinely frozen after 'harvest'.

Clean, healthy stock ensures low levels of bacteria at the point of processing, which in turn negates the need for products to be frozen in order to destroy high levels of bacteria.

[1] A Guide To Quality Livestock Supply, Volume 2, July 1997, (page 6).

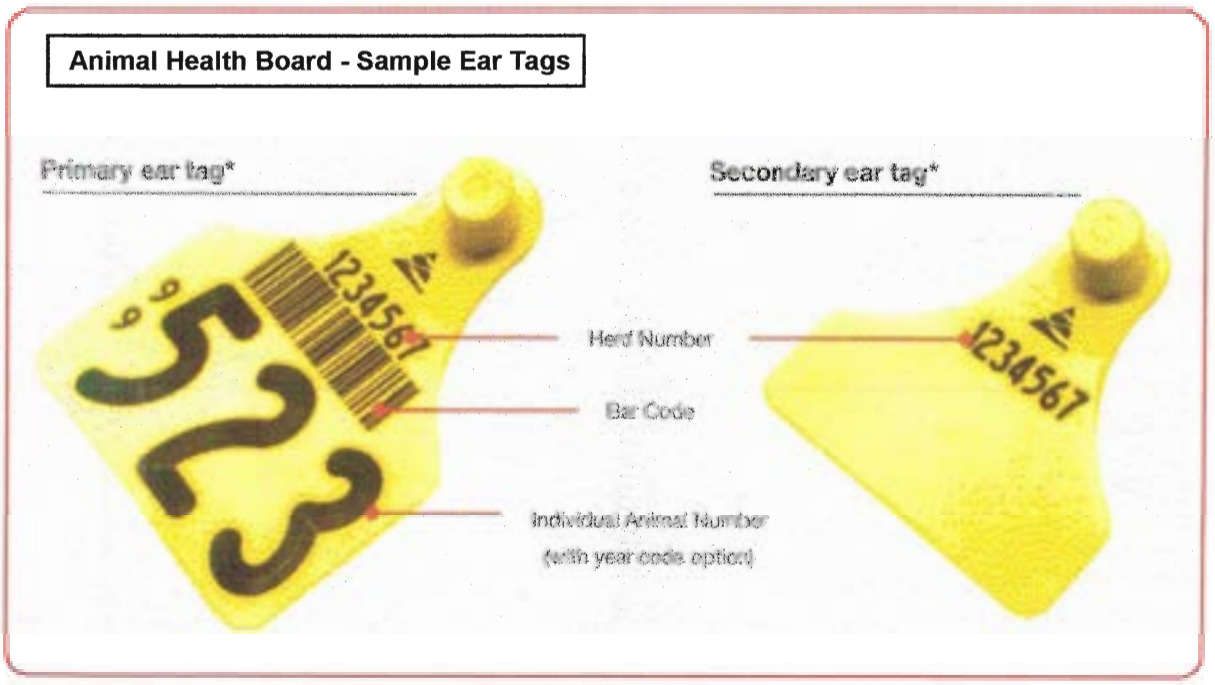
BOVINE TUBERCULOSIS (Tb)

Various markets have different specifications regarding bovine tuberculosis (Tb). Some countries will only accept meat from a country that has less than a certain incidence of the disease in their cattle herds, while some markets require cattle to have originated from a Tb free property or herd.

As part of the traceability issue the Animal Health Board in New Zealand has introduced a system for the compulsory identification of all cattle and deer that enables a carcass to be traced back to the herd of its birth.

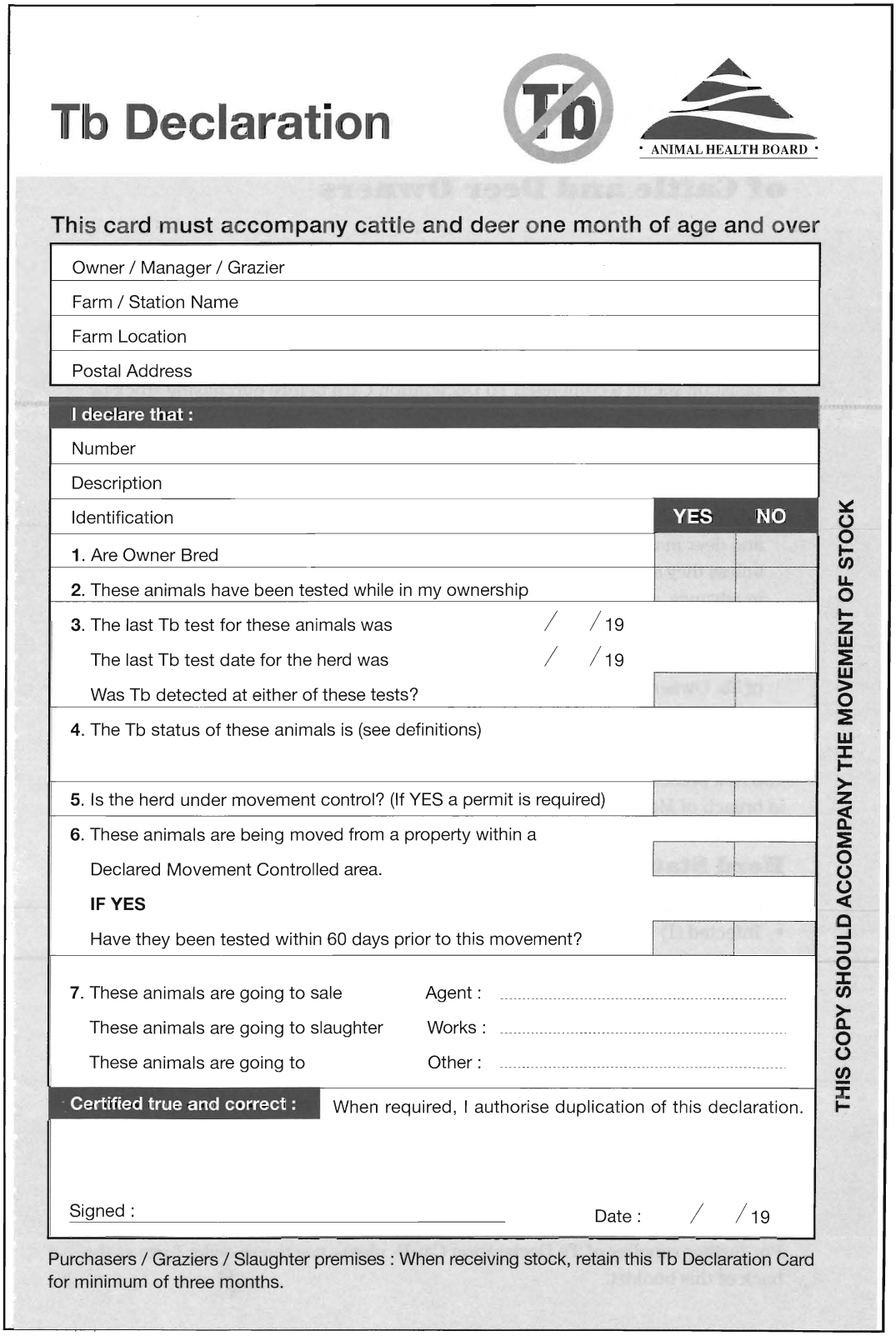
The primary purpose of the scheme is to assist in tracing sources of Tb when infected animals are found at slaughter. It is hoped that this system will eventually result in the disease being eradicated from New Zealand altogether.

The scheme requires that from 1 July 1999 all animals must be officially tagged and identified with a number showing their herd of origin, plus an individual animal number. According to the regulations each animal must be tagged before it reaches one month of age.



In addition to tracing sources of Tb, the new national identification system has further value for us on the farm and within industry quality assurance and performance recording systems.

Each time an animal changes ownership a Tb Declaation card is required to be completed by the vendor and passed on to the purchaser.



Tb Declaration

Tb

ANIMAL HEALTH BOARD

This card must accompany cattle and deer one month of age and over

Owner / Manager / Grazier	
Farm / Station Name	
Farm Location	
Postal Address	

I declare that :		
Number		
Description		
Identification	**YES**	**NO**
1. Are Owner Bred		
2. These animals have been tested while in my ownership		
3. The last Tb test for these animals was / /19		
The last Tb test date for the herd was / /19		
Was Tb detected at either of these tests?		
4. The Tb status of these animals is (see definitions)		
5. Is the herd under movement control? (If YES a permit is required)		
6. These animals are being moved from a property within a Declared Movement Controlled area.		
IF YES Have they been tested within 60 days prior to this movement?		

7. These animals are going to sale Agent : .....

These animals are going to slaughter Works : .....

These animals are going to Other : .....

Certified true and correct : When required, I authorise duplication of this declaration.

Signed : _____ Date : / /19

Purchasers / Graziers / Slaughter premises : When receiving stock, retain this Tb Declaration Card for minimum of three months.

THIS COPY SHOULD ACCOMPANY THE MOVEMENT OF STOCK

A Tb Declaration card must also accompany any stock sent to a processor. This provides for a system of traceabilty whereby any animal found to be infected at slaughter can be traced back through the supply chain to herd of origin.

SYSTEMS OF TRACEABILITY

To ensure a credible traceability scheme, an effective and efficient system is required that is able to act as a bond to unite the various links in the supply chain. If a link in the supply-chain is broken, then the safety and integrity of our food supply-chain is threatened.

The cornerstone of any traceability system is individual animal identification. Therefore the next step is the need for a tamperproof individual animal identification scheme that is able to accommodate the recording and storage of information about each animal from 'paddock to plate'.

There are several systems available to fulfil this requirement and new systems will be developed over time according to the needs and demands of the producer, the processor, the retailer and the consumer.

The following systems of traceability are used worldwide throughout the beef industry and each of the available methods has its own advantages and disadvantages.

- **Ear Tag** Printed
  Printed / Electronic
  Electronic
  Brass
- **Bolus** (in rumen of animal)
- **Tail Tag**
- **Hide Marking**
- **DNA TraceBack™ System** [1]
- **Under-the-skin** (glass chip in animal's ear)

The cost and reliability of each of the above methods of individual animal identification and traceability vary considerably. Currently the New Zealand beef industry predominantly relies on the system of ear tagging initiated by the Animal Health Board in its efforts to control and monitor the spread of TB in this country.

[1] IdentiGEN TraceBack™ System, IdentiGEN Animal Genetic Services, USA

The **Ear Tag Order Form** produced by Wrightson Rural Supplies illustrates the type and variety of ear tags available to New Zealand farmers in order to comply with the new Animal Health Board regulations. (Refer to **Page 32**). As well as providing vital information to the Animal Health Board, this system of animal tagging also serves the needs of the other groups who make up the supply-chain.

For example when the animal arrives at the meat processing plant, the information provided on the tag is recorded against the carcass information. Consequently the on-farm system now becomes the processor's system as each carcass is issued with a barcode that is followed through the processing system and eventually recorded against the carton of beef that is now ready for transportation.

The DNA **TraceBack**™ system is a more recent and indeed high-tech method of individual animal identification. At this point in time it is also an expensive option and certainly not a viable one for the average New Zealand beef producer. However it is anticipated that this option will become more cost effective and it may well represent the way of the future as far as an effective, efficient and accurate system of traceability is concerned.

Essentially **TraceBack**™ ensures the complete traceability of meat through the production and distribution chain by using the animal's unique DNA profile to track its identity from the processed meat back to the individual animal.
The operational structure of the **TraceBack**™ system is shown in the graphic on **Page 33**.

In Europe it is now possible to request information regarding the origin of a particular piece of steak in a restaurant. In some establishments the restaurateur is able to advise the customer of the country of origin, as well as the name of the producer and the farm on which the animal was raised.

As technology improves, so too does the consumer's ability to have access to more and more information regarding what they are eating and where it has come from. In some supermarkets in France, it is even possible to scan the barcode from a pack of meat that you have purchased using an attachment connected to your PC and automatically gain access to the producer's web site!

Health scares in recent years have alerted customers to the need for efficient systems of traceability to ensure the safety of the human food chain.
As technology improves and the price of new technological advances become less prohibitive, the systems of traceabilty available will become more accurate and efficient and their use more widespread.

Official AHB Approved Eartag Order Form

For all Eartag Orders fax 0800 FOR TAGS (0800 367 824)

Wrightson Rural Supplies

Name .....

Address .....

.....

Phone .....

Order No. .....

Wrightson Account No. .....

Warehouse No. .....

OFFICIAL AHB HERD No.

Primary Tags

SIZE OPTION (Tick one only)

A ☐ DOUBLE MEDIUM
B ☐ MEDIUM MALE LARGE FEMALE
C ☐ DOUBLE LARGE
D ☐ LARGE MALE MAXI FEMALE
E ☐ BUTTON MALE* LARGE FEMALE
F ☐ BUTTON MALE* MAXI FEMALE
G ☐ BUTTON MALE* MEDIUM FEMALE

*Button tags have limited marking options

FRONT TAG

QUANTITY REQUIRED ☐

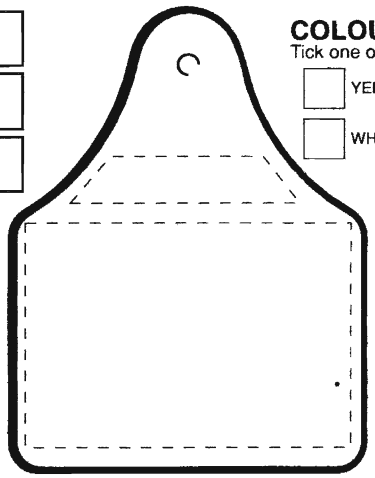
START No. IF REQUIRED ☐

YEAR CODE IF REQUIRED ☐

OFFICIAL MARKING
As specified by the Animal Health Board.

Primary front tags are yellow only.

Tag sizes shown are approximate only



BACK TAG

COLOUR OPTION (Back Tag only)
Tick one only

☐ YELLOW ☐ ORANGE ☐ RED ☐ PINK
☐ WHITE ☐ GREEN ☐ BLUE ☐ PURPLE

If no colour chosen, tags will automatically default to yellow.

Tick one only

☐ **Same animal numbers as front tag**
☐ **Name and same animal number as front tag**
☐ **Blank**
☐ **For selected numbers, use reverse side of this form**

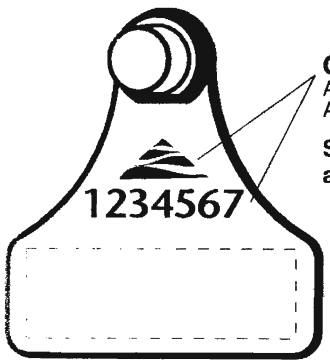
Secondary Tags

SIZE OPTION (Tick one only)

A ☐ DOUBLE MEDIUM
B ☐ MEDIUM MALE LARGE FEMALE
C ☐ DOUBLE LARGE
D ☐ LARGE MALE MAXI FEMALE
E ☐ BUTTON MALE* LARGE FEMALE
F ☐ BUTTON MALE* MAXI FEMALE
G ☐ BUTTON MALE* MEDIUM FEMALE
H ☐ DOUBLE BUTTON*

*Button tags have limited marking options

QUANTITY REQUIRED ☐



FRONT TAG

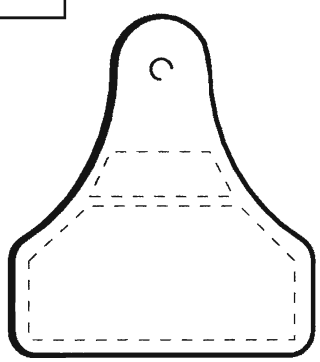
OFFICIAL MARKING
As specified by the Animal Health Board.

Secondary front tags are yellow only.

Tick one only

☐ **Same animal numbers as front tag**
☐ **Blank**

Tag sizes shown are approximate only



BACK TAG

COLOUR OPTION (Back Tag only)
Tick one only

☐ YELLOW ☐ ORANGE ☐ RED ☐ PINK
☐ WHITE ☐ GREEN ☐ BLUE ☐ PURPLE

If no colour chosen, tags will automatically default to yellow.

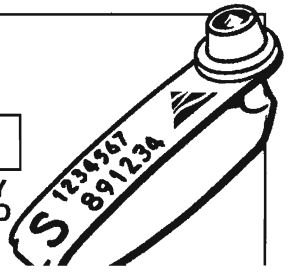
Tick one only

☐ **Same animal numbers as front tag**
☐ **Name and same animal number as front tag**
☐ **Blank**
☐ **For selected numbers, use reverse side of this form**

Direct to Slaughter Tag

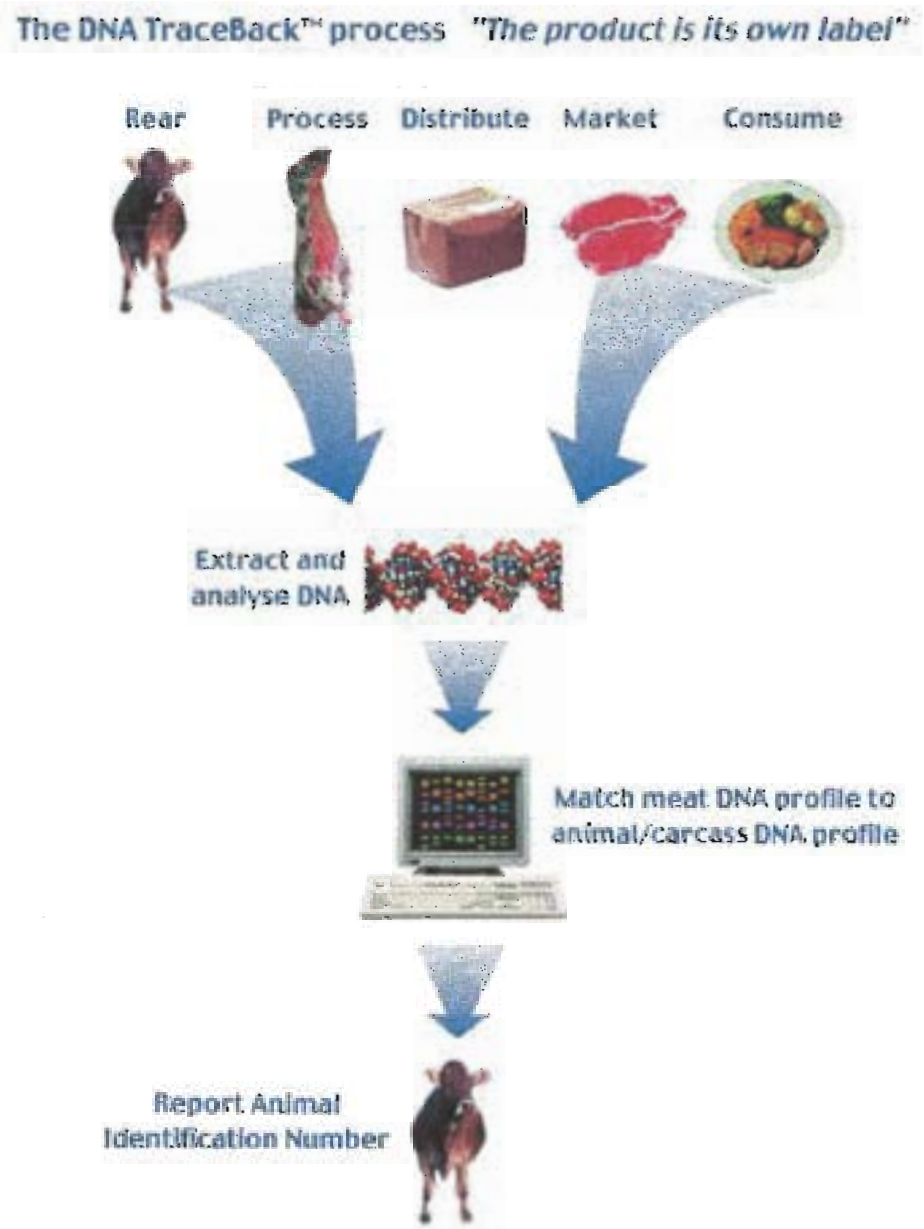
OFFICIAL MARKING
All markings on the Slaughter tag are determined by the Animal Health Board.
Yellow only.

QUANTITY REQUIRED ☐



SPECIAL REQUIREMENTS/NOTES

DNA TraceBack System - Operational structure



CONCLUSION

Changes in consumer behaviour – the way we view the world around us, the way we perceive food, the way we shop and cook and the types of food that are available – have all lead to a demand for reliable systems of traceabilty in our food-supply chain.

To date the New Zealand beef industry has dealt with concerns such as Tb, Animal Health, Quality Assurance and Food Safety as separate issues. I advocate that capturing as many issues as possible in an industry-wide system will be the best practice long term. There will always be some things that are market or company specific but the basic issues are generic.

From 1 December 1999 it will be a Government requirement for all suppliers to provide a signed declaration as to the health status of their cattle being consigned to slaughter.

During the course of this year a National Livestock Declaration form has been looked at in depth by the industry, sadly this concept has been stopped by the non-participation of one group in the industry. In place of this however, all parties in the North Island have agreed to a **Vendor Declaration** form; (refer **Page 35**). Each company will have its own logo stamped on the document with the actual forms being identical – this is indeed a big step forward.

The Vendor Declaration includes the requirement to supply details on the following issues - animal health, disease (Johnes), growth promotants - and will work in conjunction with the Animal Health Board's new ear-tagging initiative that came into effect on 1 July 1999.

The introduction of the Vendor Declaration will reduce duplication, simplify compliance requirements and help to establish and maintain a system with integrity at a realistic cost to each of the participants in the supply chain.

It is vital that the primary focus of a traceability system in the beef industry remains clear to all the parties involved – that is, to provide the consumer with a safe eating experience every time. Therefore for any system to be credible and work effectively it is necessary that each sector of the supply chain take responsibility for their respective fields of interest.

One thing that is certain is that **Traceability – 'Paddock to Plate' Beef Production** – is here to stay.

VENDOR DECLARATION – BOVINE

AFFCO NEW ZEALAND 1

Supplier No.

Owner's Name: _____

Farm Name: _____ Farm Location: _____

Postal Address: _____

_____ Phone No: ( ) _____

Description of stock *(numbers)*

Heifers		Steers		Cows		Bulls	

Brand:

Time animals yarded for transport: _____ am pm Destination: _____

Tb Status Declaration

What is the Tb Status of the herd? Tick appropriate status and add the Index Number if the animals have a 'Clear' or 'Infected' number (eg C-6 or I-2)

CLEAR	
WORKS MONITORED	
SUSPENDED	
INFECTED	

	TICK Yes	No
Are these animals ownerbred?		
Have these animals been tested while in your ownership?		
Date of last Tb test for these animals was?		
Date of last Tb test for the herd was?		
Was Tb detected at either of these tests?		
Is the herd under Movement Control? **IF YES,** a permit is required		
Are these animals being moved from a property within a Declared Movement Control area?		
IF YES have the animals been tested within the last 60 days?		

Growth Promotant (GP) Status Declaration *(Indicate the situation for each question by ticking the appropriate box)*

1. Have you as the current owner / manager, or any previous owner / manager implanted any of these animals with a growth promotant?		
2. Are all of the implanted animals identified with the official GP eartag?		

Animal Vaccination / Treatment Status *(Indicate the situation for each question by ticking the appropriate box)*

1. Have you as the current owner / manager, or any previous owner / manager treated any of these animals in the last 60 days (or up to 180 days for intraruminal devices)?		
2. Were these treatments licensed animal remedies used in accordance with the label directions.		
3. Are these animals outside any meat withholding periods?		
4. Have you as the current owner / manager, or any previous owner / manager vaccinated these animals against Johnes disease?		
5. Are the Johnes vaccinated animals identified with the official earmark?		

DECLARATION: I declare that the above information is true and accurate.

Owner / Manager Signature _____ Date ___/___/___

Name of Transport Company _____ Truck No. _____

Time loaded: _____ am pm Time Unloaded: _____ am pm

BIBLIOGRAPHY

AFFCO New Zealand Vendor Declaration (Bovine)
An AFFCO Livestock Publication
November 1999

A Guide to Quality Livestock Supply
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