"Improving product quality"

Good morning. Thank you for inviting me to open this session **"Improving product quality"**.

WHAT IS MEAT QUALITY ?

To begin with I thought it would be useful to review what quality means and how that relates to meat science, before moving on to discuss some of the key areas of interest for meat processing and marketing companies.

Classic definitions of quality have common themes with terms like "fitness for use" and "meeting consumer expectations" as their main threads. A product's quality consists of intrinsic factors that relate to the product itself such as (in the case of a food product) taste, texture, packaging, microbiology, and nutritional value. The quality also includes extrinsic factors such as price positioning, branding, delivery time, shelf life and safety guarantees. The outcome from having quality goods are repeat purchases by customers because the products are differentiated from competitor offerings. This can result in premiums for products that consistently meet quality expectations, and will maximise value for all participants in the value chain.

In the context of meat science we are concerned mainly with intrinsic factors.

Most of our focus in meat quality control is on the production of high quality, chilled vacuum packed primal cuts, and rightly so because that is where the biggest value-add revenue stream exists. There are a wide range of attributes that can potentially influence acceptability of chilled fresh meat.

Consumer studies show that tenderness and flavour are the most important characteristics determining the acceptability of meat. Tenderness is number one. Get this wrong and every thing else becomes immaterial. To the consumer an enjoyable meat eating experience is one that associates meat with being tender, juicy and flavoursome. Visual appearance also is very important in determining the likelihood of purchase of fresh meat. Consumers look for fresh meat that is bright red and trimmed to display the best visual aspect of lean meat.

Less tangible quality characteristics are inferred from information on the label or associated with the branding of the product, such as perceived nutritional value, freshness and microbiological safety. Elements such as animal welfare, the impact of production on the environment, carbon foot print and other extrinsic issues affect the overall value perception, and therefore the quality judgement that is made at the time of purchase.

In summary consumers quality expectations are firstly tenderness and taste; then food safety, nutrition and environmental considerations. We are increasingly finding the factors other than the eating experience are becoming more important and more complex.

As stated earlier, much of our focus in meat quality is on the production of high quality chilled vacuum packed primal cuts, but we should not forget the manufacturing cuts. Quality attributes in these products like the fat content of trims and the control of foreign bodies like plastic, bone and cartilage are very important to our customers in the grinding and small goods industries. Also of importance to buyers of manufacturing meat are water & fat binding capacity of the meat, and other functional attributes.

As you can see, meat quality is a wide ranging topic that encompasses many aspects along the of the whole supply chain.

PROCESSING QUALITY CONTROL

The quality perception by the ultimate consumer of our meat is determined right at the start of the supply chain. Factors such as age, breed, gender, diet, and production system determines the quality of the meat we sell. Manufacturing systems have been put in place in our processing plants to measure, and to a degree, to control the variations in the raw materials we receive so, that we can produce consistent products for market. These systems have over the past 20 or so years radically improved the consistency of our products. Examples are electrical stimulation, on line fat testing equipment and automatic vision based grading equipment.

Going forward our emphasis must be on improving raw materials to improve the amount of material that meets spec when it enters the plant. Process control theory tells us that we need to focus on getting raw materials to spec, and yet a lot of our processes currently rely on selection and rectification of defective quality in plants, this only adds costs, and increases wastage, and makes the process more complex that it should be. An example is the control of e coli in bobby calves, where a number of intervention steps have been initiated in plants, however these have pretty much proven to be ineffective, and have only added costs, reducing returns to all participants in the supply chain. The best control solution is to eliminate the source on farm, before it gets into the processing environment.

In the past our industry has been fragmented with separate groups undertaking farming, processing, marketing and distribution; each with their own criteria for quality, often bearing no relationship to the requirements of the final consumer. This often resulted in confused signals back to producers. Today's modern meat companies commonly have integrated supply chains, where by engaged farmer groups are linked through the supply chain directly to retailers and customer groups. In some cases these supply chains are enabled with product tracking. This model provides an ideal platform for the development of raw materials that are tailored for market, and an opportunity to make a substantial leap forward in matching products to consumers needs.

WHAT ARE THE INDUSTRY PRIORITIES NOW ?

Areas where immediate solutions are required;
- E Coli – last week there was a half hour debate on the Larry King show, discussing whether burgers should be in American diets? this is an issue for beef production and particularly for bobby veal production
- Blown pack spoilage of VP lamb bags in market
- Shelf life of chilled VP lamb (+10 days) – driven by shipping logistics

- Retail colour stability and shelf life of lamb
- Taste and aroma variances (mainly in lamb)
- High pH in winter production of beef and lamb

WHAT ARE THE INDUSTRY PRIORITIES FOR THE FUTURE ?

Our priorities for the future are;
- Development of in-line, real time, measurement and decision making tools that can be used to make decisions in plants to optimise the materials we process
- Ability to feed back collected data to suppliers so they can use the information to continue to modify their products to respond to market requirements
- Development of measurement tools that can be used front of gate to assess quality attributes in the field, so that animals can be assessed against specifications before it is transported to the plant

We have four presentations to follow in this morning's session. Each relates to some of the issues I have raised this morning, and hopefully the outcomes from this work will go some way to resolving the quality gaps that exist today.