



meat standards

australia

“Meat Standards Australia is the world’s only
consumer based eating quality grading system.”

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Eating quality of beef is of paramount importance to consumers. They want a palatable, consistent and safe product.

Meat Standards Australia (MSA®) is a tenderness guaranteed grading program that labels beef with a grade based on eating quality. All MSA graded beef is labelled with a guaranteed grade and recommended cooking method to identify beef eating quality according to consumer perceptions. All beef underpinned by the MSA guarantee has met strict criteria to ensure it meets consumer expectations for tenderness, juiciness and flavour.

The Consumer Standard

Over 81,000 consumers have participated in taste panels of over 567,000 cuts of beef to determine the MSA eating quality grade. Consumers rate tenderness as the most important factor.

How the MSA grade is calculated

MSA Certified Graders collate information provided from the cattle producer, supervise processing standards and collect individual carcass attributes using a uniform set of Standards including meat colour, marbling, fat depth, maturity and ultimate pH. The results of the grading are allocated to the carcass.

The MSA grade can be a 3, 4 or 5 star and includes primal quality grades, ageing requirements and cooking method.

Integrity

All participants in the program are licensed to use the MSA Trademark, and certify products via an approved Quality Management System in accordance with the MSA Standards Manual. Licensees are subject to independent annual random audit programs for compliance to the Standards. MSA® Standards are backed by independent audit to the AS/NZS IS09001/2000 Standard.

production

An important element contributing to eating quality is the on-farm or feedlot management of cattle.

Key factors:

Breed

All cattle breeds are eligible to receive an MSA grade; however tropical breed content can impact the eating quality of many cuts. The lowest tropical breed content required for environmental tolerance is recommended.

Nutrition and growth

It is recommended for cattle to be on a minimum rising growth plane of 900 grams per day for 30 days prior to slaughter. This ensures sufficient glycogen levels for adequate growth.

Glycogen

Insufficient glycogen levels can lead to high pH in the carcass and its subsequent downgrading in quality and value. Levels of glycogen must be sufficient to enable the animal to cope with the stress of mustering, yarding and any new environments experienced during pre-slaughter consignment. Increased stress and activity can rapidly deplete glycogen levels.

Handling

Leading up to slaughter, cattle must be handled in a manner that keeps stress to a minimum. For further information see MSA tips & tools; MSA requirements for handling cattle.

Transport

Cattle should be loaded at the recommended densities set out in the trucking code of practice, preferably without the use of goads or electric prodders. Avoid transporting cattle in extreme weather conditions.





MSA licensed processors ensure that all systems comply with MSA program requirements.

Key factors:

Pre-slaughter lairage

Cattle must be consigned either direct from farm or through the saleyard's pathway.

Processing treatments

Animals must be processed according to the MSA standard. Critical points include maintaining carcass pH, temperature decline via chilling regimes and electrical inputs as required by the Standard. These treatments are incorporated into the existing plant system.

Carcass attributes

Individual carcass attributes are collected by an MSA certified grader. The attributes are calculated through the MSA grading model and an eating quality grade is generated for individual carcass cuts according to cooking method.

Product labelling

Cartons and carcasses must be correctly labelled according to the level of quality, recommended cooking method and ageing requirements. This involves inclusion of MSA specifications on carton end-panels or MSA boning group stamps on the carcasses.

processing



Ultimate pH (pHu)

One of the most significant indicators of eating quality involves the measurement of lactic acid within the muscle taken from a pH probe. The optimum pH level of meat is 5.7 and below. Carcasses with pH 5.71 and above are ineligible for an MSA grade.

Maturity (or Ossification - OSS)

This is the assessment of the physiological age of a bovine animal. The term 'ossification' refers to cartilage turning to bone in the spinous processes in three sections along the backbone; sacral (tail), lumbar (loin) and thoracic (head). The shape and colour of the rib bones are also examined to determine scores. Scores range from 100 to 590.

Meat Colour (MC)

On the chilled carcass the rib eye muscle (M.longissimus dorsi) is assessed and scored against the AUS-MEAT Meat Colour Reference Standards. Meat Colour 4 and above is ineligible to receive an MSA grade.

MSA Marbling (MSAMB)

Marbling is assessed at the M.longissimus dorsi at the ribbing site of the carcass. It is calculated by evaluating the amount, piece size and distribution of marbling in comparison to the MSA standards. Scores range from 100 to 1190.

Fat Distribution

The thickness of subcutaneous fat at a specified rib is measured and must be 3mm or greater. Subcutaneous fat measurement may also be recorded at the P8 (rump) site where it must be 5mm or greater. Fat must be evenly distributed over the loin, hind and forequarters, with no more than 10cm² void area. Even fat coverage enables uniform chilling rates throughout the carcass.

Hump Height

Hump height is measured in gradients of 5mm and is primarily used to verify the Tropical Breed Content indicated on the MSA vendor declaration. Tropical breed percentage score may also be used.

grading



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msa quality levels

MSA certified beef provides a three tiered consumer guarantee of eating quality.

A specific MSA label is applied at the point of sale. The label must include MSA quality grade: 3, 4 or 5, recommended cooking methods and required ageing period.

Additional information required to calculate MSA grade includes;

- > Sex
- > Selling Method
- > Hot standard carcass weight
- > HGP usage
- > Milk fed vealer (yes/no)
- > Vascular infusion (yes/no)

Branded beef companies may impose additional specifications to further differentiate their brand. These company specifications can be applied at the discretion of the establishment where carcasses are presented for grading. They are generally imposed in addition to MSA requirements.

company specification



MSA3



MSA4



MSA5

All primals and sub-primals receive an MSA quality grade with recommended cooking method.

10 msa cooking methods



Panfry / Grill



Casserole



Roast



Corn



Stir fry



Shabu shabu



Thin Slice



Yakiniku



Cooking methods are some of the most important factors in consumer satisfaction and eating quality; they are used to optimise the performance of any piece of beef.

panfry / grill

Steaks should be cut to a minimum 25mm thickness.

- > Brush meat with oil instead of adding oil to pan.
- > Ensure that cooking surface is hot – there should be lots of sizzle.
- > Place meat on surface and look until moisture appears, then turn (once only).
- > Place steaks in a warm place, or cover with foil and rest for 3-5 minutes.

The perfect steak

Rare

- > Cook for a few minutes per side (depending on thickness).
- > Turn once only and cook until steak feels 'very soft' with back of tongs.

Medium

- > Cook on one side until moisture is pooling on top surface.
- > Turn once only and cook until moisture is visible and steak feels 'springy' with back of tongs.

Well Done

- > Cook on one side until moisture is pooling on top surface.
- > Turn once only and cook until moisture is pooling on top.

roast

Preheat oven to recommended temperature - refer table below.

SUGGESTED COOKING TIMES / 500G	Oven temp	Rare	Medium	Well done
Internal meat temperature		60°C	65-70°C	75°C

BEEF

Rib eye/Scotch fillet, Rump, Sirloin, Fillet, Topside	200°C	15-20 min	20-25 min	25-30 min
Silverside, Blade, Round	160°C	20-25 min	25-30 min	30-35 min

- > Preheat oven to recommended temperature – refer table above.
 - > Place roast on a rack in a roasting tray.
 - > Follow suggested cooking times – refer table above.
 - > Periodically check internal temperature using a meat thermometer – refer table above.
 - > Remove from oven and cover with foil when cooked.
 - > Rest in warm place for 10-20 minutes for large roasts or 5-10 for small roasts (eg mini roasts), before carving.
- TIP: If roast is fillet, brown before roasting.

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stir fry

- > Brush meat with oil instead of adding oil to pan.
- > Ensure that cooking surface is hot – there should be lots of sizzle.
- > Brown meat in small batches (about 200g at a time) to prevent the meat from stewing.
- > Remove meat from pan. Add aromatics (garlic, chilli and/or spices).
- > Stir fry vegetables. Return meat and add any sauces.
- > Heat through and be sure not to bring to the boil.
- > Serve immediately.

TIP: If buying steaks cut into strips of meat to 60mm x 12mm x 12mm.

corn

- > Beef is corned using a selected cure and is prepared by a slow wet cook.
- > Place beef in heavy based pot and cover with cold water, bring to boil.
- > Add desired ingredients then reduce heat to low simmer.
- > Cover and simmer for approximately 25-30 minutes per 500g.

TIP: If serving the corned beef cold, allow the meat to cool in the cooking liquid.

shabu shabu

- > A Japanese variant of the hot-pot cooking method, shabu shabu is prepared at the dining table.
- > Cut beef into 2mm thin slices. For best results, chill the product before cutting on a slicing wheel.
- > Submerge meat in a pot of boiling water or broth and swish back and forth for just a few seconds until slightly pink.

TIP: Cooked meat and vegetables are then usually dipped in sauce before eating immediately.

- > Meat should be cut into 2.5cm cubes.
- > Brush meat with oil instead of adding oil to pan.
- > Brown meat in small batches (about 200g at a time) to prevent the meat from stewing. Set aside.
- > Reduce heat. Add onions, garlic and spices and sauté until transparent.
- > Add flavourings, firm vegetables and liquid. Bring to the boil then reduce heat to low.
- > Cover and simmer for approximately 2 hours or transfer to oven dish and cook on low oven (160°C) for 2 hours.
- > Add soft vegetables in the last 20 minutes of cooking.

TIP: Brushing meat with oil reduces the amount of oil needed and assists in sealing in the juices.

casserole



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yakiniku

- > A Japanese style of barbequing meat, Yakiniku simply means 'grilled meat'.
- > Cut meat into 4mm thin slices. For best results chill the product before cutting on a slicing wheel.
- > Yakiniku is served as a cook-it-yourself dish. The meat, dipping sauces and vegetables are placed on the table with a gas or electric grill in the middle.
- > Place the meat on the grill, cook briefly on both sides and dip in sauce before eating immediately.

thin slice

- > Sliced to 2mm thick, the meat is cooked in a frying pan or on a skillet.
- > Brush meat with oil and ensure cooking surface is hot.
- > Brown the meat in small batches to prevent stewing and remove meat from pan.
- > Cook vegetables and return meat to pan, adding any sauces. Heat through.
- > Serve immediately.

cooking



Branded beef companies have the opportunity to underpin their brand with the MSA Trademark. This is recommended to provide an eating quality guarantee for their product.

This is subject to a brand license agreement with MLA, which ensures the integrity of the product. All beef sold under the license agreement must be MSA certified and the enterprise's quality systems must adhere to MSA Standards Manual for Trademark Usage.

All beef is sold under the company's own brand, using the MSA trade mark as a quality guarantee.

Branded beef companies may also choose to further refine their product specifications to differentiate their product from others in the market.

MLA offers a brand development support program to companies processing a minimum 100 head per week.

Trade

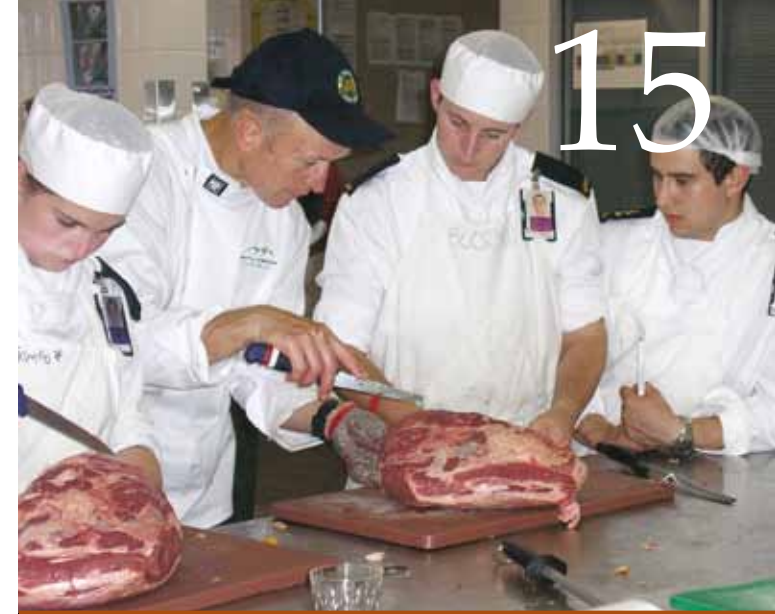
The MSA tenderness guarantee enables end users to guarantee consistently tender beef for their customers.

Participants must be licensed and adhere to the MSA Standards Manual for Trademark Usage which sets out conditions including product labelling and sale, to ensure product integrity. Audits are conducted on all licensed participants at regular intervals to check compliance to the Standards.

Point of sale and marketing support material is available to aid in display and to inform consumer.

Training packages for the trade includes introductions to the MSA program and value adding workshops to maximise the potential of MSA in the trade. Participants report having increased profits on individual primals by up to 25%.

brand development



Training modules have been developed for all participants in the MSA supply chain. Modules range from general program overviews to technical modules for processors and practical modules for end users to capitalise on the MSA technology.

Producer workshops – can be tailored to suit group requirements. Workshops include MSA program overview, producer recommendations and how to implement change on-farm to better meet consumer expectations.

Saleyards & Agents – provides MSA program overview and information regarding managing saleyard cattle to meet MSA requirements. This includes handling and lairage conditions.

Processor training – consists of technical modules for on-site processing staff covering MSA standards and requirements based on each critical control point identified at a processing plant. This training is a prerequisite for MSA licensed processors.

Grader training – accredits company employed chiller assessors to be qualified as an MSA grader. Competencies include carcass assessments such as pH, maturity and marbling measurements.

End user training – includes information on how to eliminate eating quality failure using the MSA technology, including the seaming of primal cuts and use of MSA grades combined with recommended cooking methods.

MSA Red Meat essentials and MSA Red Meat advanced training packages are suitable for everyone within the industry to add value to the beef component of their business, helping to increase profits and customer loyalty.

Eating quality workshops – can be tailored to suit individual enterprises wishing to implement technology to improve eating quality.



eating quality training

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Further reading: MSA tips & tools beef information kit