



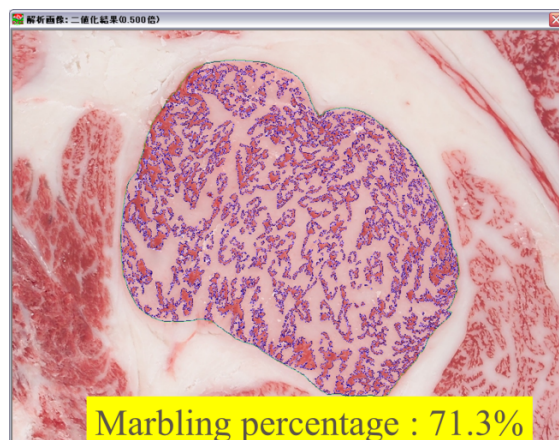
# CARCASS GRADING

Meat Quality Grade is the key if you want to succeed in the Wagyu business. Here at Lone Mountain we pride ourselves as being innovators in the Wagyu business here in the US and what has become a more important aspect of our business over the last decade is the carcass grading.

Unfortunately the current USDA "standard" falls below par when it comes to measuring the attributes the breed has to offer.

In recent years the Japanese have been focusing on developing objective carcass measurement utilizing the latest digital camera technology and image analysis software (Beef Analyzer II) to calculate important traits like;

- Rib Eye Area
- Rib Eye Shape
- IMF%
- Meat Color
- Fat Color
- Fineness/ Coarseness Index – Marbling





In 2010 Lone Mountain acquired a carcass camera from Japan so when referencing the carcass quality grade information (JMGA) from Japan, Lone Mountain carcasses are measured on the same platform.

Although initially, the camera technology was a research tool but it has evolved rapidly in the last 5 years with improved imagery and software development under the direction of Prof. Keigo Kuchida from Obihiro University, Japan to make it commercially viable and is rapidly becoming a fixture in slaughter facilities in Japan and attracting great interest from Countries elsewhere.

Not only does the camera identify traits that hold economic importance, it also measures traits such as fineness / coarseness of marbling that can influence greatly the value of the carcass which is depicted below in the two images.

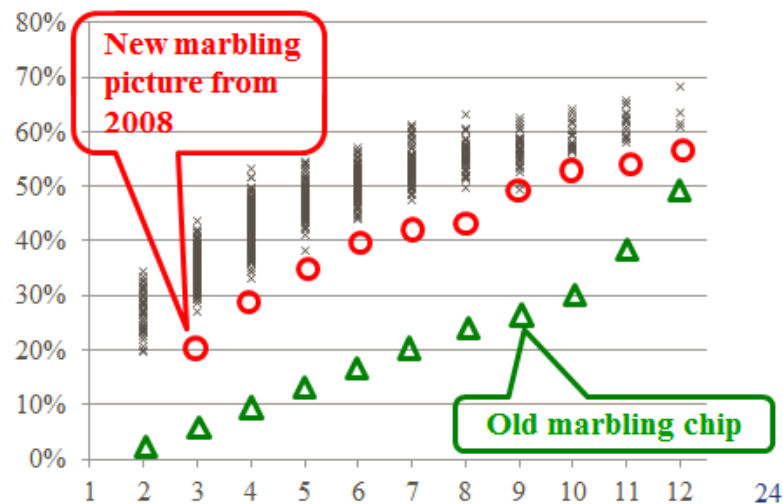


The focus of this trait has been of particular interest to the Japanese and is now increasingly being identified as an important characteristic to those countries producing Wagyu outside Japan.

JMGA (Japanese Meat Grading Association) Beef Carcass Grading Standard has been developed to measure those carcasses that are yielding higher marble scores. In 2008 Japan raised the bar on their grading standard whereby the BMS (Beef Marble Score) grade range is 3-12 (eliminating 1 and 2) and now a BMS 3 requires a min. IMF% of 21.



## Relationship between Japanese BMS and Marbling% after 2008



If the US is going to raise cattle for export to Japan or compete with Japanese imports, it's important to have a fundamental understanding of the Japanese meat grading system.

Japanese carcasses are cut or ribbed between the sixth and seventh rib throughout Japan. There are three yield grades: A, B and C - classified by yield percentages estimated by an equation. There are five quality grades: 1, 2, 3, 4 and 5 - based on marbling, meat color and texture, and fat color and quality. Yield score is determined by an estimated cut-ability percentage that is calculated by an equation which includes four carcass measurements. The measurements are obtained at the sixth and seventh rib section. The yield grading is absolutely objective, delivering an estimated yield percentage as follows.

- Grade A - 72% and above
- Grade B - 69% and above
- Grade C - under 69%
- Quality grade

The meat quality scores are determined in terms of beef marbling, meat color and brightness, firmness and texture of meat, color, lustre and quality of fat. The relationship between beef marbling evaluation and classification of grade is as follows:



## Quality Grade

1. Poor – 1
2. Below Average – 2
3. Average – 3-4
4. Good – 5-7
5. Excellent – 8-12

Meat color is evaluated by the Beef Color Standard prepared as seven continuous standards. The average color range is from No. 1 to No. 6 and carcasses in this color range can be graded in 'Grade 3 or upper grades'. Beef 'brightness' is also a factor in this evaluation. Firmness and texture of meat are evaluated by visual appraisal and also classified into five grades. The firmness measure ranges from very good to inferior and the texture of the meat is evaluated on a scale from very fine to coarse. The color, lustre and quality of fat is evaluated objectively against the Beef Fat Standards prepared as seven continuous standards. The remaining two factors, lustre and quality, are evaluated simultaneously by visual appraisal.

Lone Mountain Cattle pride themselves on the fact that their genetics program hinges on the performance data recorded and analyzed on their herd from birth to slaughter and has never shy away from using new technology to help their program.

So this in a sense it provides peace of mind for our valued customers and clients that there is real substance behind every breeding decision we make and genetics we offer. The confidence is evident in every facet of the Lone Mountain Cattle business model.