



Meat Standards Australia Beef and Sheepmeat Update

Presented by Laura Garland





Why should we be interested in eating quality of our beef?

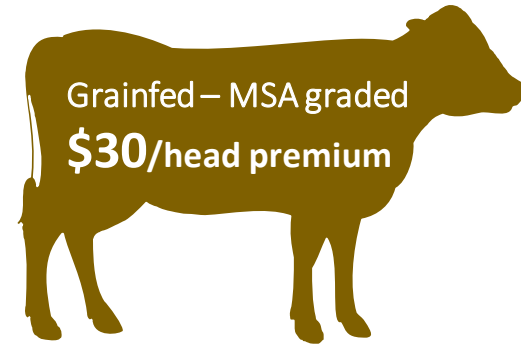
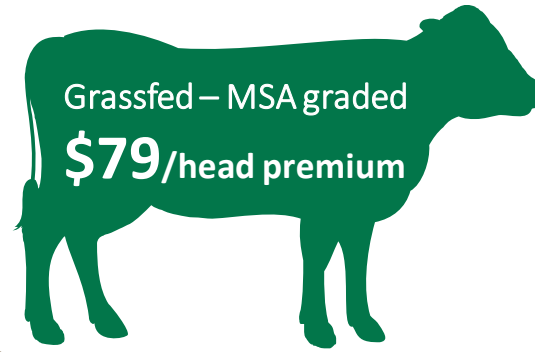
- Consumers are the only point where money enters the supply chain
- When they are paying more for beef than ever before... we cannot afford to let them down

Eating quality is now an expectation



Producer benefits

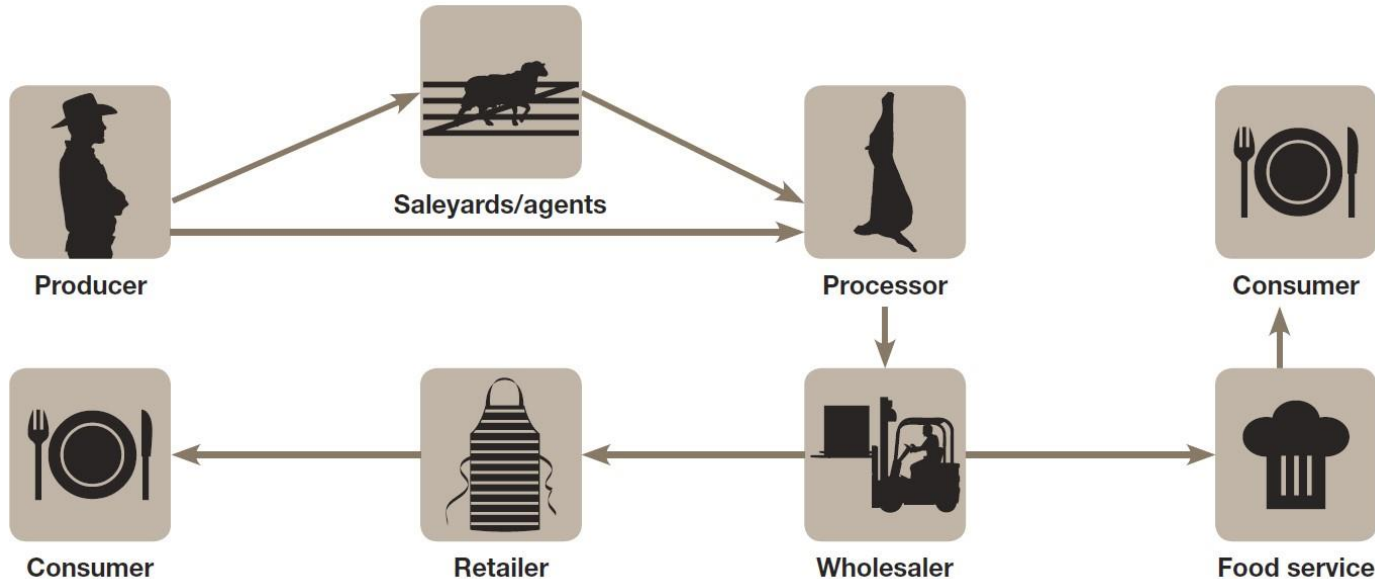
1. Carcase Feedback
2. Market Access
3. Price Premiums



**\$157m delivered back to the farm gate
in 2020-21**



Meat Standards Australia – across the supply chain



Consumer-focused model to improve eating quality through the whole value-chain

Producer Requirements to supply MSA cattle

MSA Cattle

Must be an MSA-registered producer

LPA NVD and MSA Vendor Declaration correctly filled out to accompany consignment

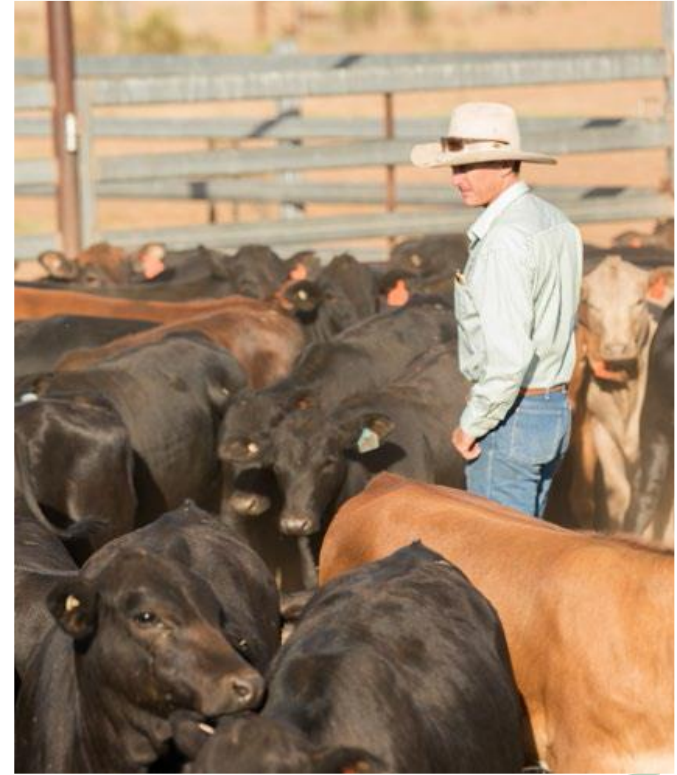
Cattle kept on property for minimum of 30 days before dispatch

No entire males or animals displaying secondary sexual characteristics

No cattle that have been severely sick or injured

Direct consignments must be processed within 48 hours of leaving the property

Access to water at all times when not in transit



Ref: Meat Standards Australia Standards Manual, Section 5: Livestock Supply

On-farm recommendations - cattle



- Cattle kept as one mob for minimum of 14 days before dispatch
- No mixing of cattle within 14 days of dispatch
- Best practice stock handling to minimise stress
- Cattle should be continually grazed or fed rations for growth for a minimum of 30 days prior to dispatch
 - Ideally on a rising plane of nutrition with weight gains of at least 0.8kg/day

Requirements to supply MSA sheep and lambs

MSA sheepmeat pathway

Must be an MSA-registered producer

LPA NVD correctly filled out (including MSA number in Part A question 7) to accompany consignment

Minimum two weeks off shears

Fat Score ≥ 2

Carcase specs: $\geq 18\text{kg}$ HSCW and $\geq 6\text{mm}$ GR

Time off feed < than 48hrs

Access to water at all times when not in transit

Minimum two weeks consignment at property before dispatch

Maximum time in transit of 24hrs



Ref: Meat Standards Australia Standards Manual, Section 5: Livestock Supply

MSA sheepmeat cut x cook



Research has identified eating quality outcomes of different cuts from lamb, hogget and mutton:



Sheepmeat category



Cut



Cooking method



Eligibility to the MSA program

SHEEPMEAT CUTS AND COOKING METHODS					
LAMB (L) ● HOGGET (H) ● MUTTON (M) ●					
CUT	HAM *	GRILL	ROAST	STIR FRY	CASSEROLE
Leg Chump / On	4800		●●		
Leg 'Easy Carve'	4821		●●		
Leg Chump / Off	4820		●●		
Chump	4790		●●		
Chop		●●●			
Hind Shank	5031				●●
Leg Chump/On (Boneless)	5060		●●		
Rolled / Tied			●●		
Topside	5073			●●	
Silverside	5071			●	
Thick Flank (Round)	5076	●●	●●	●●	
Chump (Rump)	5130	●●	●●	●●	●●
Topside (Den)	5077			●●	
Outside (Den)	5075			●●●	
Knuckle (Round)	5072	●●	●●	●●●	
Rump (Den)	5074	●●●	●●●	●●	●●
Loin	4860		●●●		
Shortloin	4880		●●●		
Rolled			●●●		
Noisettes		●●●	●●●		
Chop		●●●			
Eye of Shortloin	5150	●●●		●●●	
Rack	4932		●●●		

Applying nine cut by cook combinations

INPUTS

- Hot standard carcass weight (HSCW)
- Lean meat yield (LMY)
- Intramuscular fat (IMF)
- Electrical Stimulation
- Ageing from 5 – 21 days

OUTPUTS

Grill



knuckle

loin

outside

rump

topside

Roast



knuckle

leg

rack

shoulder



FAIL



Carcass inputs will generate nine potential EQ outcomes.

Testing, testing: measuring intramuscular fat (IMF)



MEQ Probe
(invasive device)



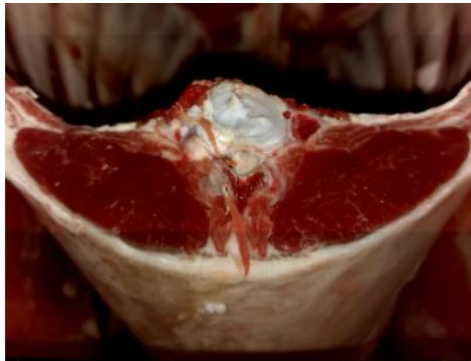
ASD NIR
(denuded muscle device)



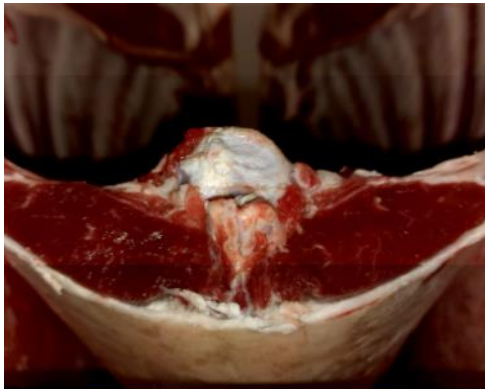
Soma Optics NIR
(cut surface device)



MasterLamb
(cut surface device)



2%



4%



6%



MSA carcass feedback

Use the MSA Index calculator at
www.mymssa.com.au

Total carcasses presented for MSA grading:	18
Compliant to MSA requirements and company specifications:	17
Compliant to MSA requirements, fails company specifications:	0
MSA non-compliant carcasses:	1
MSA non-compliance rate:	5.56%

Producer:	121V MSA Producer Training
Kill date:	Monday, 30 April 2018
Plant:	0159 Goodchild Abattoir Pty Ltd

Met MSA requirements and company specifications

Body	RFID	NLIS	Hang	Sex	TBC	HSCW	Hump	OSS	MSAMB	AUSMB	MC	FC	RF	EMA	pHu	Temp	MFV	SY	HGP	Rinse	FatDist	HidePD	FailMisc	MSA Index
93			AT	M	0	257.8	60	110	320	1	1C	1	11	74	5.47	10.9	N	N	N	N	Y	N	N	64.00
94	982 123531337726	WESJ0247XBNN0031	AT	M	0	296.0	65	140	360	1	2	1	9	83	5.60	11.3	N	N	N	N	Y	N	N	61.74
95	982 123525089645	WDHY0431XBM04008	AT	M	0	280.4	75	120	380	1	1C	1	16	88	5.53	11.9	N	N	N	N	Y	N	N	63.83
96	982 123525089626	WDHY0431XBM03989	AT	M	0	251.4	60	110	380	1	1C	1	7	79	5.45	11.8	N	N	N	N	Y	N	N	64.52
97	982 123531337652	WESJ0247XBNN0105	AT	M	0	257.8	60	130	440	2	2	1	9	71	5.40	11.8	N	N	N	N	Y	N	N	63.67
98	982 123531337678	WESJ0247XBNN0079	AT	M	0	293.2	70	130	350	1	2	1	6	105	5.59	11.9	N	N	N	N	Y	N	N	61.87
99	982 123535407260	WDHY0335XBN03185	AT	M	0	265.8	70	130	320	1	1C	0	11	81	5.57	11.2	N	N	N	N	Y	N	N	61.74
100	982 123535407484	WDHY0335XBN03409	AT	M	0	256.4	65	140	330	1	2	1	16	61	5.47	11.7	N	N	N	N	Y	N	N	61.64
101	982 123489807768	WKKW0081XBJ00363	AT	M	0	246.8	60	120	350	1	2	1	10	74	5.48	11.7	N	N	N	N	Y	N	N	63.26
102	982 123531337574	WESJ0247XBNN0183	AT	M	0	215.8	55	130	330	1	2	2	10	65	5.55	10.4	N	N	N	N	Y	N	N	61.86
103	982 123518457741	WGIN0008XBL01603	AT	M	0	211.6	45	110	310	1	1C	1	5	69	5.49	6.5	N	N	N	N	Y	N	N	63.02
104	982 123533516670	WAHY0268XBNN00090	AT	M	0	275.8	65	120	330	1	1C	0	18	80	5.54	11.4	N	N	N	N	Y	N	N	63.57

The MSA Index

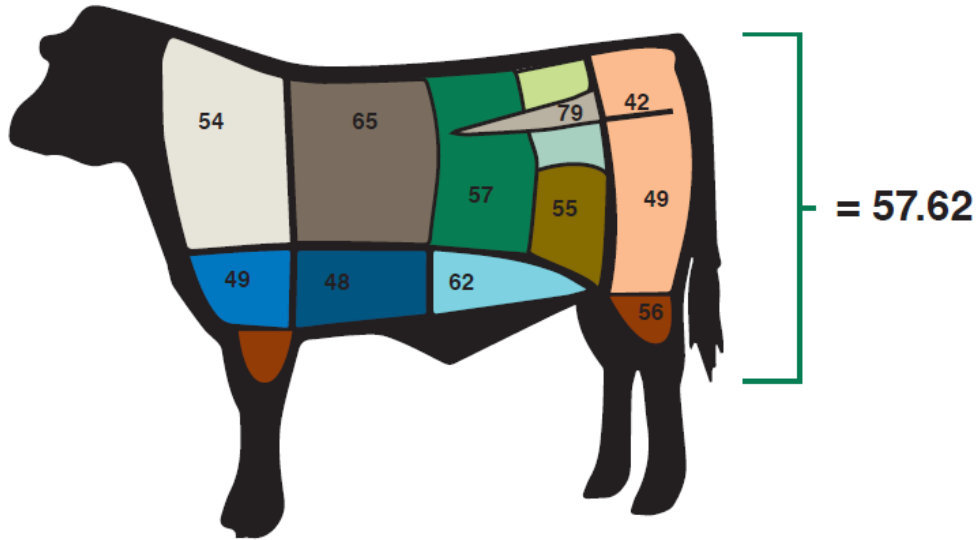


Illustration for example purposes only

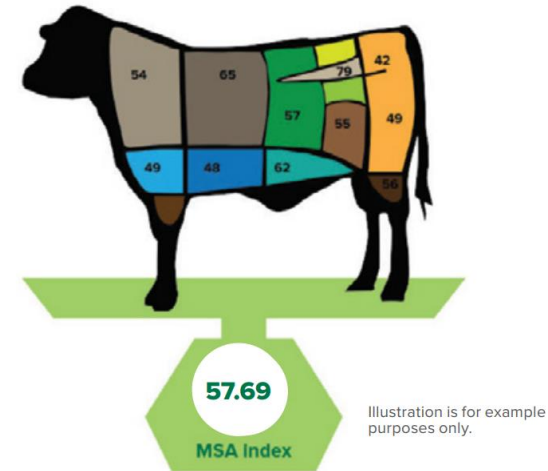
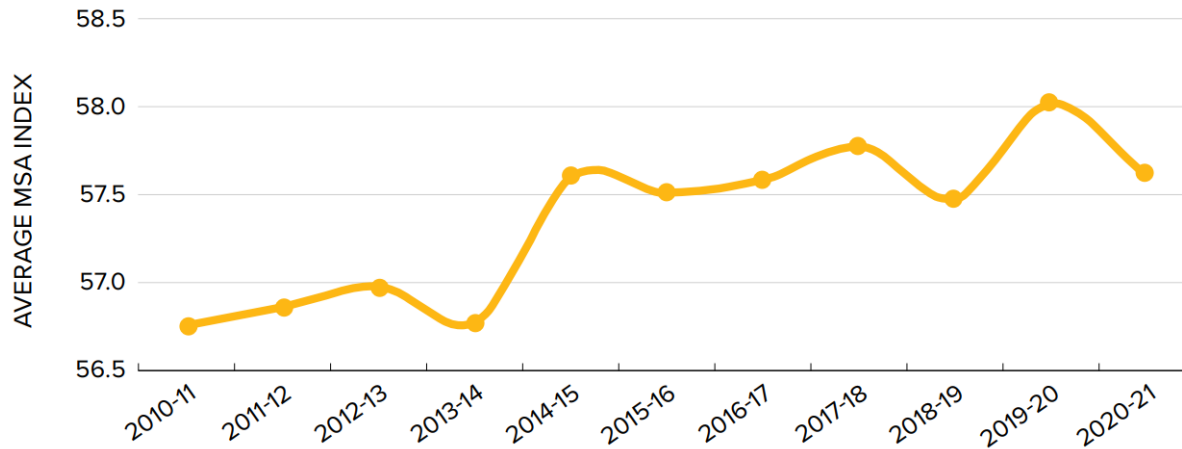
- A **single number** to indicate the overall quality of a carcass
- A weighted average of 39 eating quality scores of the primals
- Benchmarking tool to measure performance.

The predicted eating quality of a carcass based on producer controlled attributes

Current Australian eating quality performance

- Average **MSA Index** = **57.62** (ranging from 31.5-73) for 2020-21 financial year
- A decrease of **0.41 Index points** on 2019-20 (MSA Index = 58.03)

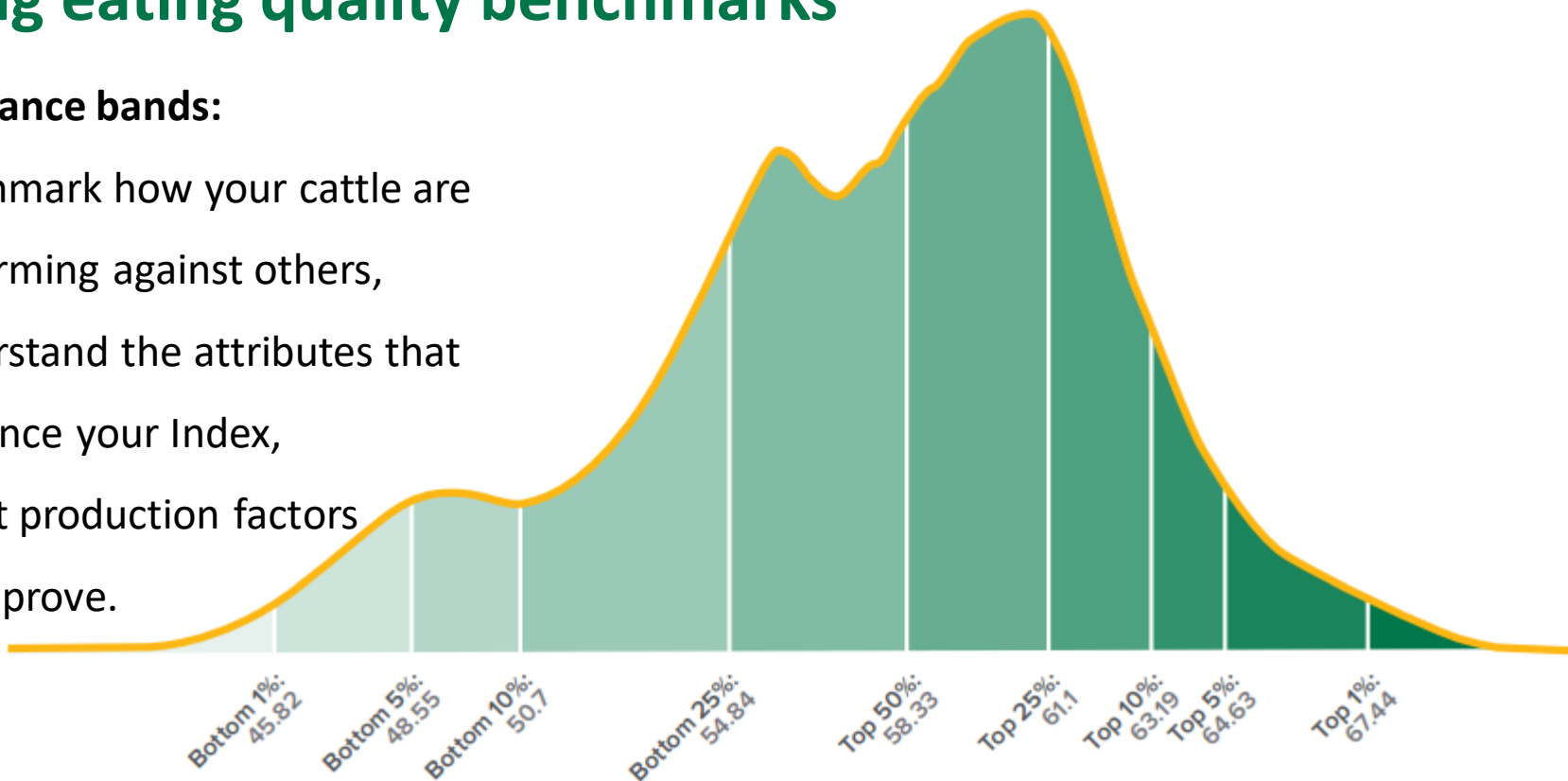
Change in national MSA Index since 2010-11



Setting eating quality benchmarks

Performance bands:

- Benchmark how your cattle are performing against others,
- Understand the attributes that influence your Index,
- Target production factors to improve.



How do you know where you are going, if you don't know where you are?

Impact of attributes on the MSA Index

Carcase Input	Size of effect on the MSA Index (units)	Relative Importance
HGP Status	-5	Very High
Milk-fed Vealer	4	Very High
Saleyard	-5	Very High
MSA Marbling	0.15	High
Hump Height	-0.7	High
Ossification	-0.6	High
Rib Fat	0.1	Medium
Hot Standard Carcase Weight	0.01	Low
Gender	0.3	Low



MSA Index quantifies the impact of production decisions

MSA Index – MSA Index calculator

Enter carcass measurements to predict the MSA index values

Body	TBC	Sex	HGP	MFV	Sale Yard	Rinse / Flush	HSCW	Hang Method	Hump Height	Oss	MSA Marble	Rib Fat	Ultimate pH	Loin Temp	Index	Cut/Cook details
1	X	M	N	N	N	N	269.8	AT	120	140	240	5	5.68	5.5	52.67	Show Result
2	X	M	N	N	N	N	339.2	AT	90	130	350	6	5.65	5.4	60.01	Show Result

[Add another carcass](#)
[Calculate MSA Index](#)
[Print](#)
[Download MSA factsheet](#)



Within myMSA

www.mymrsa.com.au

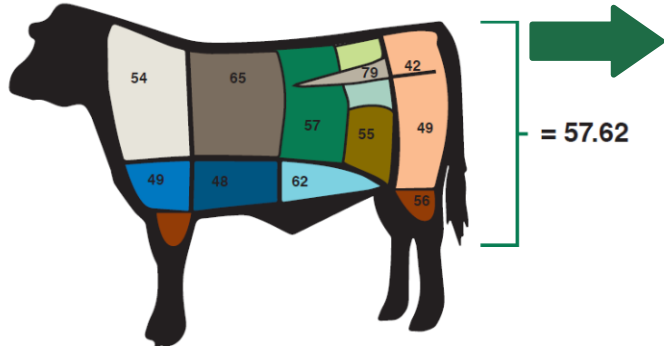
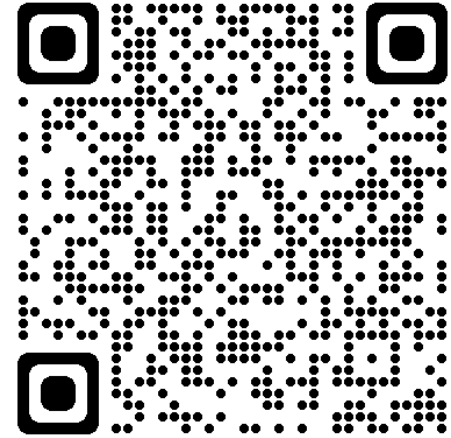


Illustration for example purposes only

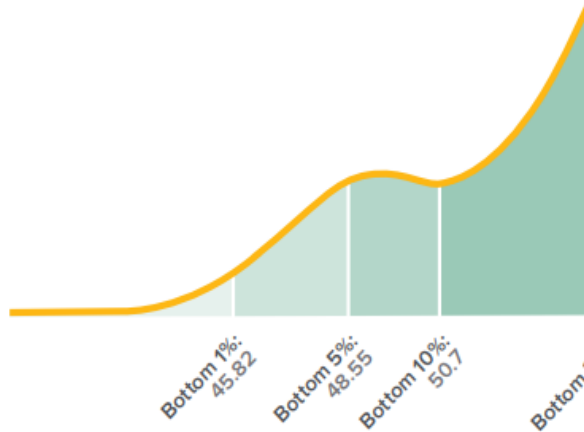


www.nextgen.mymrsa.com.au/beef/calculator

Shifting the MSA Index: on-farm

- HSCW – 300kg
- TBC - X
- Hump – 90mm
- Ossification – 180
- MSA Marbling – 300
- Rib Fat – 5mm
- **MSA INDEX = 55.52**

(MALE, HGP - No, MFV - No, Saleyard – No)



Beef / Calculator ?

MSA Index Calculator

[more info...](#)

HGP
N

Sex
M

HSCW
300

TBC
X

Hump
90

Oss
180

MSA ...
300

RF
5

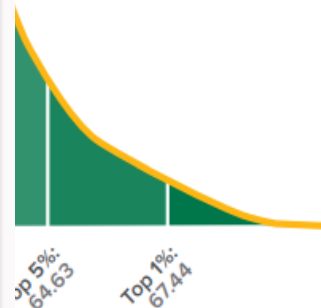
MFV
N

S/yard
N

Results

Attribute	Value
MSA Index	55.52


CALCULATE



PRODUCER STATE	TOP 1%	TOP 5%	TOP 10%	TOP 25%	TOP 50%	BOTTOM 25%	BOTTOM 10%	BOTTOM 5%	BOTTOM 1%
NSW	66.21	63.73	62.53	60.48	57.67	55.6	53.85	52.04	47.45
NATIONAL	67.01	64.18	62.79	60.68	57.92	55.03	51.90	49.37	46.36

Hump height: on-farm

- Range of 50mm-140mm across QLD
- **Select animals that suit your environment**

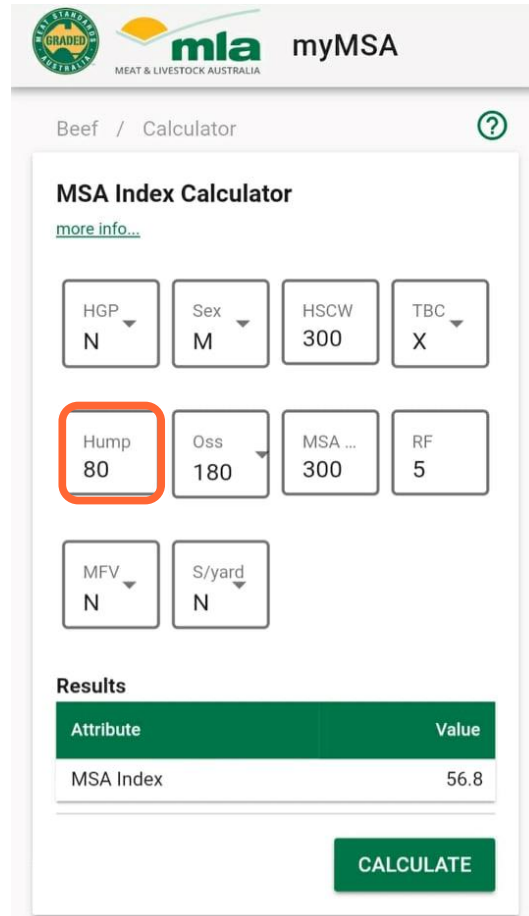
90mm Hump Height  80mm Hump height
= 1.28 Index units

New Index – 56.80



In production systems where tropical breed content is required, traits within breed that will improve EQ become even more important

Default MSA Index: 55.52



Beef / Calculator ?

MSA Index Calculator

[more info...](#)

HGP N	Sex M	HSCW 300	TBC X
Hump 80	Oss 180	MSA ... 300	RF 5
MFV N	S/yard N		

Results

Attribute	Value
MSA Index	56.8

CALCULATE

High
impact

Hot standard carcass weight: on-farm

Increasing average daily weight gain by 0.5kg/day

- Relative increase of 25kgHSCW

300kg carcass  325kg carcass

= 0.23 index units

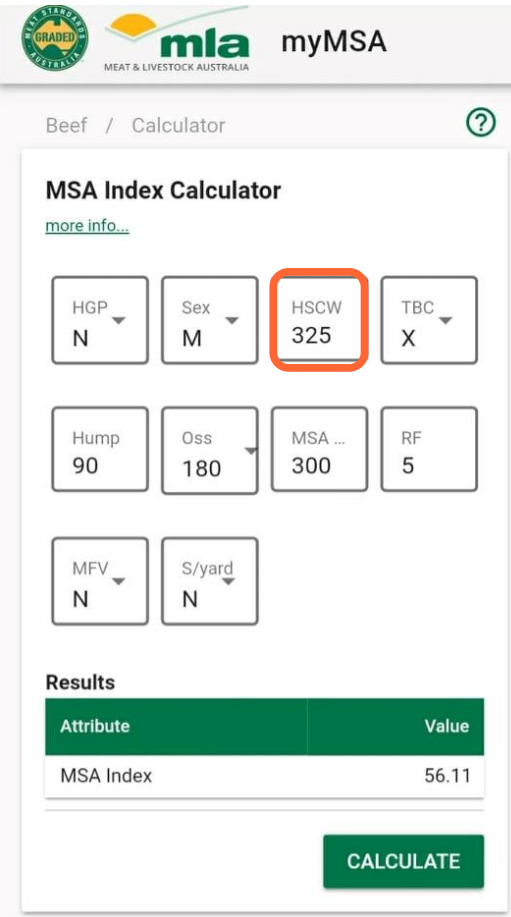
New Index – 56.11



Gains of less than 0.8kg/day can lead to increased incidence of non-compliance to pH

Default MSA Index: 55.52

Low
impact



The screenshot shows the myMSA MSA Index Calculator interface. At the top, it displays the 'Default MSA Index: 55.52' and the 'myMSA' logo. The calculator is titled 'MSA Index Calculator' and includes a 'more info...' link. The input fields are arranged in a grid:

- HGP: N
- Sex: M
- HSCW: 325 (highlighted with a red box)
- TBC: X
- Hump: 90
- Oss: 180
- MSA ...: 300
- RF: 5
- MFV: N
- S/yard: N

The 'Results' section shows a table with the following data:

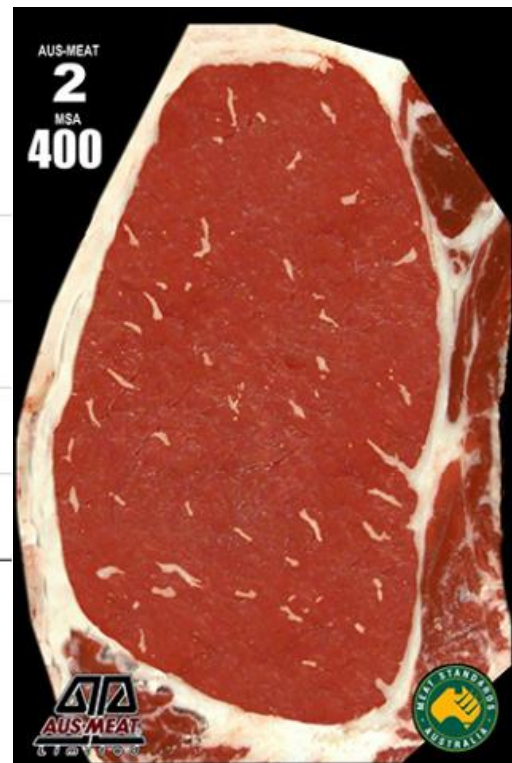
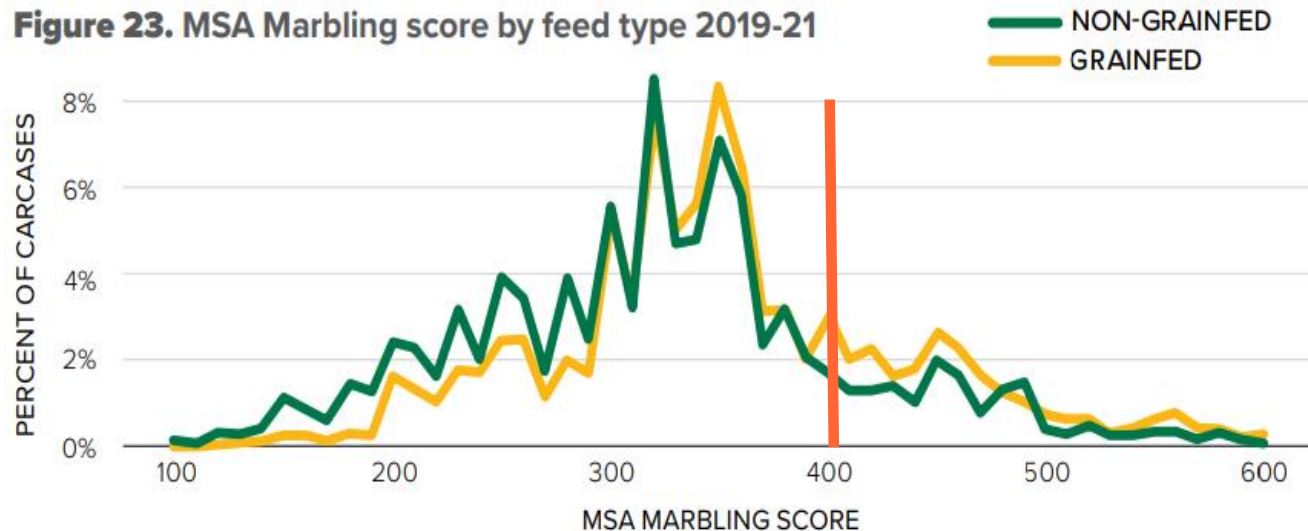
Attribute	Value
MSA Index	56.11

A 'CALCULATE' button is located at the bottom right of the calculator interface.

MSA marbling

- 72.1% grainfed carcasses had an MSA Marbling Score ≤ 400
- 82.7% non-grainfed carcasses had an MSA Marbling Score ≤ 400

Figure 23. MSA Marbling score by feed type 2019-21



MSA marbling: on-farm using genetics

1% increase in IMF EBV of sire
= 27 ± 5 MSA marble score increase in progeny.

If we went from using +1.0 IMF% Bulls to +3.0 IMF% Bulls
= could expect an increase of **~60 units of MSA marbling** in progeny:

300 MSA Marble Score  360 MSA Marble Score

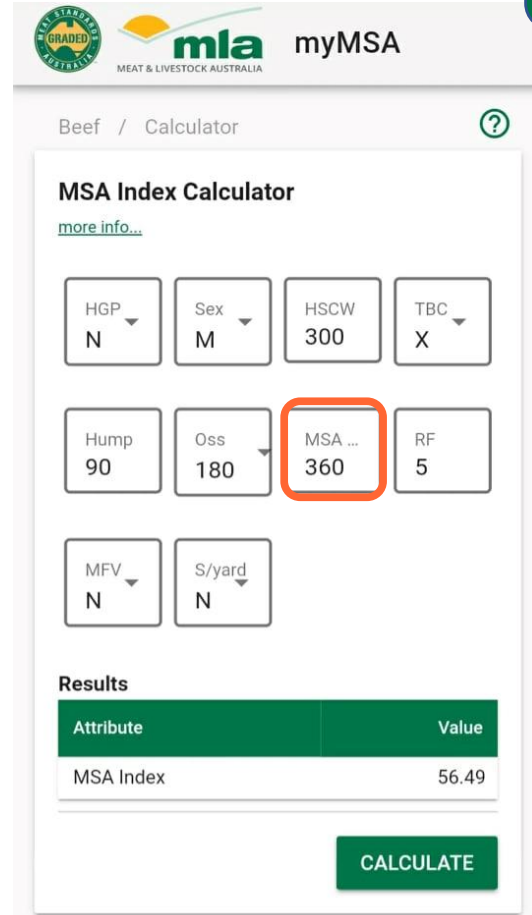
= 0.97 Index units
New Index – 56.49



Marbling is a highly heritable trait...
Have the genes for IMF and then feed them

Default MSA Index: 55.52

High
impact



Beef / Calculator

MSA Index Calculator

[more info...](#)

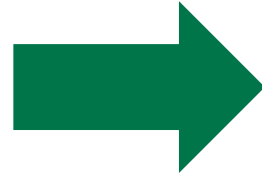
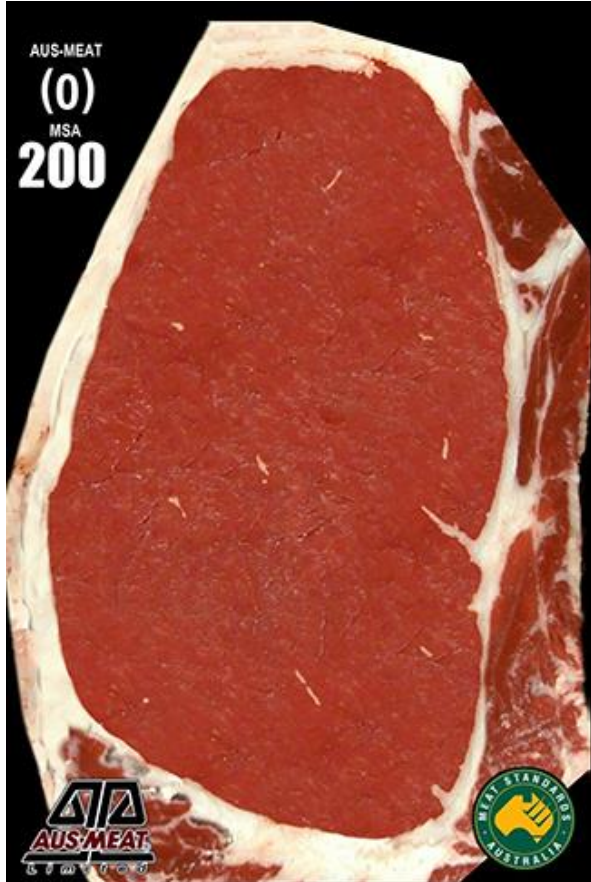
HGP N	Sex M	HSCW 300	TBC X
Hump 90	Oss 180	MSA ... 360	RF 5
MFV N	S/yard N		

Results

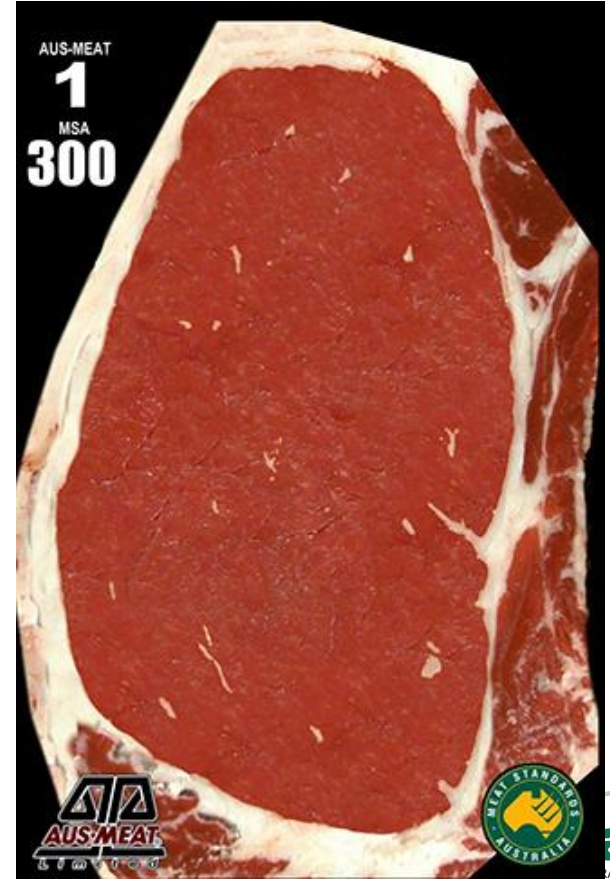
Attribute	Value
MSA Index	56.49

CALCULATE

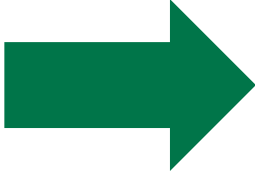
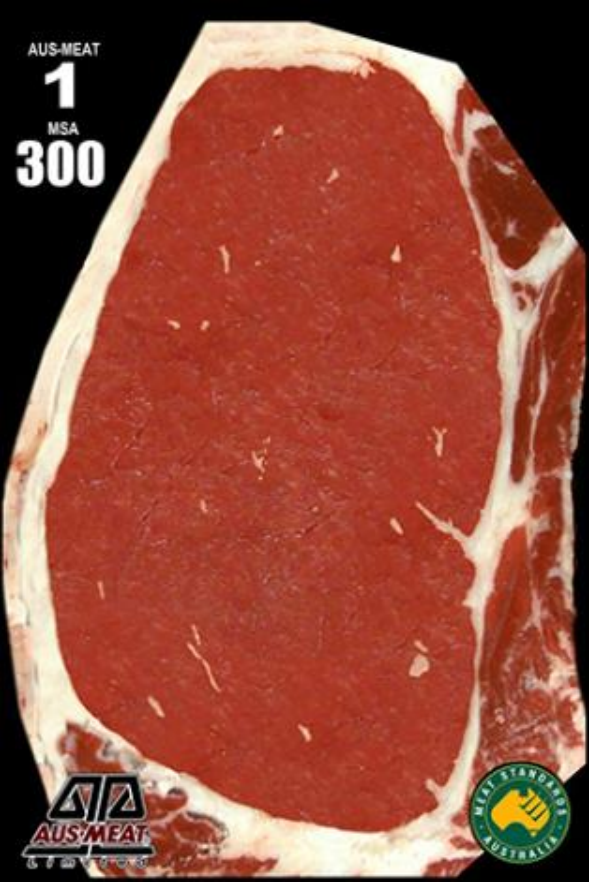
MSA marbling: on-farm



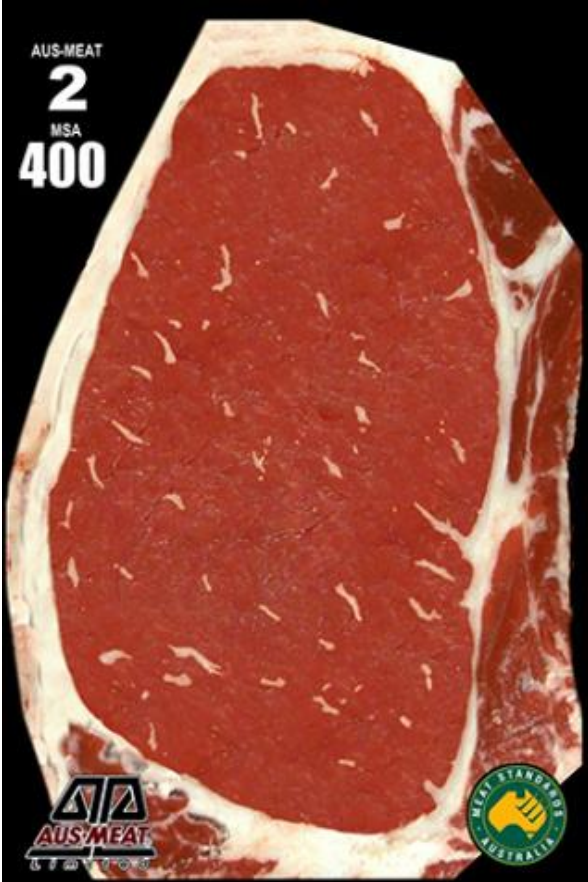
+100
=
+1.62



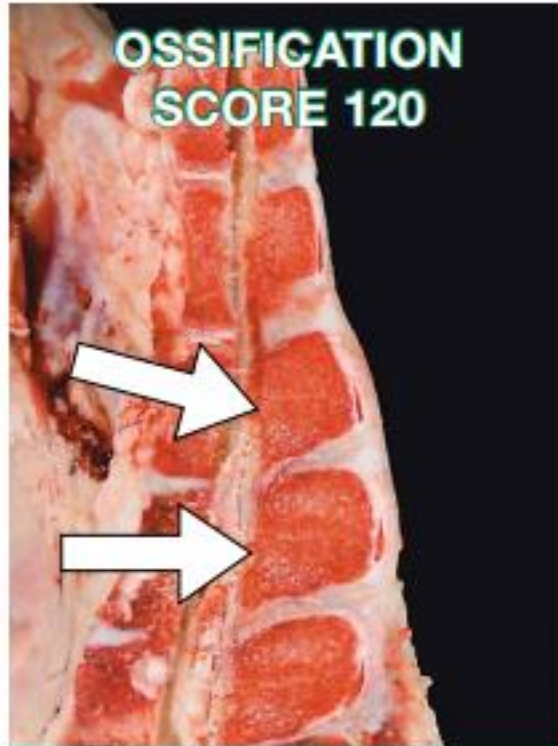
MSA marbling: on-farm



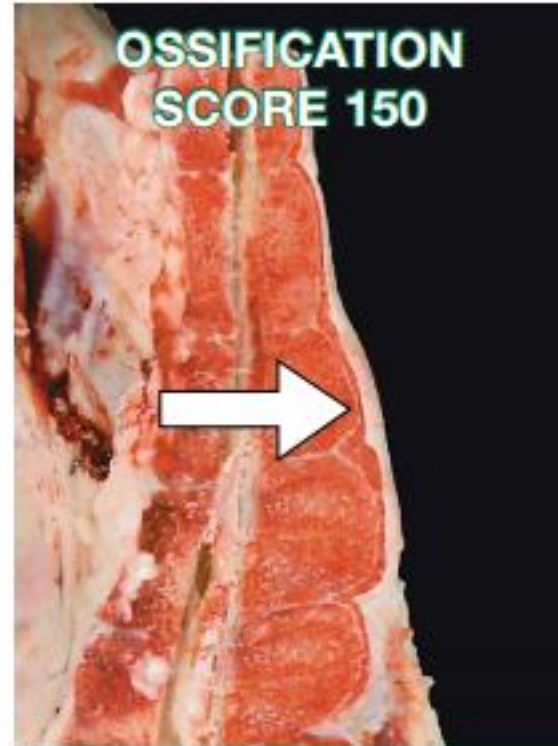
+100
=
+1.62



Ossification



In a young animal these
bones (vertebrae)
are separate.

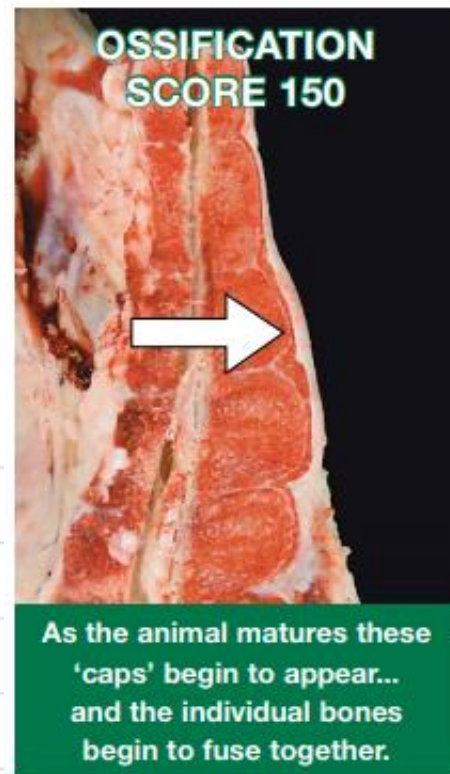
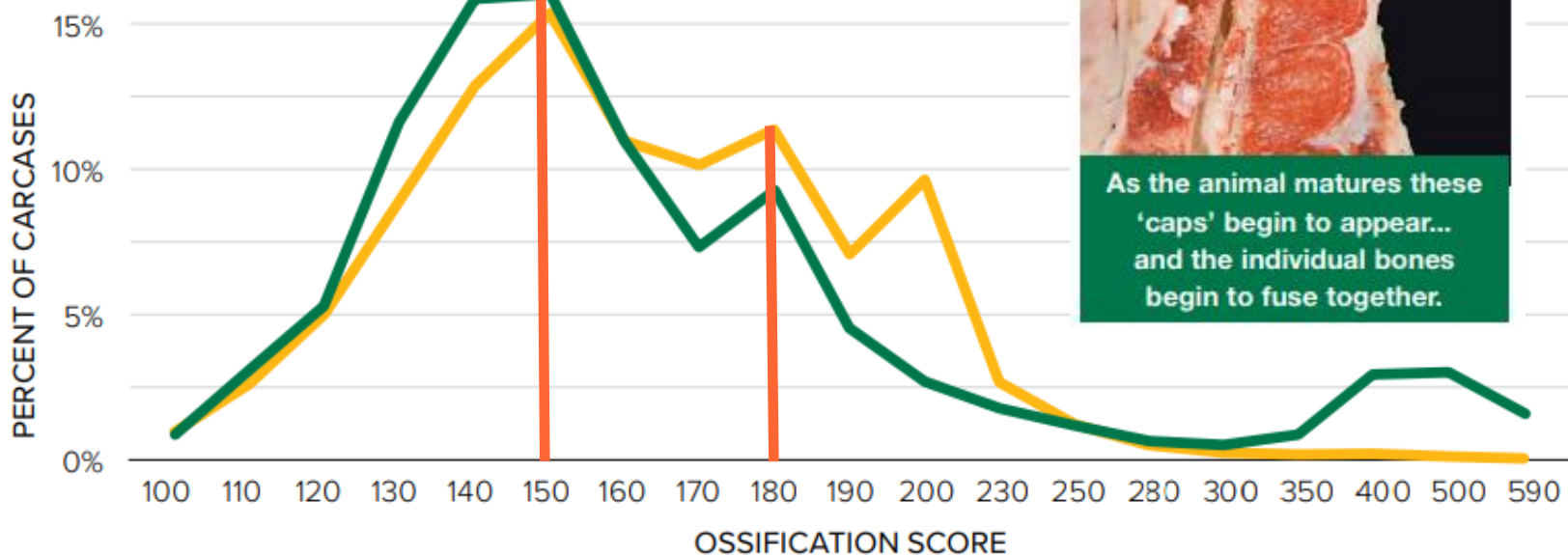


As the animal matures these
'caps' begin to appear...
and the individual bones
begin to fuse together.

Ossification

- 46% **grainfed** cattle had ossification scores ≤ 150
- 56% **non-grainfed** cattle had ossification scores ≤ 150

Figure 22. Ossification score by feed type 2019-21



Ossification: on-farm

- Whole of life nutrition
- 400 and 600-Day Weight EBV (kg)

180 Ossification Score  170 Ossification Score

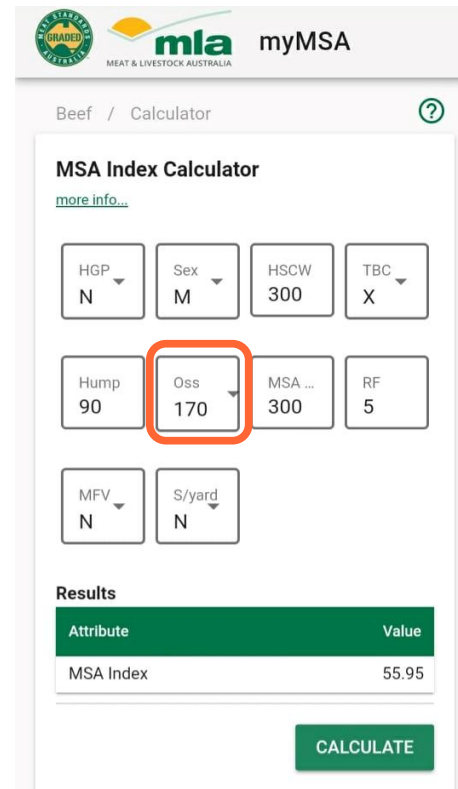
= 0.43 Index units

New Index – 55.95



Monitor variation of ossification over time to see changes across consignments and your herd.

Default MSA Index: 55.52



myMSA

Beef / Calculator

MSA Index Calculator

[more info...](#)

HGP N	Sex M	HSCW 300	TBC X
Hump 90	Oss 170	MSA ... 300	RF 5
MFV N	S/yard N		

Results

Attribute	Value
MSA Index	55.95

CALCULATE

High
impact

What do these changes mean?

meat & livestock AUSTRALIA **mia** myMSA
MEAT & LIVESTOCK AUSTRALIA

Beef / Calculator ?

MSA Index Calculator

[more info...](#)

HGP Sex HSCW TBC

Hump Oss MSA ... RF

MFV S/yard

Results

Attribute	Value
MSA Index	55.52

CALCULATE



+3.24



meat & livestock AUSTRALIA **mia** myMSA
MEAT & LIVESTOCK AUSTRALIA

Beef / Calculator ?

MSA Index Calculator

[more info...](#)

HGP Sex **HSCW** TBC

Hump **Oss** **MSA ...** RF

MFV S/yard

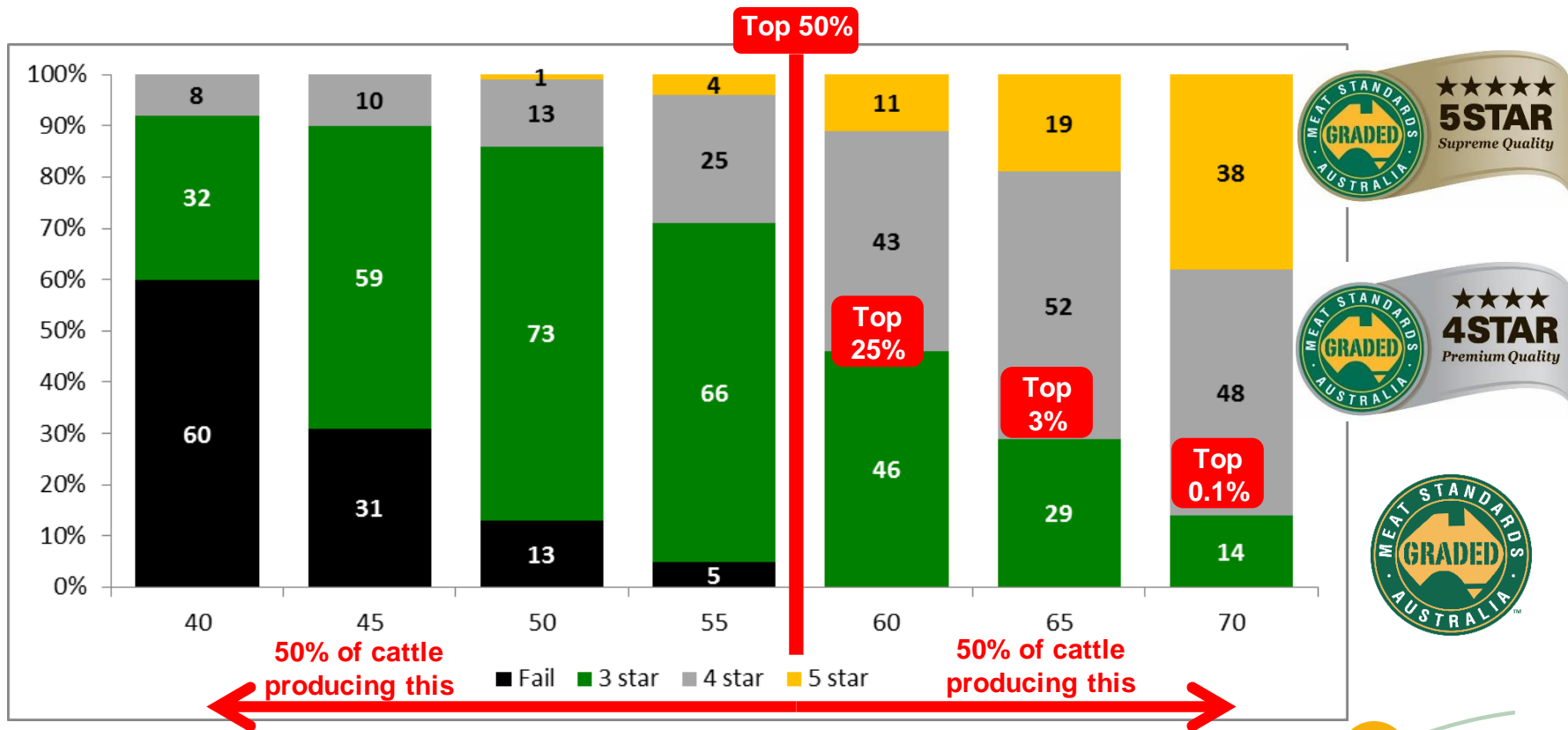
Results

Attribute	Value
MSA Index	58.76

CALCULATE

PRODUCER STATE	TOP 1%	TOP 5%	TOP 10%	TOP 25%	TOP 50%	BOTTOM 25%	BOTTOM 10%	BOTTOM 5%	BOTTOM 1%
NSW	66.21	63.73	62.53	60.48	57.67	55.6	53.85	52.04	47.45
NATIONAL	67.01	64.18	62.79	60.68	57.92	55.03	51.90	49.37	46.36

MSA Index relative to 3-4-5 star cuts (Good, Better, Best)



Based on 39 key primals at optimal cook methods

So, what resources can help producers?

- **Kill data and feedback sheets**
- **myMSA**
 - Benchmarking Data (National, State and Region)
 - MSA Index, compliance, key carcass attributes
 - Reports over time
 - Customised data reports
 - Download data to import into farm software
 - MSA Index Calculator
- **Australian Beef Eating Quality Insights**
 - [New 2021 Report Available](#)
- **Beef and Sheepmeat Information Kits (Tips & Tools)**



You can't manage what you don't measure



2021
AUSTRALIAN BEEF EATING
QUALITY INSIGHTS

Easy to access carcass feedback reports

myMSA LAURA GARLAND 121V

Beef / Reports VIEW BY LIST

Kill Date From dd/mm/yyyy Kill Date To dd/mm/yyyy SEARCH

	Kill Date	Plant	Head	Reports
<input type="checkbox"/>	23 Dec 2021	0218 - Bindaree Beef Pty Ltd	65	
<input type="checkbox"/>	22 Dec 2021	C840 - AVON VALLEY		
<input type="checkbox"/>	20 Dec 2021	0218 - Bindaree Beef Pty Ltd C840 - AVON VALLEY		
<input type="checkbox"/>	16 Dec 2021	0218 - Bindaree Beef Pty Ltd C840 - AVON VALLEY	126	
		0218 - Bindaree Beef Pty Ltd	13	

- Carcass feedback
- MSA non-compliance
- MSA graphs
- Company specification non-compliance
- Download data

Sophisticated Benchmarking Tools

Data filters

Select date range

Last 6 months

Benchmark region

State: QLD

Date range considered: May 15 2021 to November 15 2021.

Carcase filters

HGP

No filter on HGP

Sex

No filter on sex

Feed type

Grass

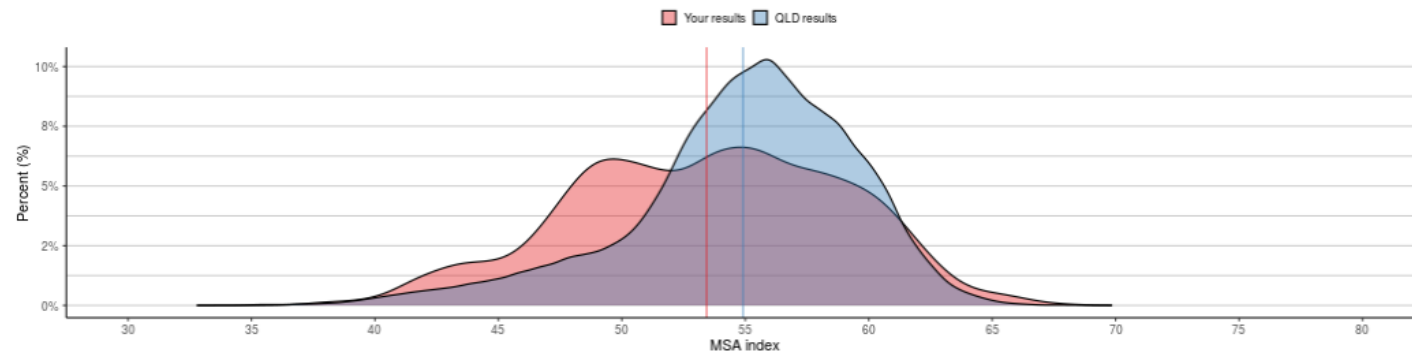
Ossification

No filter on ossification score

Number of carcasses after applying filters: 8687

MSA Index

	Your results	QLD results
MSA graded carcasses	7,376	197,737
95th percentile (top)	61.80	61.30
Average	53.43	54.91
5th percentile (bottom)	43.79	45.82



✓ Show average line on plot

Take home messages

1. Attributes have a varying impact on the MSA Index, which can be improved through the combination of nutritional strategies and sire selection
2. Use the benchmarking tools available to understand how cattle are performing and to assist with decision making
3. Log into myMSA and have a look at the data

MSA Excellence in Eating Quality series

Growing and grading the greatest meat on earth



New South Wales

Please join us at the Meat Standards Australia (MSA) Excellence in Eating Quality Awards series in 2022. Attendees will hear from Meat & Livestock Australia and industry speakers on how to maximise value using the MSA program, before recognising our top-performing MSA producers for the 2019-20 and 2020-21 financial years at the awards ceremony.

📍 Armidale City Bowling Club
92 Dumaresq St, Armidale NSW 2350

🕒 12:00–8:00pm
Tuesday 8 March 2022



GOOGLE: MSA Excellence in Eating Quality Series

Register at: <https://www.mla.com.au/marketing-beef-and-lamb/meat-standards-australia/msa-beef/MSA-Excellence-Series/>

Thank You

Questions?



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