TIPS & TOOLS

MEAT STANDARDS AUSTRALIA

How MSA grades are determined

Why grade beef?

The aim of MSA grading is to assure consumers that a cut of beef will eat to the quality shown on an MSA label when cooked by the method shown. This simple description system can form a basis for retail pricing and generate product confidence. This removes the guesswork for consumers, enabling them to reliably select beef of the desired quality.

What is beef quality?

For an eating quality grading system to work, consumers have to agree on a definition of 'quality'. If individual opinions differed widely then grading would not be effective. MSA research has examined consumer beef quality judgements in detail using the results of more than 181,000 consumers, across 13 countries and scoring more than 1.3million beef samples. This has proven that groups of consumers have a very consistent opinion on beef eating quality.

How does MSA test consumers?

MSA has developed detailed testing protocols to ensure that the scores obtained relate only to the individual consumer and the beef sample, and are not affected by random influences such as irregular thickness or cooking variation. The protocols also detail issues of sample preparation, order and method of serving. For example, every consumer is served seven samples, which include a high and low quality product. The first sample is common to provide a standardised benchmark with the following six presented following a 'Latin square' arrangement as shown opposite.

Key points

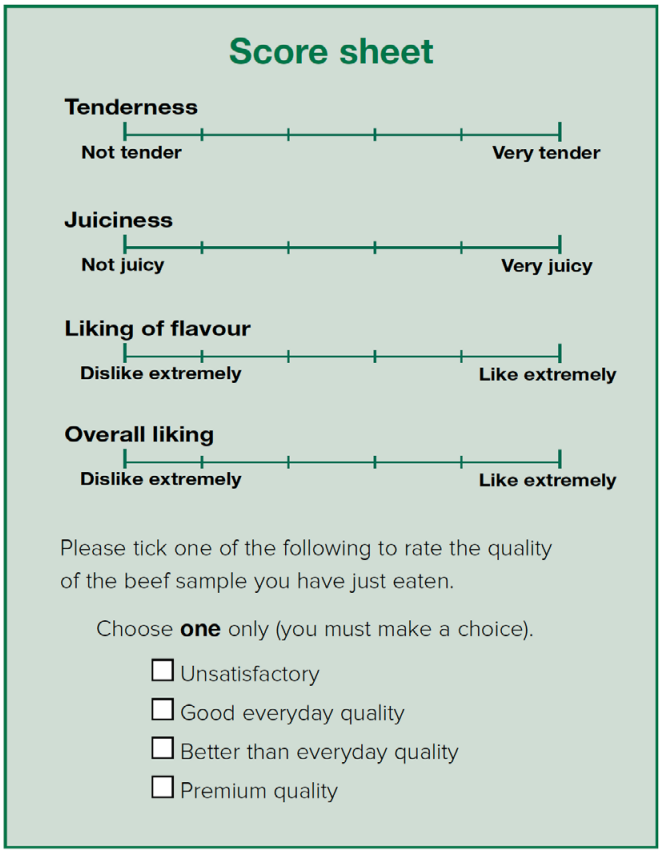
- MSA grades are set from analysis of consumer test results.
- Grade standards are independent of all production factors.
- The MSA eating quality score is a composite of tenderness, juiciness, flavour and overall liking scores.
- The MSA grade score boundaries reflect consumer judgement.

Common link product					
1	2	3	4	5	6
2	4	1	6	3	5
3	1	5	2	6	4
4	6	2	5	1	3
5	3	6	1	4	2
6	5	4	3	2	1

This ensures that each product is served an equal number of times in each position and that each is served an equal number of times before and after each other product.

Consumers are recruited from the community to represent diverse backgrounds and areas. Selection criteria are: 18–65 years of age, eat beef at least once per two weeks and prefer their beef cooked medium.

Each consumer completes a score sheet for every sample tested. This involves marking lines to score tenderness, juiciness, flavour and overall liking and ticking one of four boxes to indicate whether the sample was of unsatisfactory, good everyday, better than everyday or premium quality.



How is the MSA eating quality score calculated?

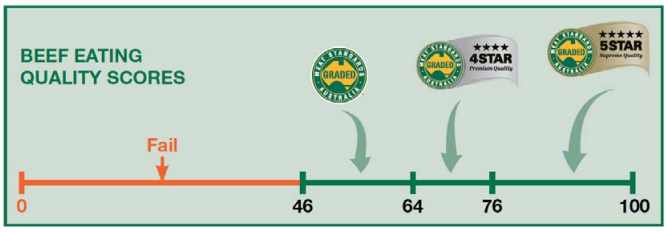
The MSA score, out of 100, is calculated by adding a percentage of the individual consumer scores for each sensory component as follows:

Tenderness	30%
Juiciness	10%
Flavour	30%
Overall liking	30%

These percentages have been established from statistical analysis and provide the best relationship between the 'lines and boxes' marked on the consumer score sheets.

How are the MSA grade standards set?

Each cut x cook combination within the carcase is allocated a score out of 100. These scores will determine the eating quality grade they achieve and can be identified to the consumer. The corresponding scores to grades are reflected in the figure above where, a cut x cook combination between:



- 46–63 is a MSA 3-star, or, good everyday product
- 64–76 is a MSA 4-star, or, better than everyday product, and,
- 77–100 is a MSA 5-star, or, premium product.

A beef cut must achieve a minimum of 46 points to be certified as MSA.

The MSA score that forms the cut-off point between each grade is set from analysis of the consumer test data. The MSA eating quality score is compared statistically to the quality rating box ticked to determine the grade boundaries.

How are consumer results used to develop the MSA grading model?

The grading model predicts how each cut will eat. The system has been developed from extensive consumer taste tests. Ten consumers have tasted each sample e.g. a grilled steak. The samples tested represented a wide range of cuts, cattle breeds, systems, processing practices, ageing times and cooking methods. The highest and lowest two scores are 'clipped' and the middle six averaged to produce the MSA eating quality score used in the database.

Maintaining the system

Consumer standards are continually reassessed through the consumer taste-testing program.

By continually monitoring consumer scoring, grade standards can be adjusted over time in line with any evident change in consumer preference to maintain eating quality satisfaction as well as continual improvement of the MSA model to increase accuracy with further research.

Further information

Visit mla.com.au/msa or
contact MSA 1800 111 672

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