



Rod Polkinghorne

Rod has had a long association with the beef industry being actively involved in most sectors.

He and Judy currently own a breeding property at Bairnsdale in Victoria running a 500 cow commercial herd. They have also established Polkinghornes, a new beef concept store in Albert Park, Melbourne, the first to market beef in a format which maximises the use of MSA technology. Their 'paddock to plate' system includes an integrated boning room using newly developed systems to convert MSA information into retail products, a commercial kitchen and new style of retail presentation.

Rod has been responsible for management of the Research and Development of MSA since its inception and has been a driving force in its evolution. The research underpinning MSA received international acclaim in 2000, being awarded the IMS Millenium Prize for outstanding research by the International Meat Secretariat. Earlier research activities include creation of the Storelink program for the MRC and establishment of the Beefcheque program.

Prior to moving to Bairnsdale Rod was active in the feedlot industry having established the Charlton Feedlot in 1971. He was a member of the ALFA Council for 10 years and President for three. He was awarded life membership in 1999. In recognition of his services to the beef industry Rod received the coveted 'Howard Yelland Award' in 1999

GUARANTEEING EATING QUALITY NO IFS, NO BUTS

Summary

Inconsistent eating quality has been identified as a contributing factor to a decline in beef consumption and price over many years. To address this problem the Australian industry committed significant research funds to define consumer preference and develop a grading system that could guarantee consistent quality.

The program, MSA (Meat Standards Australia), has succeeded in meeting these aims. An eight-year consumer testing program involving over 400,000 samples and 60,000 consumers has established grade standards directly linked to consumer response. Traditional carcass grading systems fail to deliver consistent quality due to the restricted number of input factors and the inherent quality range between cuts from the one carcass.

The MSA grading model has overcome these restrictions by estimating a consumer score for each muscle using a comprehensive range of inputs applied differentially by muscle. The MSA model scores allocate each cut to either a fail or three grades of consumer satisfaction within cooking method.

This provides an opportunity to simplify product description and pricing by marketing under a grade by cooked result description without the need for consumer knowledge of cuts. This approach can form a sound basis for value based marketing throughout the production chain directly linking returns to consumer satisfaction.

Guaranteeing Eating Quality – No Ifs, No Buts

The great news is we can do it! Arguably nothing has damaged our industry more than inconsistent eating quality. Research over the past 20 years has consistently identified variable product quality as one of the key reasons for declining beef consumption. Lack of consumer confidence in purchasing a reliable product has contributed to a fall in both price and volume relative to competing products.

Extensive consumer research in the early 1990's led our Australian industry to identify guaranteed eating quality as a major strategic industry imperative and to allocate a considerable amount of money to address the issue. Beef had become a price driven commodity, the antitheses of a consumer product.

Our early research efforts centred on two questions:

- ❑ Did consumers agree on what was good or bad?
- ❑ If they agreed could we identify quality prior to sale and consumption?

Our stroke of luck or genius was to base our program, now known as MSA (Meat Standards Australia), entirely on consumer testing. Results from consumer testing were used to resolve the two key questions and to slowly but steadily unravel the mysteries of guaranteeing eating quality.

The fantastic news, evident from very early testing, was that consumers did know their beef when they ate it. We used the consumer results directly to establish grade standards and boundaries relating to tenderness, flavour, juiciness and overall satisfaction to each other and to an overall 'pass;' score for each level of satisfaction.

While odd consumers occasionally gave an odd result the consensus view was extremely strong and amazingly precise. We now routinely expect consumer groups to identify fine differences in eating quality where objective measurement often fails. This has been particularly true in studies involving stress and animal behaviour issues.

The initial bad news was that we had no ability to predict eating quality. All our conventional tools of dentition, meat colour, marbling, fat colour and cut type were either totally useless or so confounded by other factors that they fell well short of a useful consumer tool. Conventional grading – Ausmeat based, USDA grades, JMGA grades, EUROP grades were of little value. For a start they graded a carcass rather than cuts and failed dismally to predict the interactive effects of the many factors which contribute to eating quality.

Fortunately our industry was sufficiently committed to fund the scale of testing needed to resolve the principal issues. When you test over 400,000 individual samples across five cooking methods and 60,000 consumers you either find answers or establish that there aren't any. The good news is there are.

Most of the factors which drive eating quality have been known for decades. The trickier bit has been their interaction and relative importance. How do I expect a secondary cut from a young prime carcass to compare in eating quality to a prime cut from an older secondary carcass? How does the relationship vary with ageing or cooking method? In our database we recorded everything we could regarding every cut tested and then matched each factor to the consumer scores.

In the early days we established pathways, equivalent in concept to various Industry blueprints or supplier specifications. These imposed a series of non-negotiable hurdles each of which had to be cleared for a given set of cuts to grade. The practical problem was that those with a single or few hurdles failed to remove all the poor product whereas those that enforced sufficient restrictions to remove all the poor product also removed a large percentage of satisfactory product.

The breakthrough for us was the development of an interactive model which in essence created a consumer points score for each cut by cooking method. Points were added or subtracted for a full range of inputs and interactions with the final score determining the grade. It was a great piece of applied statistics, identifying a series of factors and relationships that could form a basis for eating quality prediction.

The factors we now use for prediction are;

- ❑ Animal weight for maturity; calculated by referencing carcass weight against skeletal ossification with adjustment for sex and muscle.
- ❑ Bos indicus percentage cross checked by hump height related to carcass weight and applied differently across muscles.
- ❑ HGP (hormonal growth promotant) interacted by muscle and cut ageing period.
- ❑ A cut by cut adjustment for calves slaughtered directly off their dams relating to a milk diet.
- ❑ Sex applied on a muscle by muscle basis.

We require standard practises in animal handling prior to and during slaughter to minimise stress and reduce variation.

Treatments applied post slaughter and included as prediction inputs are;

- ❑ Carcass hanging method applied on a muscle basis and interacted with ageing.
- ❑ Marbling with a strong muscle by muscle interaction.

- Rib fat depth with a minimum to assist controlled chilling conditions.
- Ultimate pH and loin temperature within a 'window' of pH and temperature decline from slaughter to rigor mortis.

A consumer score is then predicted for 40 individual cuts which is in turn adjusted for cooking method and days aged.

It sounds complicated and the calculations are, but the work is done by a computer model leaving the humans involved to work on utilising the answers rather than calculating them.

MSA science has come a long way over ten years. Its application has also developed although at a more uneven rate. Much of the basic work has been widely used in the industry and eating quality knowledge has massively improved. Brands have been established using MSA to underpin their quality. Some industry segments and organisations are content to use a few bits and pieces to improve background quality without adopting MSA grading in full while others attempt to use the knowledge to its fullest.

The model can be used purely to identify and harvest cuts which meet a preset consumer standard with no change to the base system. Alternatively the knowledge can be used to maximise the eating quality of all parts of every carcass thereby deriving maximum consumer value. Much of the difference in approach is driven by the degree it is believed additional consumer value can be captured by increased prices.

In a commodity culture and in an era where the mantra of supply chain efficiency, often code for further supplier price reduction, is driving retail chains it is a fairly brave step to pursue a value equation based on higher prices for improved consistency and quality.

As a beef producer fortunate enough to have driven the research program it was natural to favour the more difficult approach. Farmers believe in impossible challenges anyway and the only route to improved farm returns is through increased industry revenue and a strong value based price linkage to reward best practice.

Consequently over the past few years my partner and I have attempted to apply MSA to its full potential – establishing a retail store in Albert Park, an inner city suburb of Melbourne.

The base presumption has been that beef is 'worth what it eats like'. Pricing should infallibly reflect the eating experience providing both a sensible non-confusing consumer message and an in-built incentive for quality improvement.

The second core element was to simplify product description and labelling. If traditional cut descriptions and pricing relativities did not work why use them? We have implemented a description system which simply states a 3, 4 or 5 star result by cooking style. We sell a result, not a raw material. No consumer knowledge is necessary or expected.

Having established a price by quality by usage base we then addressed the allied disciplines of building a strong brand culture and developing a product mix which effectively marketed the carcass in balance. This has involved the use of an in-store kitchen and chefs to produce a range of wholesome homestyle meals which are ready to heat and eat. Our system then 'closes the loop' by paying the boning room and producers, both ourselves and other suppliers, a direct percentage of the ultimate retail value.

This is established by applying the actual recorded weight of each individual muscle at boning to its related MSA grade result and the consequent retail return. This establishes a direct reward or penalty for eating quality variation and a strong incentive for improvement. Even in relatively uniform groups of cattle the farm value difference is typically 50c per kg of carcass weight.

The store has been very successful in developing a loyal customer base and continues to grow steadily. There is a lot of communication involved to have customers understand the offer and believe the claim of guaranteed quality. People have been conditioned by over exposure to beef promotion that made extravagant promises then failed to deliver. It's a major industry problem. Consumers inherently believe that 'beef varies' and it seems that direct repeated experience with a truly consistent product is the only real means to redress the history.

Once convinced however loyalty follows, consumption increases and quality rather than price becomes the primary value driver.

As individual small-scale producers and retailers and as part of the wider industry we believe consistent quality backed by straightforward accurate description and pricing is the key to survival and growth. There is no excuse for a poor beef meal and no long term future for an industry that fails to deliver a guaranteed consumer product.