mla
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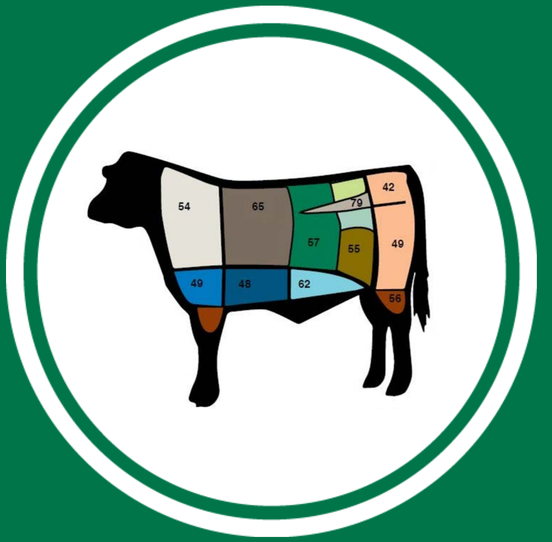
2017 MSA Excellence in Eating Quality Awards

What is MSA Benchmarking?

Improving your MSA Index



Jarrod Lees, Meat Standards Australia

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What is MSA Benchmarking?

1. What's driving the MSA Index?

2. MSA Index performance 2015/16 and 2016/17

3. How to make ***your*** perfect MSA Index

The MSA Index…

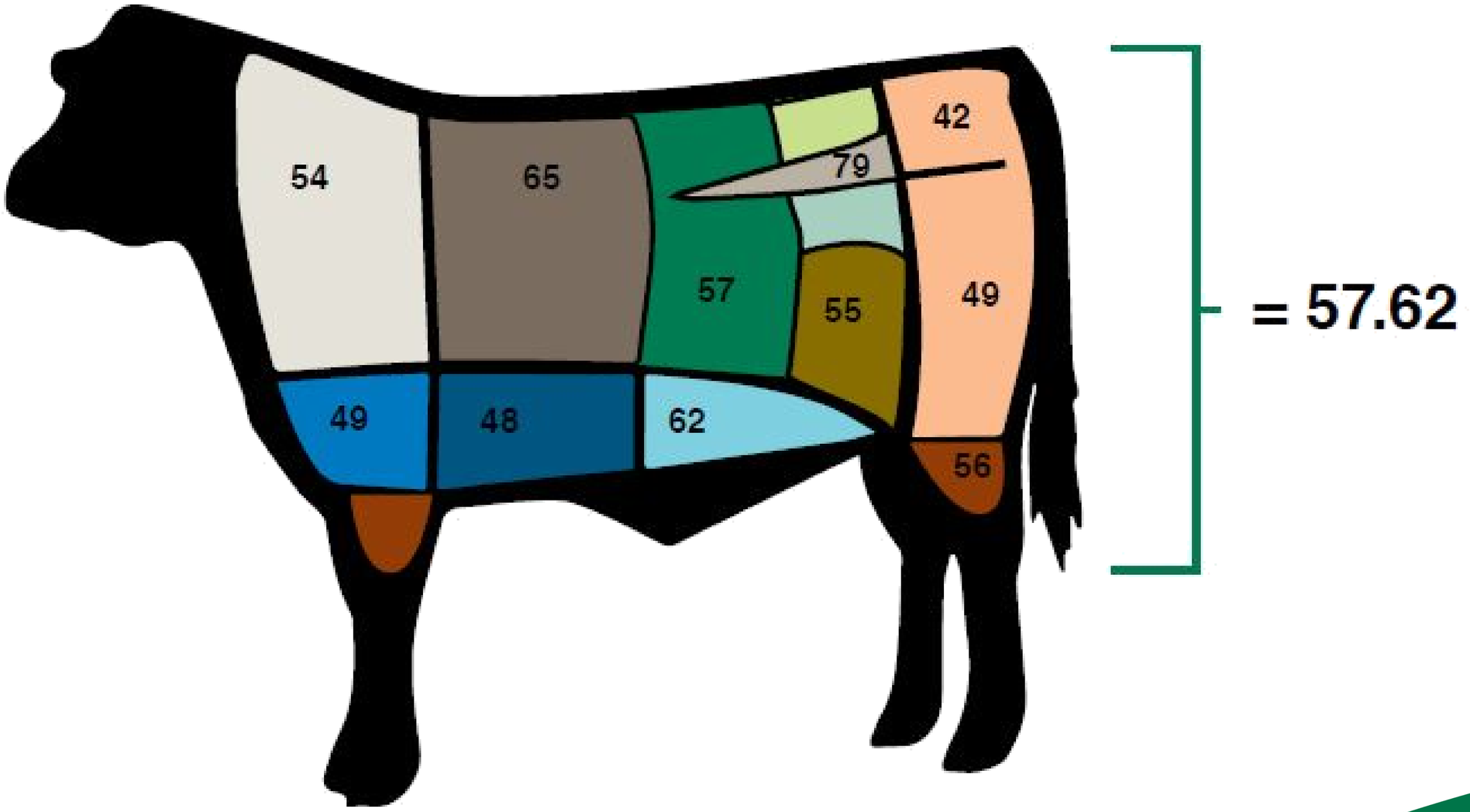
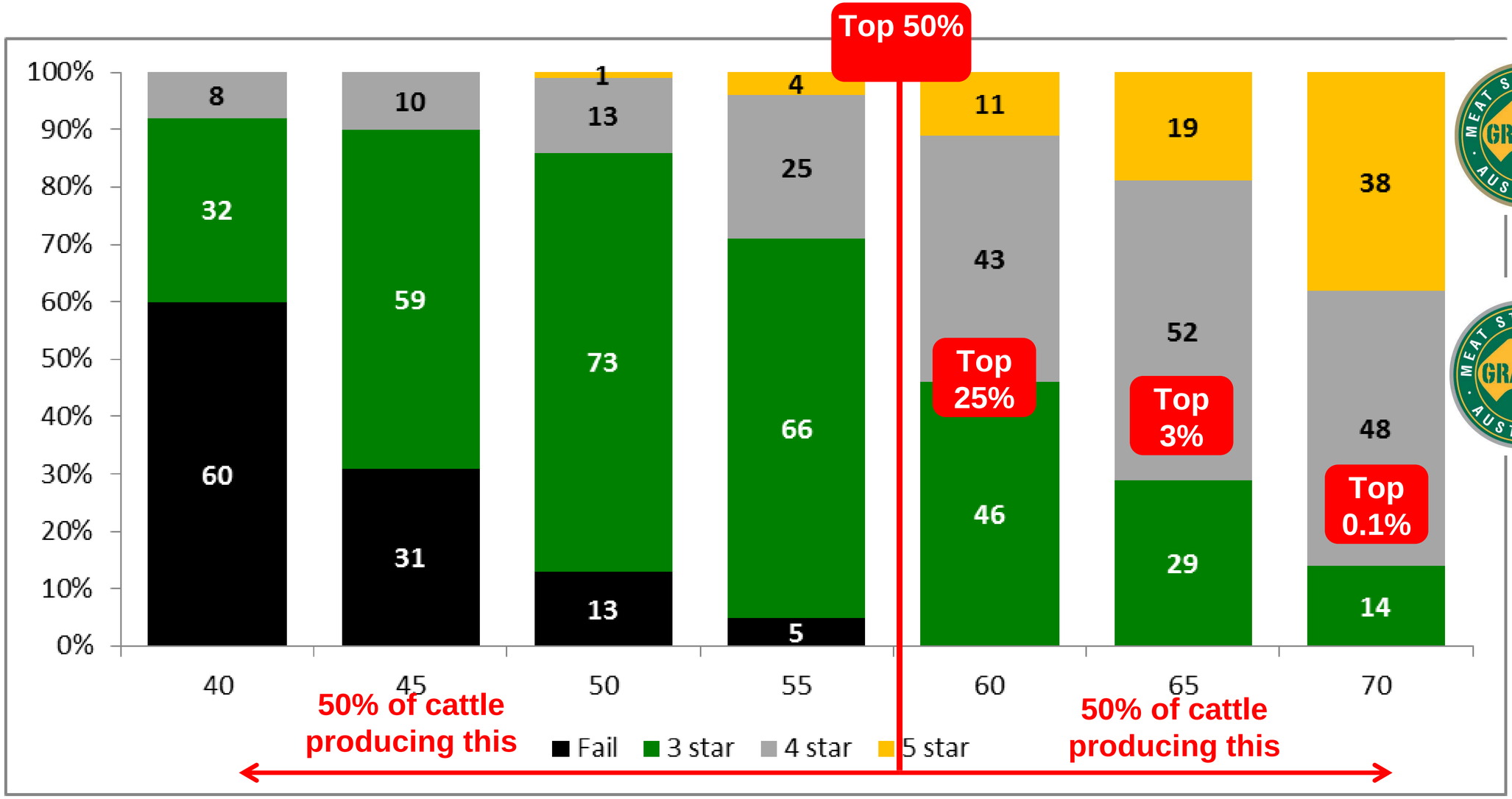


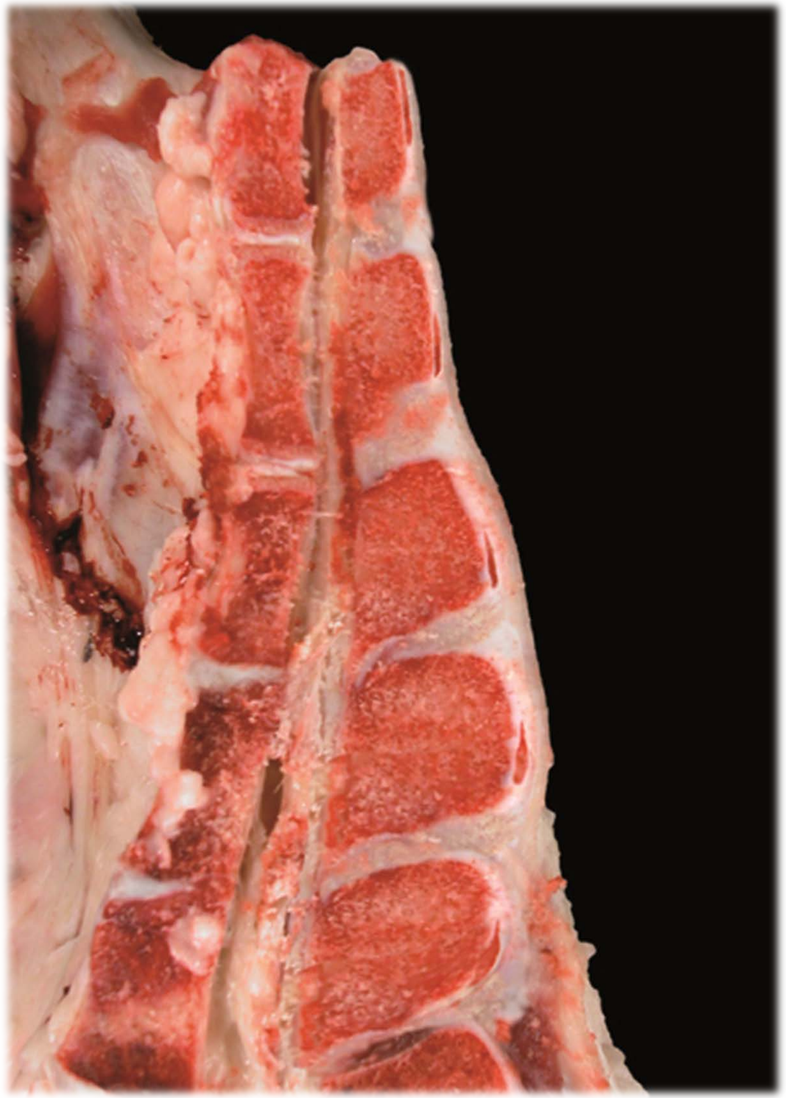
Illustration for example purposes only

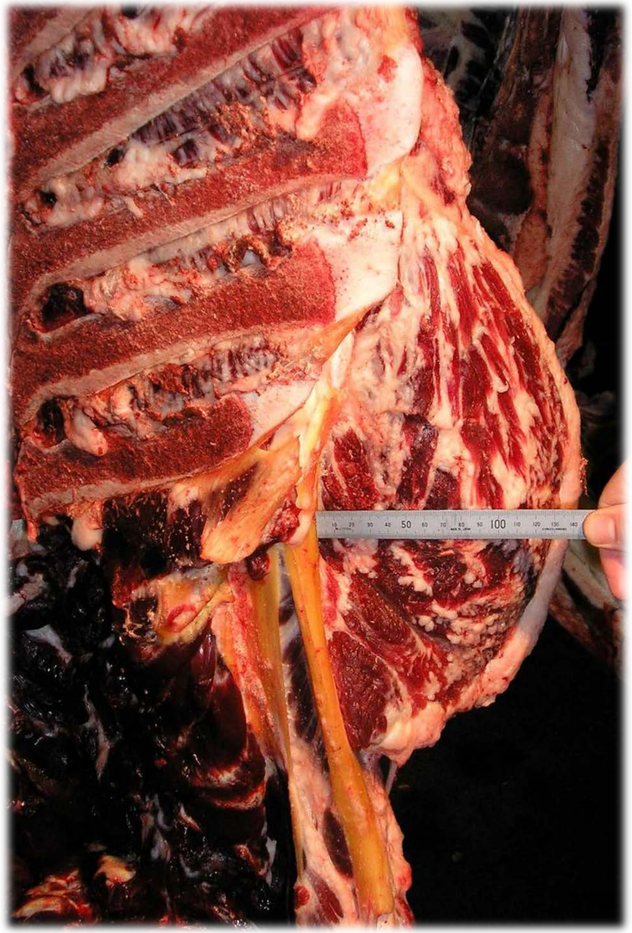
Why? Consumers want quality



Based on 39 key primals at optimal cook methods

The MSA Index playmakers





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Other factors…

- Milk fed vealer (Y/N)
- Saleyard (Y/N)
- Rib fat (mm)
- Hot standard carcase weight (HSCW; kg)
- Sex (M/F)

CARCASE INPUT	SIZE OF EFFECT ON THE MSA INDEX (UNITS)	CLARIFICATION OF EFFECT	RELATIVE IMPORTANCE OF THESE TRAITS IN CHANGING THE MSA INDEX*
Hormonal growth promotant (HGP) status	5	The MSA Index of carcases with no HGP implant is about 5 index units higher	Very high
Milk-fed vealer	4	The MSA Index of milk-fed vealer carcases is about 4 index units higher	Very high
Saleyard	5	Carcases that were consigned directly to slaughter and NOT processed through a saleyard have an MSA Index about 5 index units higher	Very high
MSA marbling	0.15	As MSA marbling score increases by 10, the MSA Index increases by about 0.15 index units	High
Hump height (for cattle greater than 0% TBC)**	–0.7	As hump height increases by 10mm, the MSA Index decreases by about 0.7 units. In carcases that have no TBC, hump height has no impact on MSA Index	High
Tropical breed content (TBC)**	0% = 0.0 12% = –1.6 18% = –3.2 25% = –3.9 38% = –4.7 50% = –5.2 75% = –5.5 100% = –6.3	As declared TBC content increases from 0 to 100%, the MSA Index decreases by up to 6.3 units	High
Ossification score	0.6	As ossification score decreases by 10, the MSA Index increases by 0.6 index units	High
Rib fat	0.1	As rib fat increases by 1mm, the MSA Index increases by 0.1 index units	Medium
Hot standard carcase weight (HSCW)	0.01	As HSCW increases by 1kg, the MSA Index increases by <0.01 index units	Low
Sex	0.3	With low ossification values, females have a higher index value than steers by about 0.3 index units	Low

MSA Index Tips & Tools

What is the whole picture then?

National and State performance

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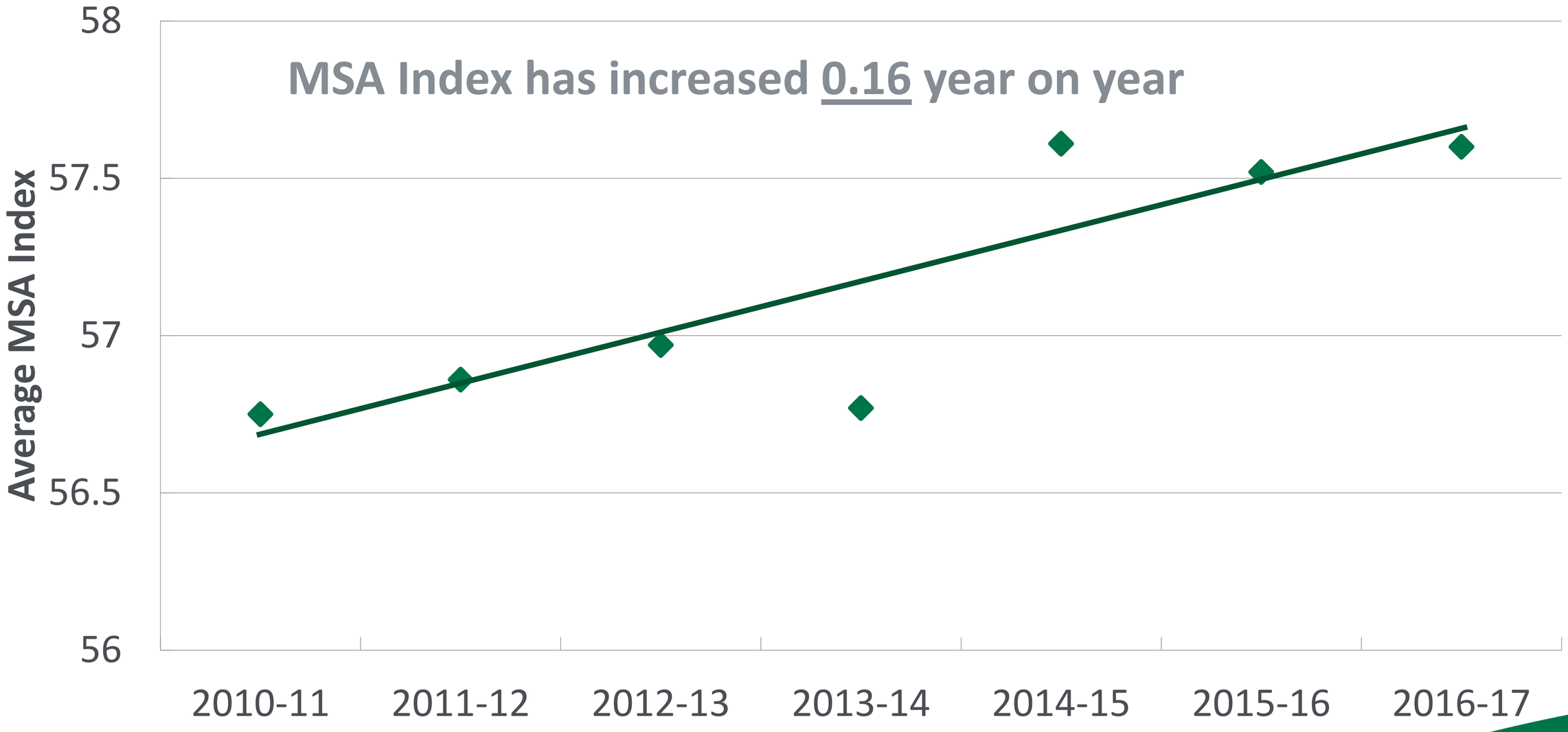
1. MSA Benchmarking – Australian Beef Eating Quality Insights

- **2015/16 and 2016/17 financial years**
- **National and state benchmarks**
- **Exploring different factors**

National MSA Index



Eating quality is on the rise

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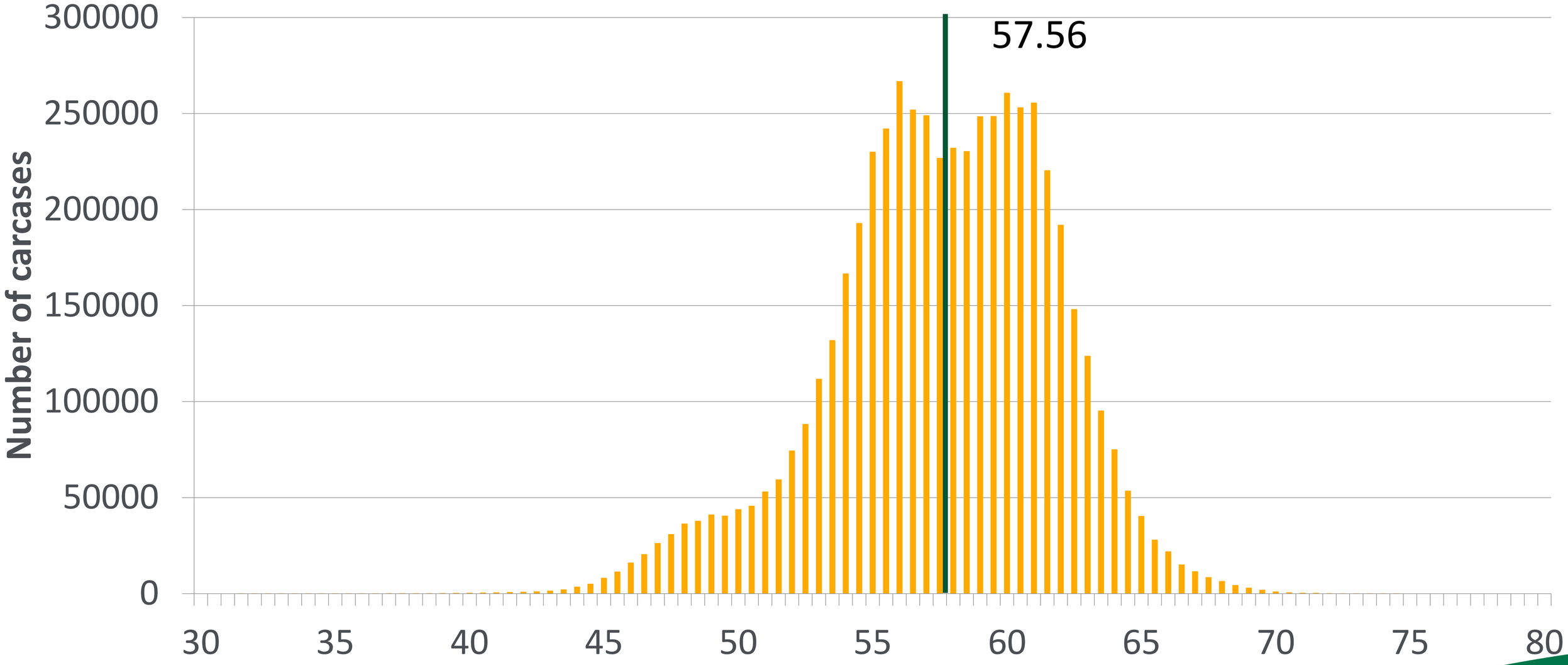
National MSA Index distribution



Grading a variety of animals

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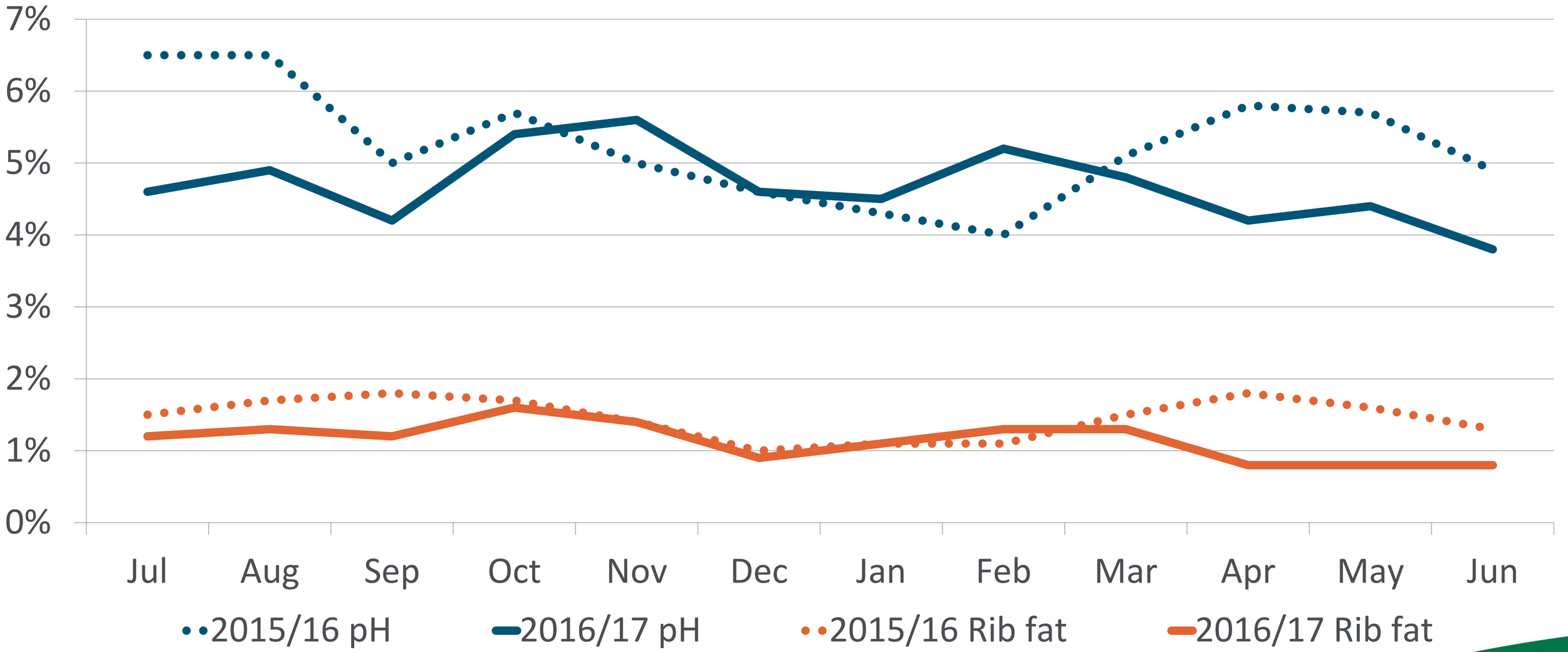
National compliance to MSA requirements



pH is still the main driver of non-compliance

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Getting your perfect MSA Index

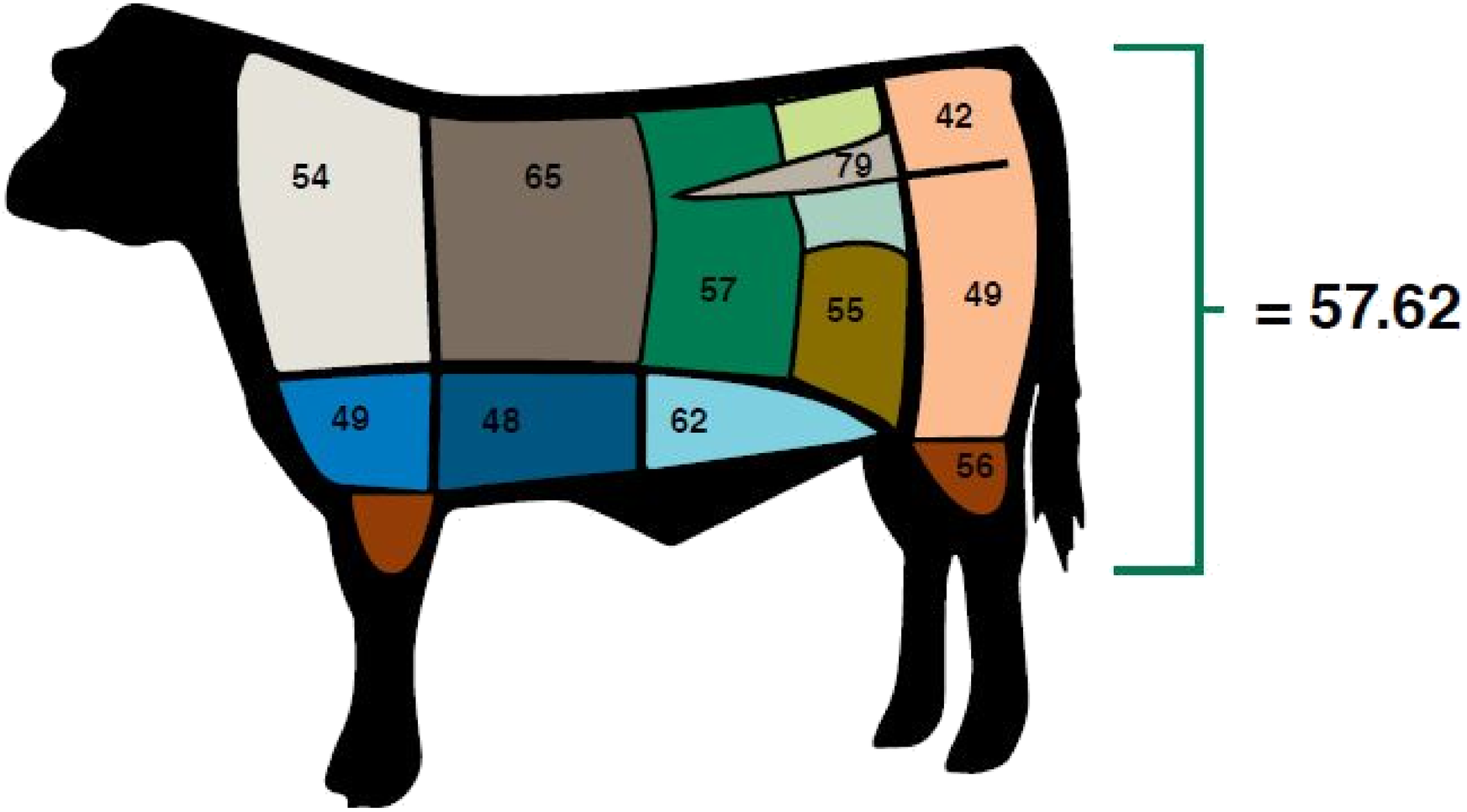

Illustration for example purposes only

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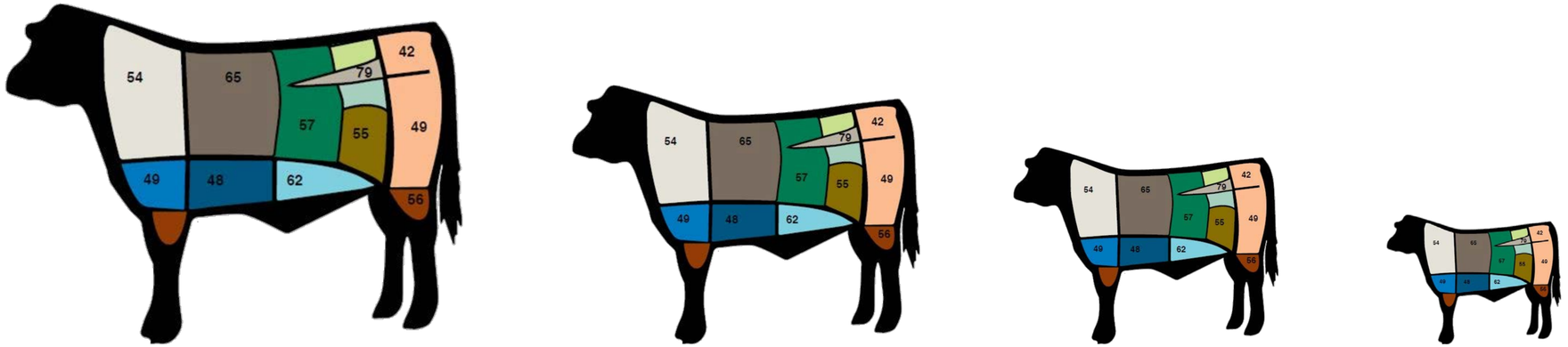
Your perfect MSA Index?

*The highest possible MSA Index **you** can manage through optimising the performance of **your** cattle, through **your** production system.*



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The MSA Index toolkit

1. The Australian Beef Eating Quality Insights
2. The MSA tips and tools
3. www.mymsa.com.au

Let the data inform you

tips&tools

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MSA18

Using the MSA Index to optimise beef eating quality

What is the MSA Index?

The MSA Index is a single number and standard national measure of the predicted eating quality and potential merit of a carcase.

The MSA Index is a number between 30 to 80, expressed to 2 decimal places (ie 54.62), to represent the eating quality potential of a whole carcase. The MSA Index is independent of any processing inputs and is calculated using only attributes influenced by pre-slaughter production. It is a consistent benchmark which can be used across all processors, geographic regions and over time. It reflects the impact on eating quality of management, environmental and genetic differences between cattle at the point of slaughter.

How is the MSA Index calculated?

The MSA Model predicts the eating quality of 39 cuts in a carcase using the measurements collected by accredited MSA graders.

MSA eating quality scores are the combination of tenderness, juiciness, flavour and overall liking of beef. The MSA Index is a weighted average of these scores for the 39 MSA cuts for the most common corresponding cooking method. It is not a yield measurement.

The MSA Index is a tool to be used by producers and lot feeders. Inputs in the MSA model controlled by the processor, for example hang method, days aged, ultimate pH (within the acceptable range), and loin temperature are set as default values. The MSA Index is calculated for Achilles hung carcases with 5 days ageing.

A carcase with a higher MSA Index will have higher beef eating quality scores for many cuts compared to a lower MSA Index carcase. The changes in eating quality of individual muscles will depend upon the different combinations of carcase inputs affecting cuts in different ways. This is why the MSA Index is a measure of the average eating quality of the whole carcase.

Key points

- The MSA Index is a weighted average of the predicted MSA eating quality scores (MQ4) of 39 MSA cuts in a carcase
- The MSA Index is a number between 30 to 80, expressed to 2 decimal places
- It is a tool that producers and lot feeders can use to benchmark the impact of genetic and management interventions on eating quality, across time periods
- Producers can monitor changes in eating quality between slaughter groups, seasons and years
- It also provides a useful national and regional benchmark for beef eating quality, across time and seasons so changes in beef eating quality can be monitored

Why is the MSA Index useful?

Producers are able to access MSA feedback for individual carcase traits including carcase weight, rib fat, MSA marble score, ossification score, HGP status, hump height and sex. However it is difficult to assess the importance of these individual traits on eating quality and how changes in breeding and genetics or management decisions impact on the eating quality of the carcase. The MSA Index combines the impact of all these inputs and allows producers to evaluate changes in their business, to drive a faster rate of gain in eating quality.

With the goal to improve eating quality for the consumer, the producer and lot feeder are faced with how to economically improve eating quality and the MSA Index through genetics and management interventions.

Meat Standards Australia beef information kit

All you need is your MSA Index…

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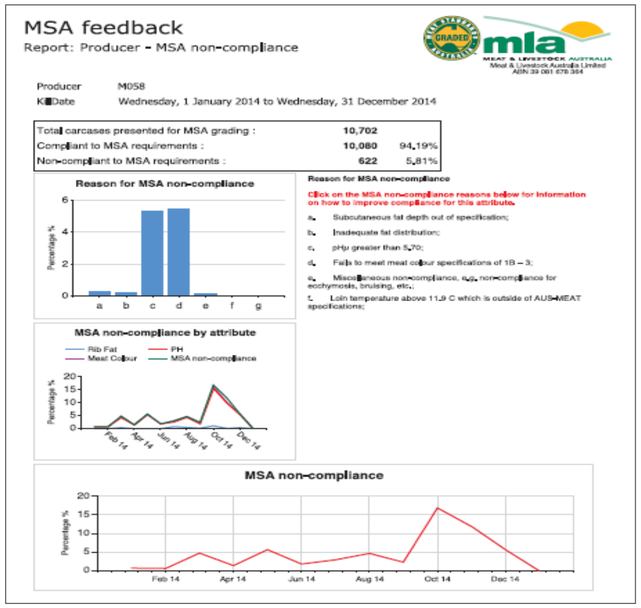
www.mymsa.com.au


MSA feedback
Report: Producer – MSA non-compliance

Producer M058
Kill Date Wednesday, 1 January 2014 to Wednesday, 31 December 2014

Total carcases presented for MSA grading :	10,702	
Compliant to MSA requirements :	10,080	94.19%
Non-compliant to MSA requirements :	622	5.81%

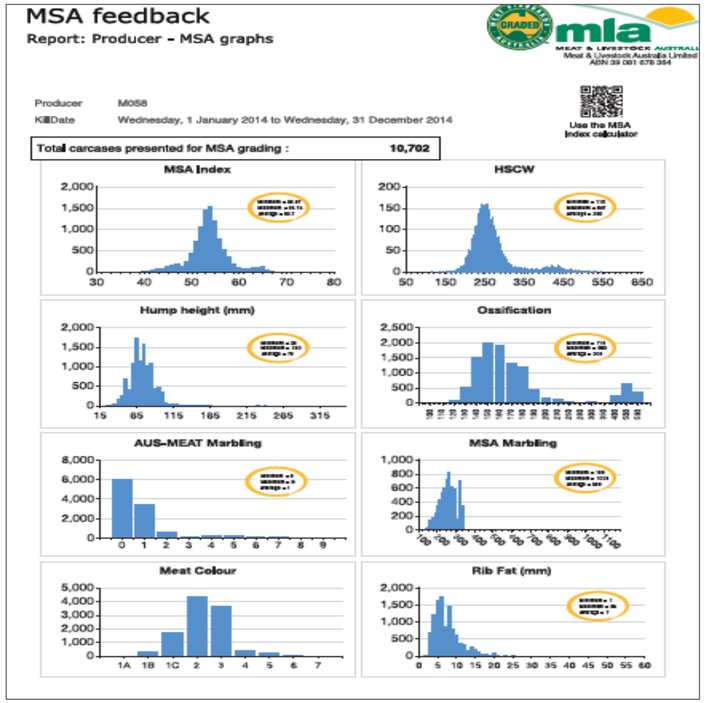
Reason for MSA non-compliance

Reason for MSA non-compliance
Click on the MSA non-compliance reasons below for information on how to improve compliance for this attribute.

a. Subcutaneous fat depth out of specification;
b. Inadequate fat distribution;
c. pHu greater than 5.70;
d. Fails to meet meat colour specifications of 1B – 3;
e. Miscellaneous non-compliance, e.g., non-compliance for ecchymosis, bruising, etc.;
f. Loin temperature above 11.9 C which is outside of AUS-MEAT specifications;

MSA non-compliance by attribute
Rib Fat
Meat Colour
PH
MSA non-compliance

MSA non-compliance

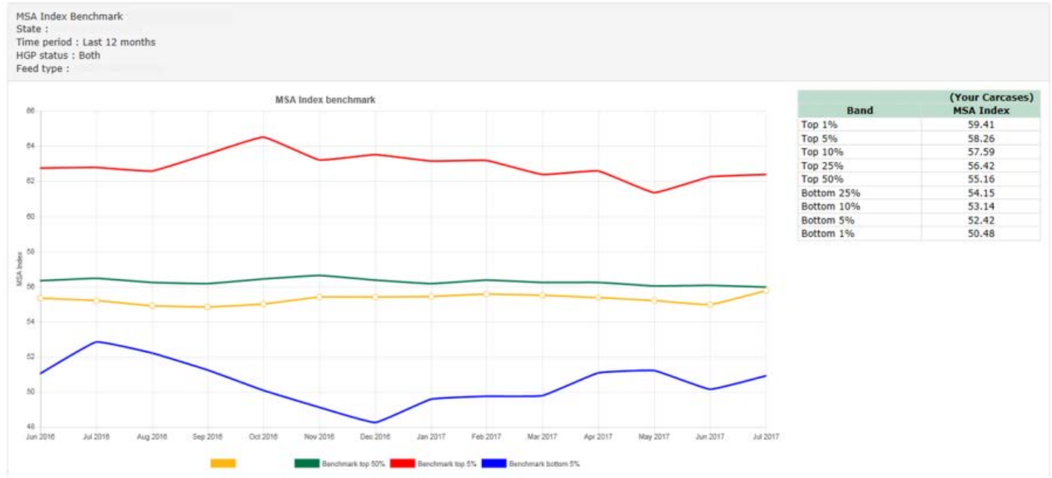

MSA feedback
Report: Producer – MSA graphs

Producer M058
Kill Date Wednesday, 1 January 2014 to Wednesday, 31 December 2014

Use the MSA Index calculator

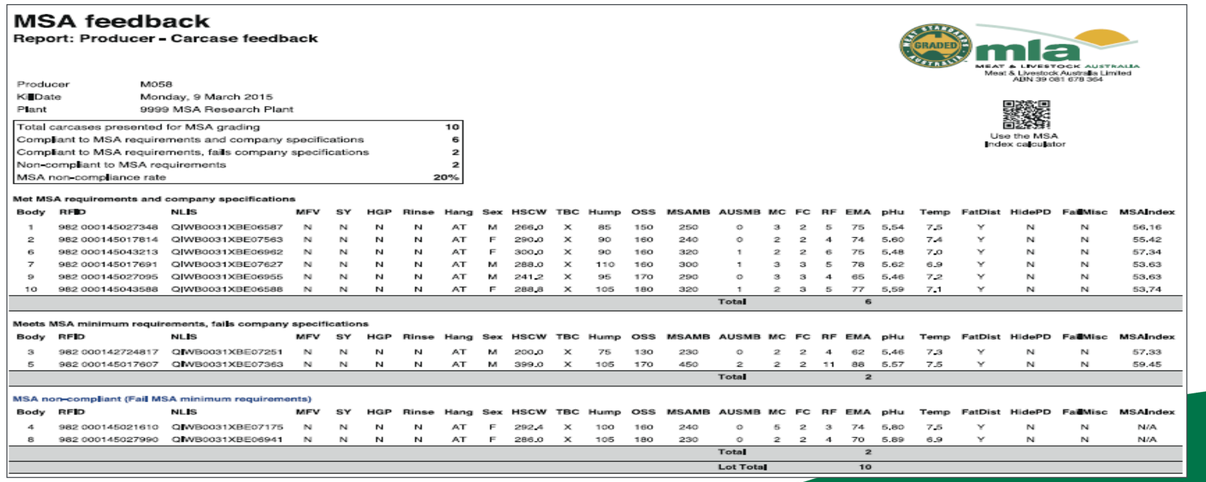
Total carcases presented for MSA grading : 10,702

MSA Index
HSCW
Hump height (mm)
Ossification
AUS-MEAT Marbling
MSA Marbling
Meat Colour
Rib Fat (mm)


MSA Index Benchmark
State :
Time period : Last 12 months
HGP status : Both
Feed type :

MSA Index benchmark

Band	(Your Carcases) MSA Index
Top 1%	59.41
Top 5%	58.26
Top 10%	57.59
Top 25%	56.42
Top 50%	55.16
Bottom 25%	54.15
Bottom 10%	53.14
Bottom 5%	52.42
Bottom 1%	50.48


MSA feedback
Report: Producer – Carcase feedback

Producer M058
Kill Date Monday, 9 March 2015
Plant 9999 MSA Research Plant

Use the MSA Index calculator

Total carcases presented for MSA grading	10
Compliant to MSA requirements and company specifications	6
Compliant to MSA requirements, fails company specifications	2
Non-compliant to MSA requirements	2
MSA non-compliance rate	20%

Met MSA requirements and company specifications

Body	RFID	NLIS	MFV	SY	HGP	Rinse	Hang	Sex	HSCW	TBC	Hump	OSS	MSAMB	AUSMB	MC	FC	RF	EMA	pHu	Temp	FatDist	HidePD	FatMisc	MSAIndex
1	982 000145027348	QIWB0031XBE06587	N	N	N	N	AT	M	266.0	X	85	150	250	0	3	2	5	75	5.54	7.5	Y	N	N	56.16
2	982 000145017814	QIWB0031XBE07563	N	N	N	N	AT	F	290.0	X	90	160	240	0	2	2	4	74	5.60	7.4	Y	N	N	55.42
6	982 000145043213	QIWB0031XBE06962	N	N	N	N	AT	F	300.0	X	90	160	320	1	2	2	6	75	5.48	7.0	Y	N	N	57.34
7	982 000145017691	QIWB0031XBE07627	N	N	N	N	AT	M	288.0	X	110	160	300	1	3	3	5	78	5.62	6.9	Y	N	N	53.63
9	982 000145027095	QIWB0031XBE06955	N	N	N	N	AT	M	241.2	X	95	170	290	0	3	3	4	65	5.46	7.2	Y	N	N	53.63
10	982 000145043588	QIWB0031XBE06588	N	N	N	N	AT	F	288.8	X	105	180	320	1	2	3	5	77	5.59	7.1	Y	N	N	53.74
														Total				6						

Meets MSA minimum requirements, fails company specifications

Body	RFID	NLIS	MFV	SY	HGP	Rinse	Hang	Sex	HSCW	TBC	Hump	OSS	MSAMB	AUSMB	MC	FC	RF	EMA	pHu	Temp	FatDist	HidePD	FatMisc	MSAIndex
3	982 000142724817	QIWB0031XBE07251	N	N	N	N	AT	M	200.0	X	75	130	230	0	2	2	4	62	5.46	7.3	Y	N	N	57.33
5	982 000145017607	QIWB0031XBE07363	N	N	N	N	AT	M	399.0	X	105	170	450	2	2	2	11	88	5.57	7.5	Y	N	N	59.45
														Total				2						

MSA non-compliant (Fail MSA minimum requirements)

Body	RFID	NLIS	MFV	SY	HGP	Rinse	Hang	Sex	HSCW	TBC	Hump	OSS	MSAMB	AUSMB	MC	FC	RF	EMA	pHu	Temp	FatDist	HidePD	FatMisc	MSAIndex
4	982 000145021610	QIWB0031XBE07175	N	N	N	N	AT	F	292.4	X	100	160	240	0	5	2	3	74	5.80	7.5	Y	N	N	N/A
8	982 000145027990	QIWB0031XBE06941	N	N	N	N	AT	F	286.0	X	105	180	230	0	2	2	4	70	5.89	6.9	Y	N	N	N/A
														Total				2						
														Lot Total				10						

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Your quick statistics

MSA Index Performance

Last Kill - 03 Jul 2017

		National Benchmark
MSA Graded Carcases	232	10,542
Top 5%	58.88	64.24
Top 50%	55.64	58.23
Bottom 5%	53.02	49.04

More detail

MSA Index Performance

Last 12 months

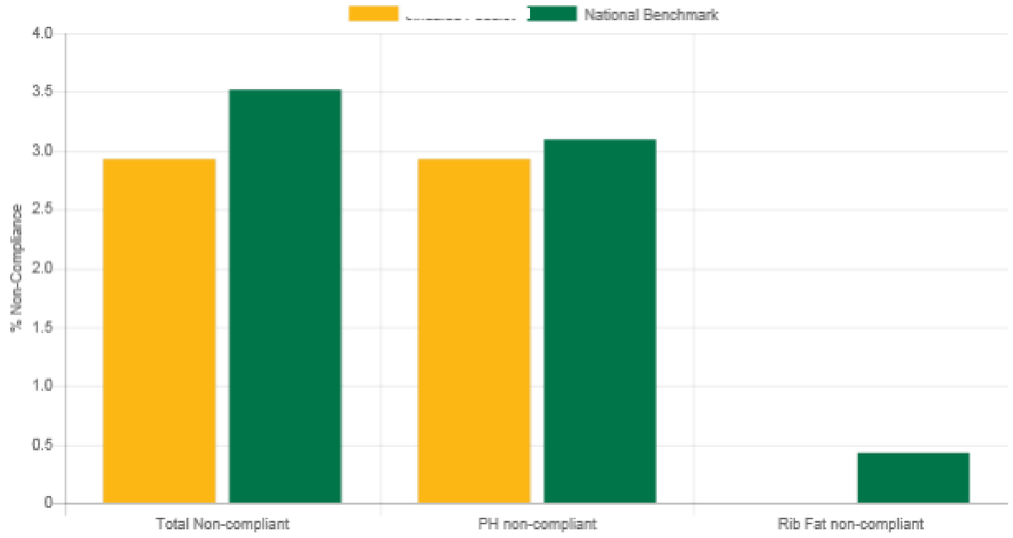
		National Benchmark
MSA Graded Carcases	43,541	2,598,986
Top 5%	58.50	63.72
Top 50%	55.18	57.85
Bottom 5%	52.38	49.71

More detail

MSA Non-compliance

Last Kill - 03 Jul 2017

		National Benchmark
Total carcases	239	10,930
Non-compliance rate	2.93%	3.53%
Non-compliant pH	2.93%	3.10%
Non-compliant Rib Fat	0.00%	0.43%

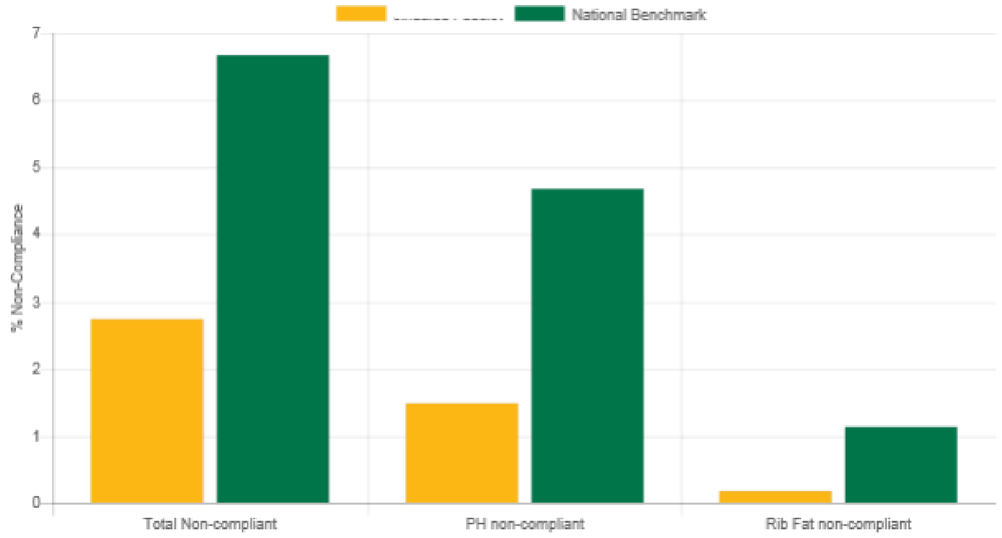


More detail

MSA Non-compliance

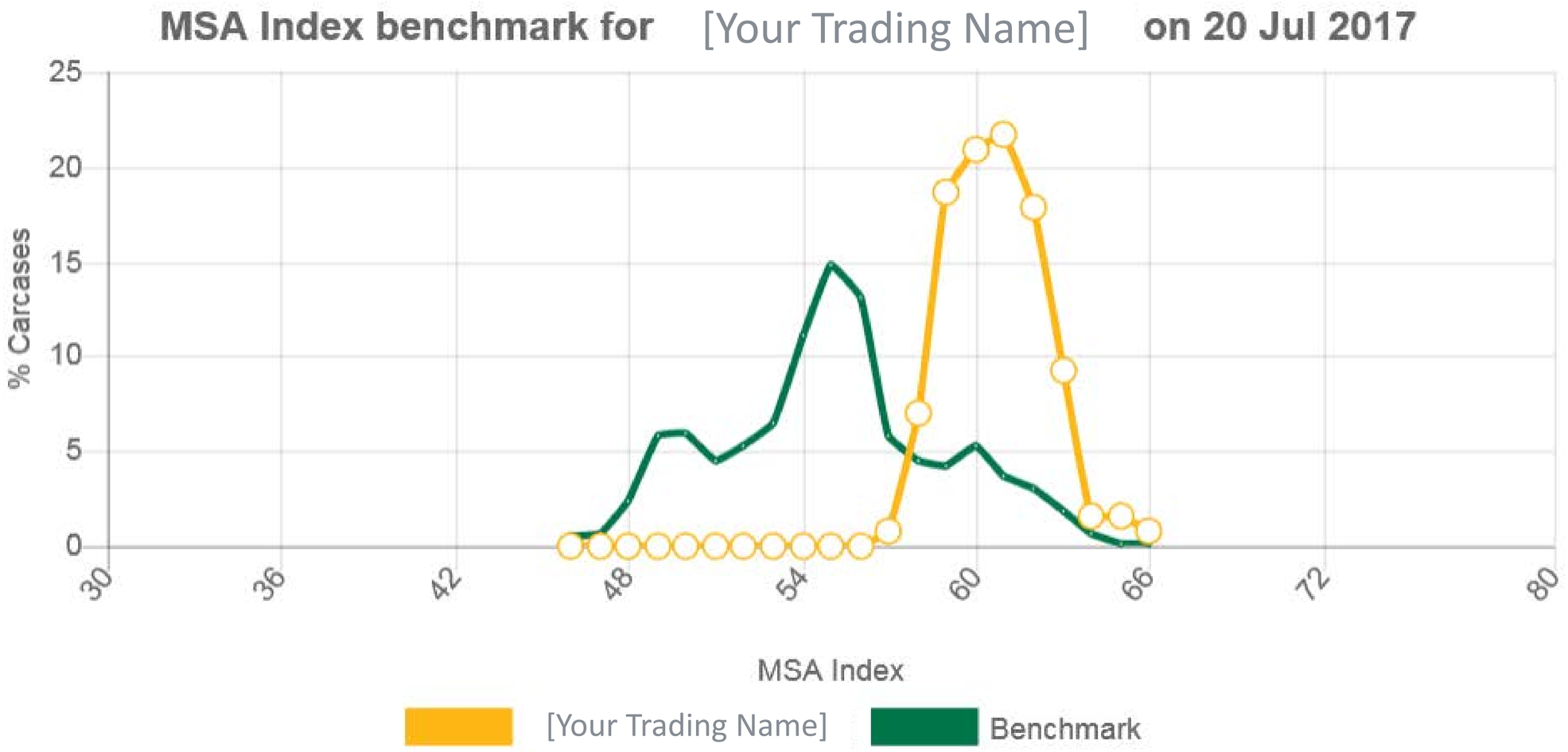
Last 12 months

		National Benchmark
Total Carcases	44,239	2,765,305
Non-compliance rate	2.76%	6.69%
Non-compliant pH	1.50%	4.70%
Non-compliant Rib Fat	0.19%	1.15%



More detail

MSA Benchmarking



	[Your Trading Name]	Benchmark
Carcases	129	1,316
Top 5%	63.87	62.26
Top 50%	61.12	55.43
Bottom 5%	58.73	49.22

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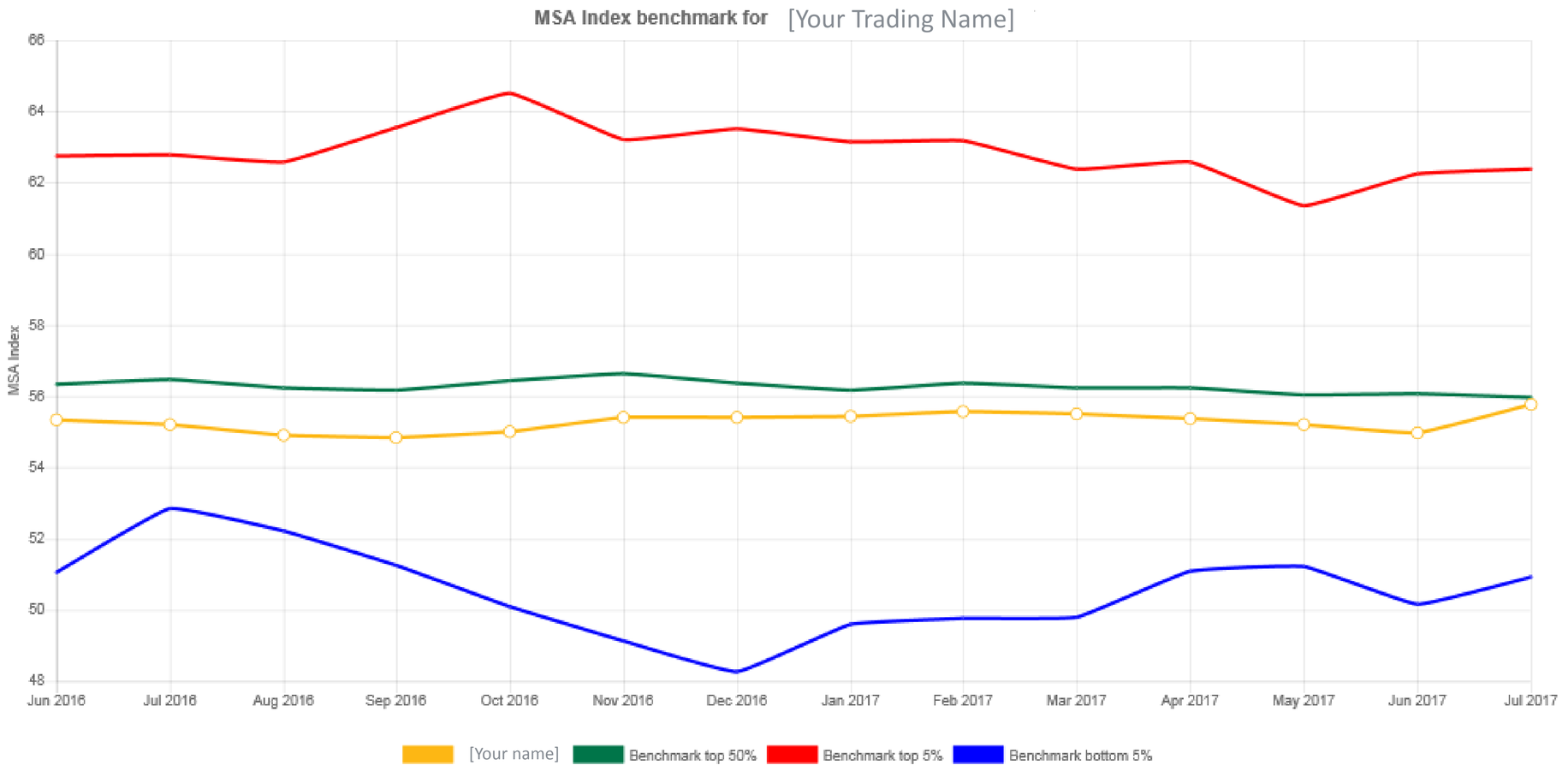
MSA Index Benchmarking

IMPORTANT: prior to benchmarking, please select the attributes you would like to be benchmarked against.

Time period	HGP status	Feed type	Area
○Last kill	○HGP treated	◉Grain Fed	○My region
◉Last 12 months	○No HGP	○Grass Fed	◉My state
○Last 3 years	◉Both		○National



[Your Name] Band	MSA Index (Your Carcases) MSA Index
Top 1%	59.41
Top 5%	58.26
Top 10%	57.59
Top 25%	56.42
Top 50%	55.16
Bottom 25%	54.15
Bottom 10%	53.14
Bottom 5%	52.42
Bottom 1%	50.48

MSA EQ performance – Non-HGP GF in the state on 20/07

Carcase Attributes data only includes MSA compliant carcases

Trait	Benchmark Bottom 5%	Average	Benchmark Top 5%	My data
MSA Index	57.36	60.62	63.98	**61.20**
Carcase Weight (kg)	291.19	301.35	311.60	**374.41**
Hump Height (mm)	65	60	70	**65**
Ossification (100 - 590)	180	160	140	**140**
AUS-MEAT Marbling (0-9)	0	1	2	**2**
MSA Marbling (100 - 1190)	250	340	500	**430**
Rib Fat (mm)	9	7	9	**4**

Scenario: Increase your MSA index to >61.40

Goal:

Improve the average MSA Index of my herd by XX index points, from 59.76 to >61.40, over the next 5 years (0.33 index points/year)

How:

1. **Emphasis on whole of life nutrition**
2. **Improving the genetic composition of my herd**
3. **Utilising carcase feedback from my cattle to measure progress**

Why:

1. **Supply cattle with a greater proportion of 4 and 5 star cuts**
2. **Win MSA Beef Producer of the Year – South Australia in 2022**

MSA Index Calculator

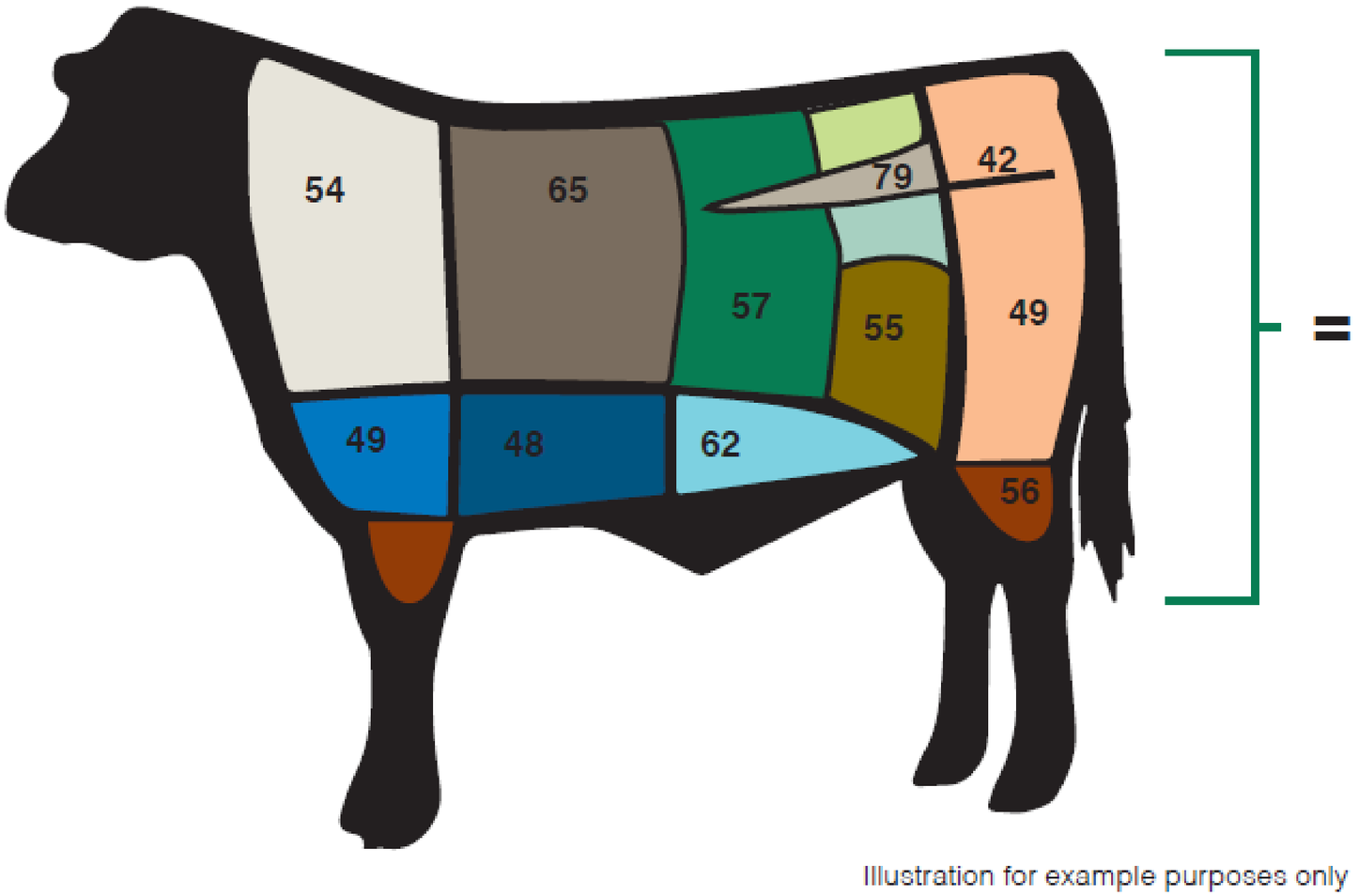


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Illustration for example purposes only

MSA Index: 59.76 CALCULATE

MFV	N
Saleyard	N
HGP	N
Sex	M
HSCW	300
TBC	X
Hump Height	55
Ossification	170
MSA Marble	340
Rib Fat	9

MSA Index Calculator – you can Google it!

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MSA Marbling

0.49
increase

MSA Index: 60.25	CALCULATE
MFV	N
Saleyard	N
HGP	N
Sex	M
HSCW	300
TBC	X
Hump Height	55
Ossification	170
MSA Marble	370 + 30
Rib Fat	9

Marbling has a positive effect on eating quality

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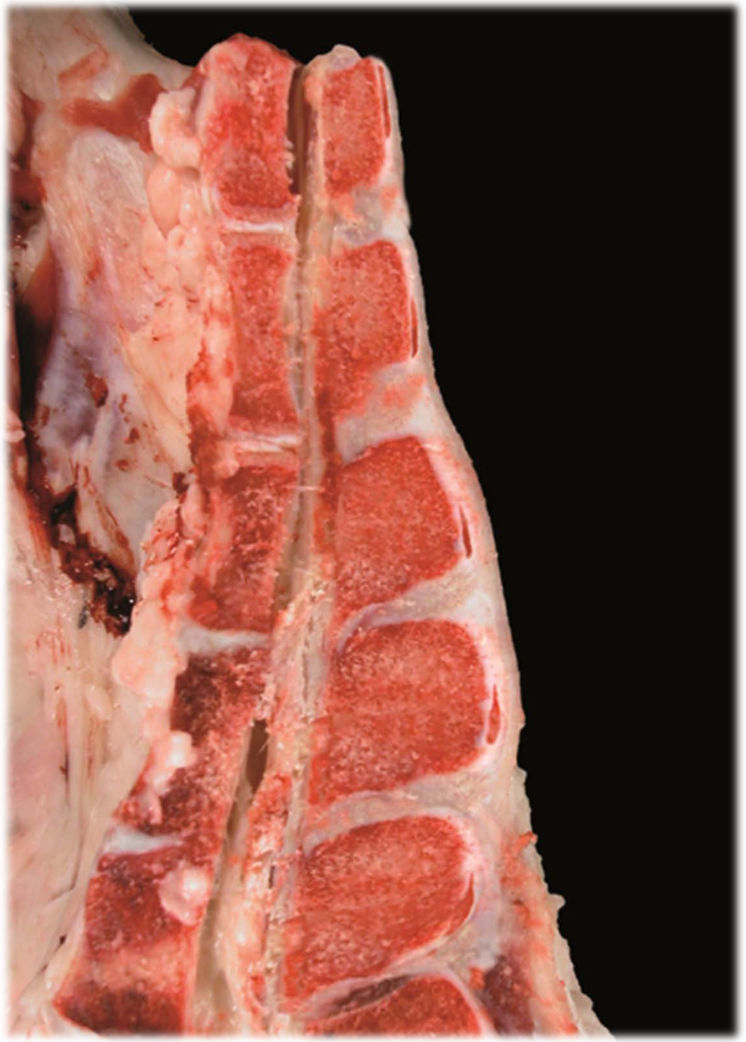
Ossification



1.03
increase

MSA Index: 60.79	CALCULATE
MFV	N
Saleyard	N
HGP	N
Sex	M
HSCW	300
TBC	X
Hump Height	55
Ossification	150 -20
MSA Marble	340
Rib Fat	9

Ossification has a negative effect on eating quality

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Marbling and Ossification…what else?

MSA Index: 61.28	CALCULATE
MFV	N
Saleyard	N
HGP	N
Sex	M
HSCW	300
TBC	X
Hump Height	55
Ossification	150
MSA Marble	370
Rib Fat	9

1.52 increase

Increase Carcase weight by 20kg

1.64 increase

MSA Index: 61.40	CALCULATE
MFV	N
Saleyard	N
HGP	N
Sex	M
HSCW	320
TBC	X
Hump Height	55
Ossification	150
MSA Marble	370
Rib Fat	9

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But what if increasing HSCW isn't an option???

MSA Index: 61.48	CALCULATE
MFV	N
Saleyard	N
HGP	N
Sex	M
HSCW	300
TBC	X
Hump Height	55
Ossification	150
MSA Marble	370
Rib Fat	11 +2

Increased the index 1.72
AND above 61.40

But you need to set a goal first…

Use the MSA tools!

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Improving your MSA Index

1. It’s never been easier with the tools at your disposal
2. Set an eating quality goal
3. Measure your performance using myMSA feedback tools
4. Benchmark yourself using myMSA Benchmarking

Let’s ensure top quality MSA beef is on the menu