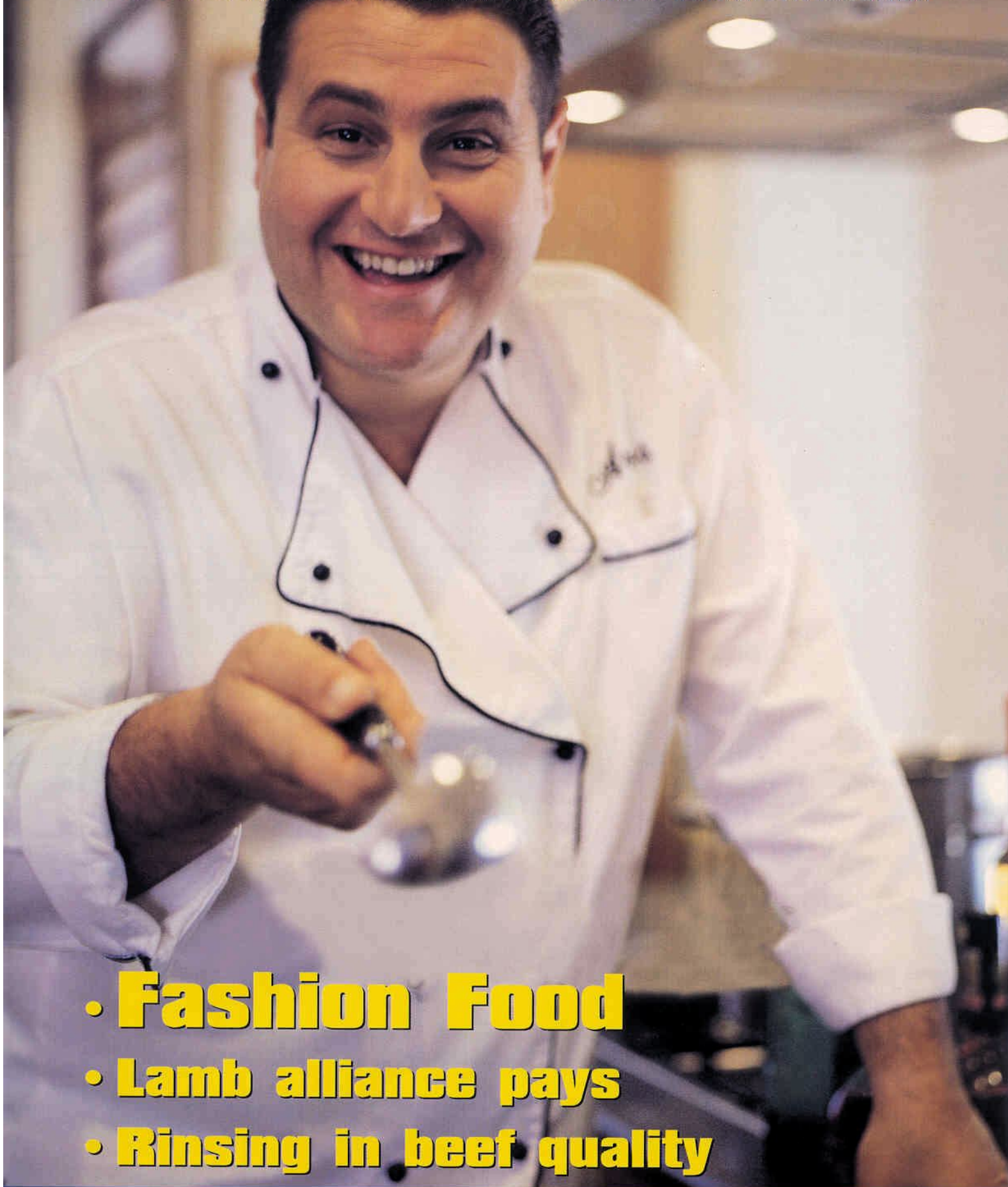




THE AUSTRALIAN MEAT INDUSTRY

BULLETIN

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- **Rinsing in beef quality**

Vascular rinsing - another step to better meat quality

Consistent quality, greater food safety and a safer and cleaner working environment all combined with quicker turnover are some of the benefits delivered by vascular rinsing, an evolving technology which is establishing a reputation with local meat processors.

The Process

Vascular rinsing is the process of rinsing the residual blood from a carcass immediately after conventional stunning and bleeding. An automatic rinsing station is incorporated in the chain where a specially designed catheter is inserted in the carotid artery and rinsing solution pumped through the vascular system for about three minutes. The catheter is then removed and the carcass continues along the chain as normal.

The rinsing solution is water chilled to about 10°C containing 2% salts and sugars - similar rates as found in blood. The sugars and salts are certified organic and can be used for organic beef. The volume of rinsing solution is automatically calculated for each carcass at about 10% of live weight.

The rinsing solution is prepared and dispensed using food standard tanks and delivery systems. Town water is purified, chilled and then mixed with the substrate and UV sterilised. The rinsing station itself is computer controlled which ensures the correct volume is applied to each body and the appropriate sanitary procedures are followed for equipment and operators for each catheter insertion and removal.

Rinse & Chilled™ carcasses do not need electrical stimulation.

BETTER meat colour, fewer dark cutters and satisfied customers are the main reasons why Geelong based Meat processor M C Herds has adopted vascular rinsing as standard practice on their kill floor.

Herds use the fully quality assured Rinse & Chill™ system provided by MPSC Australia, the Australian division of an American company of the same name.

MPSC's John Marlette describes Rinse & Chill™ as an evolving technology which, having been established as absolutely safe, is delivering a growing range of meat quality and food safety benefits as its application is refined by commercial users.

Meat Colour

Independent trials by MSA have established that vascular rinsing has a positive effect on meat colour making meat lighter in colour. This trial showed it had no effect on ultimate pH.

Anecdotal observations are consistent with these findings. M C Herd, director Frank Herd said the improvement in colour in "good" carcasses was marginal but it made a big difference in carcasses which potentially had darker meat.

Boning room Pacific Meat Packers's, Leo Suszko confirmed vascular rinsed carcasses were more uniform in colour. Mr Suszko identified a number of other advantages. He said the meat from rinsed carcasses was more easily separated from the bone giving better yields and worker safety. He said bone appeared "whiter" which enhanced the look of bone-in product.

Food safety

Independent trials show food safety and keeping quality is improved by rinsing. Trials by the University of Minnesota compared carcasses, vacuum packed product and ground beef from conventional and rinsed carcasses. Rinsed carcasses showed a 60% reduction in coliform levels and an 80% reduction on E. coli levels. In another trial rinsed product showed greater resistance to contamination. In these trials rinsed and non rinsed product was inoculated with pathogens. Pathogen development was much slower in products from rinsed carcasses.

This finding is supported by Australian retailers who report mince from rinsed carcasses has a better shelf life.

MPCS claim rinsing makes hide removal easier. This is attributed to changes in the nature of the hide-carcass

interface caused by the rinsing solution. Rinsed carcasses show less external contamination due to the need for less force and less airborne contamination and a changed carcass surface more able to inhibit bacterial growth.

Mr Suszko, whose boning room receives a lot of carcasses within 24 hours of slaughter said rinsed carcasses were "cooled from within" and rarely had temperature problems. He said their own trials had shown products from rinsed carcasses had better keeping quality, due to the combined effects of the rinsing process.

Eating quality

MSA consumer trials found rinsing did not affect the eating quality attributes of beef. Consumers sensory testing found no differences in a range of cuts that were grilled, roasted and stir-fried. This trial used good yearling cattle processed using industry best practice and compared rinsed cattle with conventional processing.

A side benefit of rinsing is the sharply reduced amount of blood residue in the offal and head and drip along the kill chain and on chiller and transport floors. Residues are mainly water and easy to wash off.

Rinsing is not without some down sides. The 1999 MSA trials found rinsed carcasses showed increased shrink and greater purge loss from vacuum packed products, particularly from forequarter cuts. Some end users find chucks and cube rolls from rinsed carcass have inconsistent meat texture. John Marlette recognises this was a problem under certain conditions. He said poor meat texture had been reduced to low levels with refinement of the rinsing procedure by MPCS and its processor customers.

The Smith family's Milton Districts Meats adopted rinsing late in 2002. Greg Smith who is responsible for processing operations said rinsing had improved meat quality and was responsible for a 30% growth in sales to 450 bodies per week. About three quarters of their production is traded as carcasses with the remainder bagged in their boning room.

Milton District Meats processes a variety of British, Euro and Brahman cattle and young bulls for their Asian clients. The current drought has further reduced quality and increased variability. Mr Smith said rinsing lifted the colour of marginal carcasses to levels acceptable to ►

► the retail trade and improved tenderness. He said rinsing improved the colour of carcasses in the Ausmeat 2 to 4 range to Ausmeat 1c or better.

Trials through their boning room con-

firmed rinsed product has an excellent shelf life which Mr Smith attributed to lower residual blood levels. He said they were not finding increased levels of carcass drip or purge in bagged product..

He said customer response had been overwhelmingly positive with one major customer transferring his account to Milton on the basis they could supply rinsed product.

The Rinse & Chill™ process is currently used by M C Herd, Geelong, Hardwick, Kyneton, Burrongong, Young and Milton District Meats. More than 750,000 carcasses have been processed this way since Rinse & Chill™ was adopted by Australian processors.

John Marlette said each installation was customised to meet the needs of individual plants and their customers and then further refined to meet the genetic and seasonal variation in cattle processed. Rinse & Chill™ has been under development for more than 15 years. ■



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