Objective measurement informing feedback to improve productivity

Richard Apps

Meat & Livestock Australia

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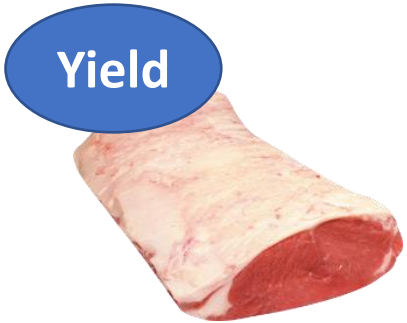
True value of the carcase

Carcase value

=



kg

Weight of retail cuts

X

$ / kg

Value of the cuts

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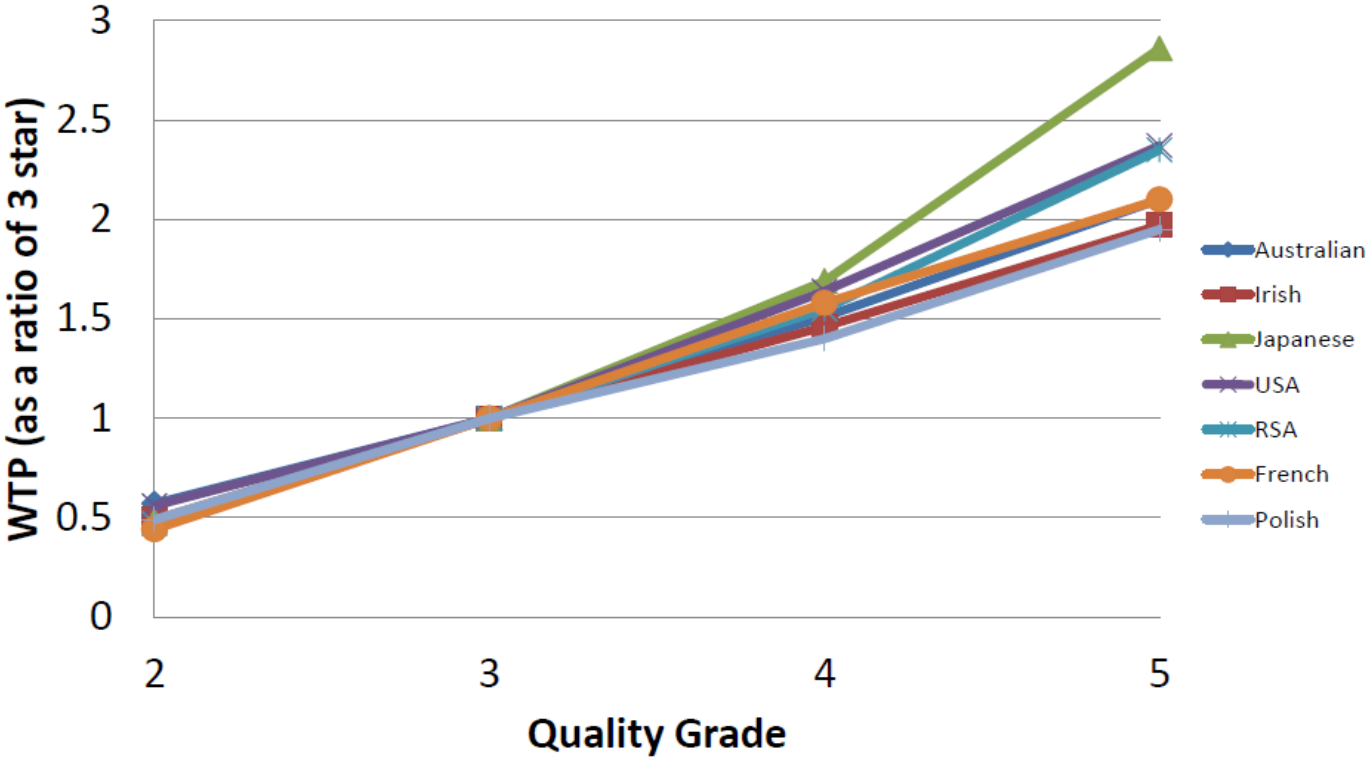
Beef Consumer Willingness to Pay



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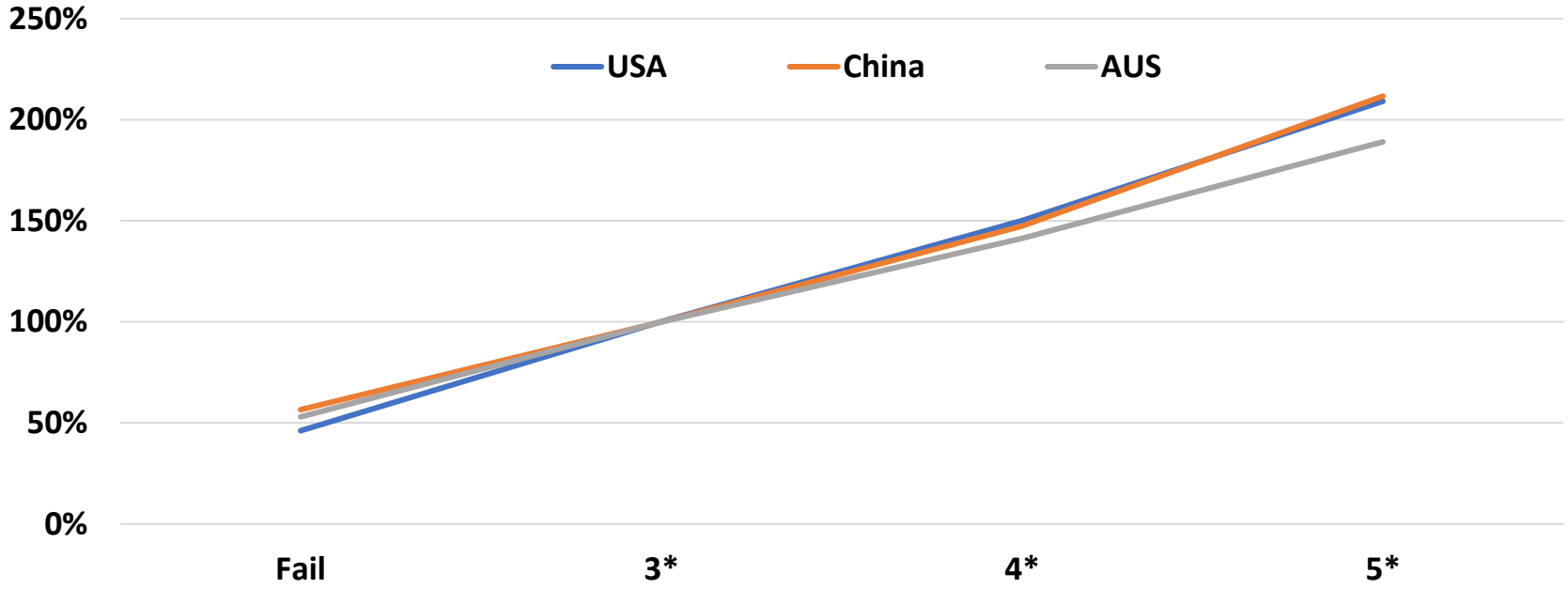
Consumers are willing to pay more for quality



Consumers will pay up to twice as much for guaranteed eating quality.

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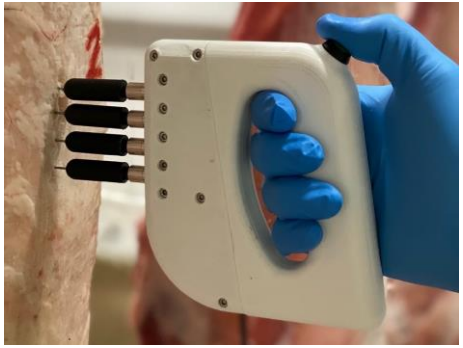
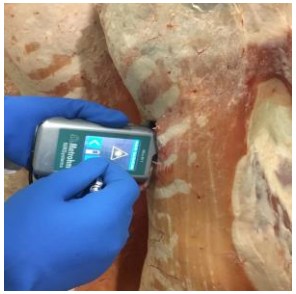
Multiple technologies under development





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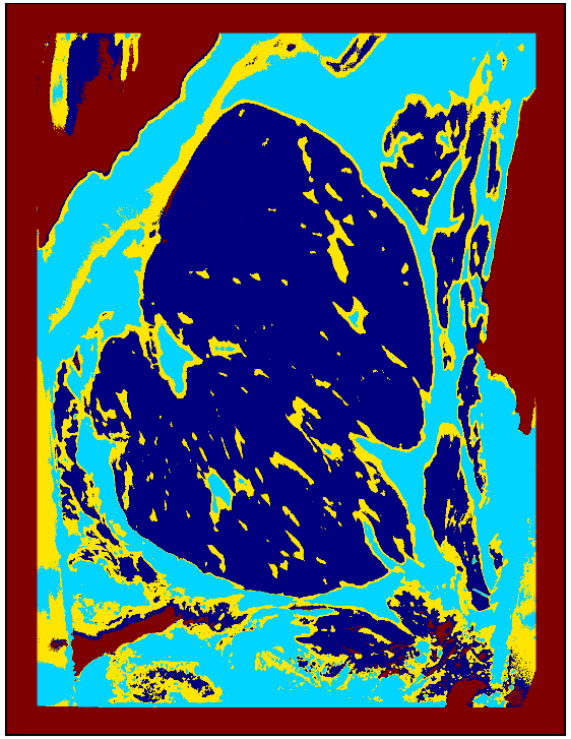
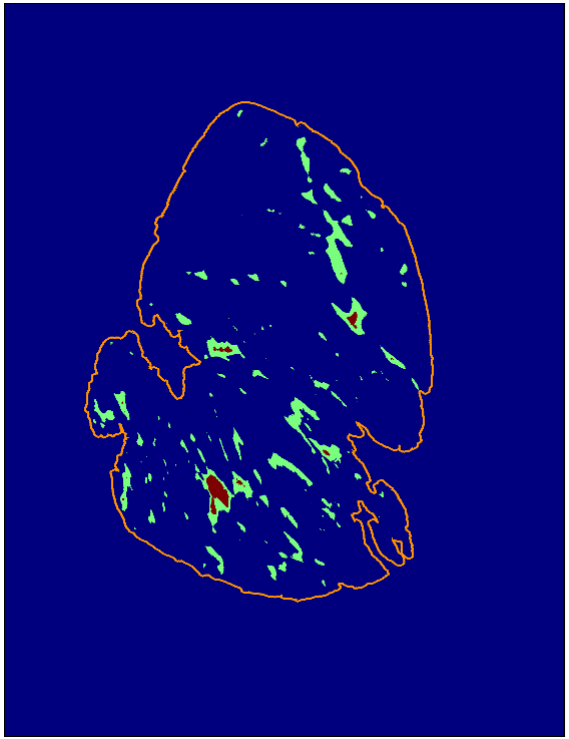
Rib-eye grading cameras





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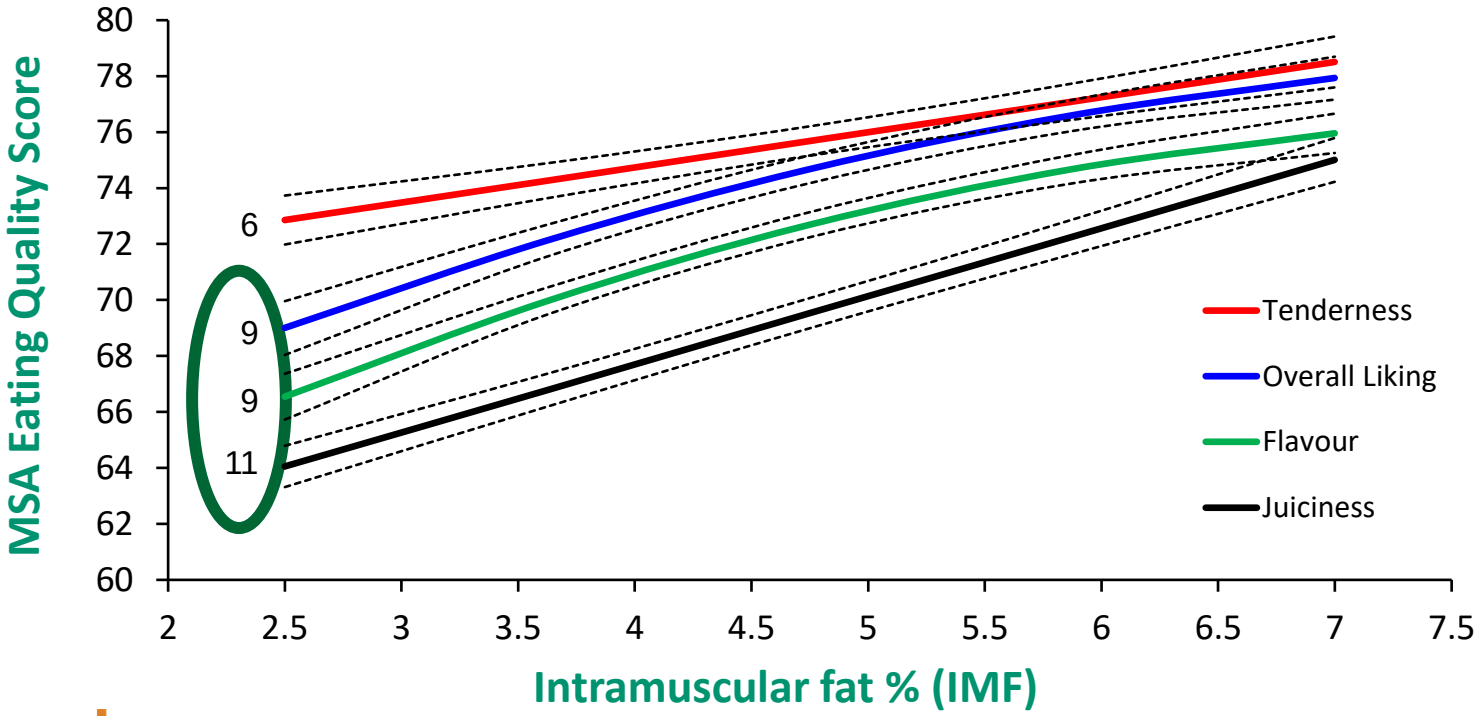
IMF increases lamb eating quality



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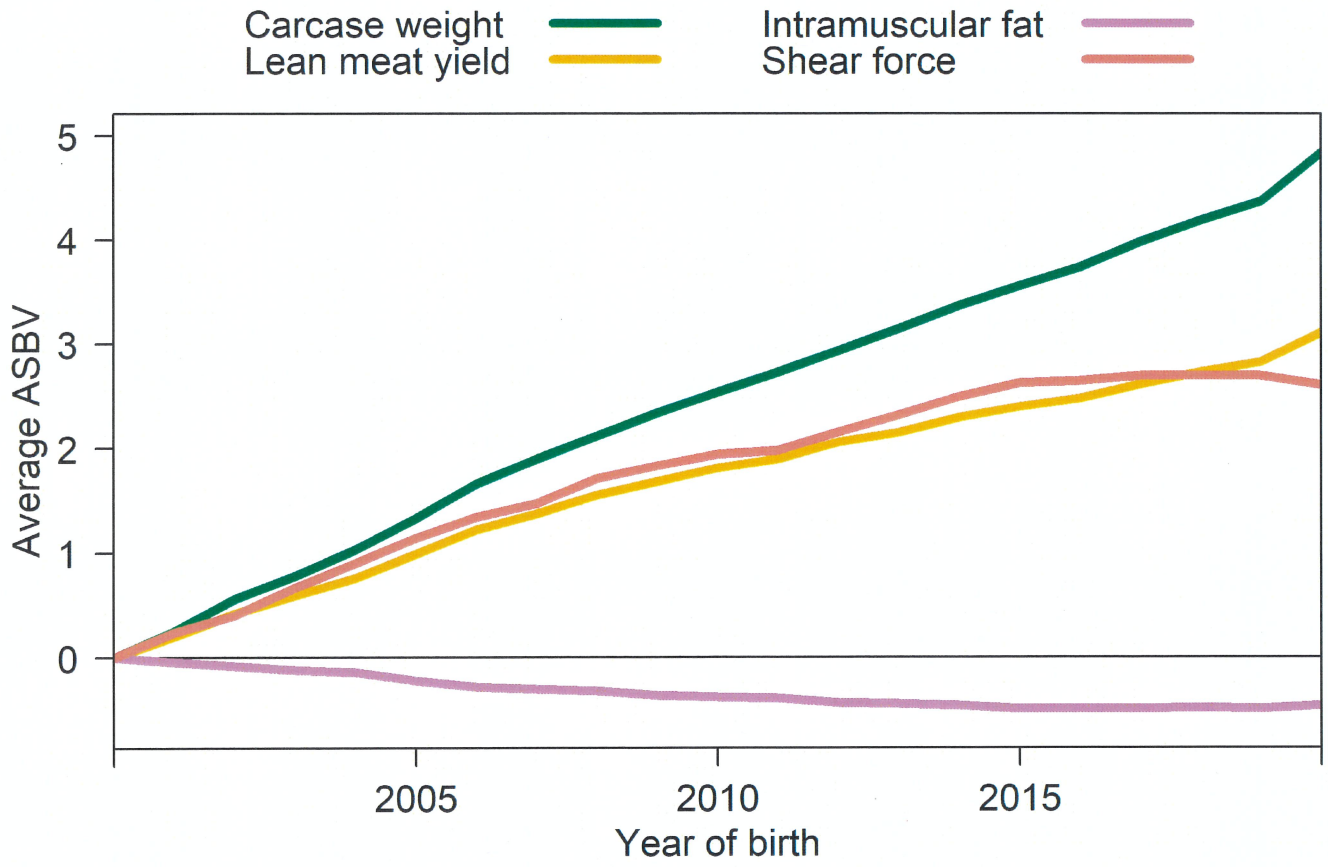
Productivity improving but eating quality declining



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Lamb Cut-based MSA - nine cut by cook combinations

INPUTS

- Hot carcase weight (HCW)
- Lean meat yield (LMY)
- Intramuscular fat (IMF)
- Electrical stimulation
- Ageing (5-20 days)

OUTPUTS

Grill	Roast	
knuckle	knuckle	5STAR Supreme Quality
loin	leg	4STAR Premium Quality
outside	loin	GRADED
rump	shoulder	UNGRADE
topside		

Carcase inputs will generate nine potential EQ outcomes.

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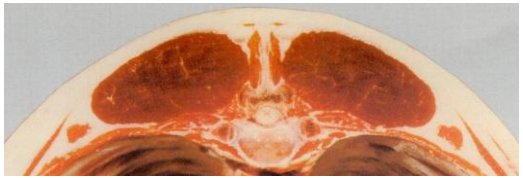
Why is yield important in lamb?

Score 4

Carcase Wt. 23.0 kg

GR 20.0 mm

Saleable Meat Yield 48%

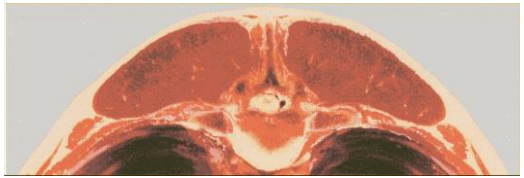


Score 2

Carcase Wt. 23.6 kg

GR 10.0 mm

Saleable Meat Yield 56%



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2.7kg extra saleable weight

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Excess fat costs - on-farm & in processing

- On-farm – reduced feed-efficiency (4 - 1)
- Bone-out time compared to 23kg FS3
  - FS4 = +10%
  - FS5 = +20%
  - 30 Kg FS5 = +40%

- High Fat Score/GR has a greater negative effect on profit in heavier carcases.

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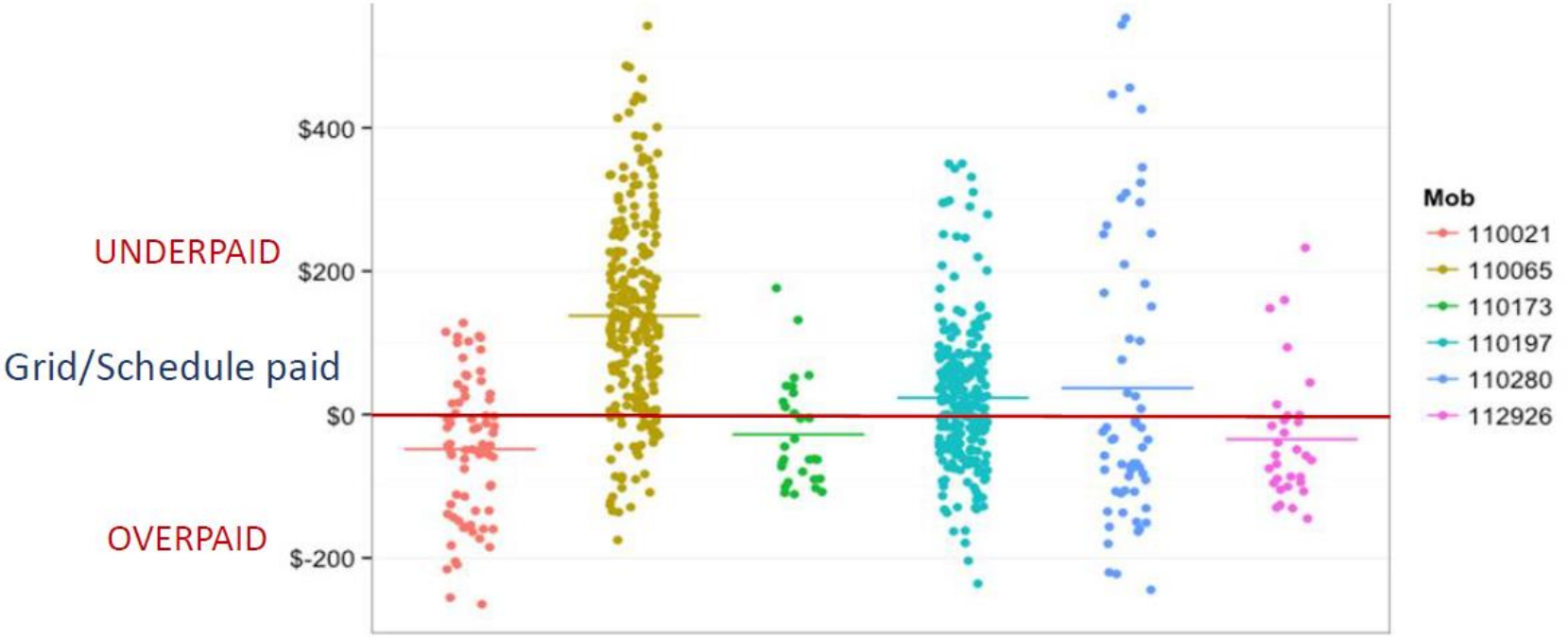
Variation in beef carcase value



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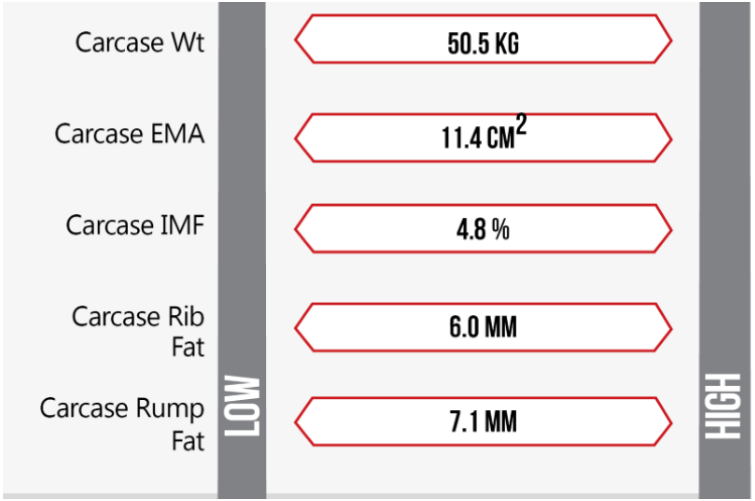
Angus Australia Sire Benchmarking Program

Cohort 1 – 3: 121 sires

Top 5 v Bottom 5 Sires within year



Cohort 4: 21 sires

- 283 steers

Sire progeny group carcase value variation

- $619

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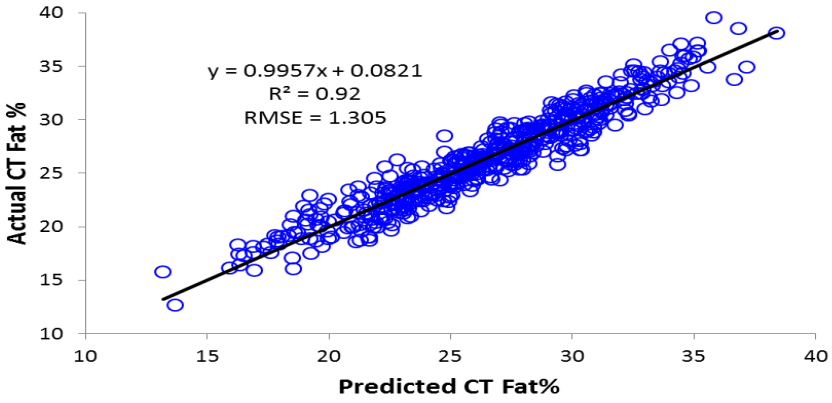
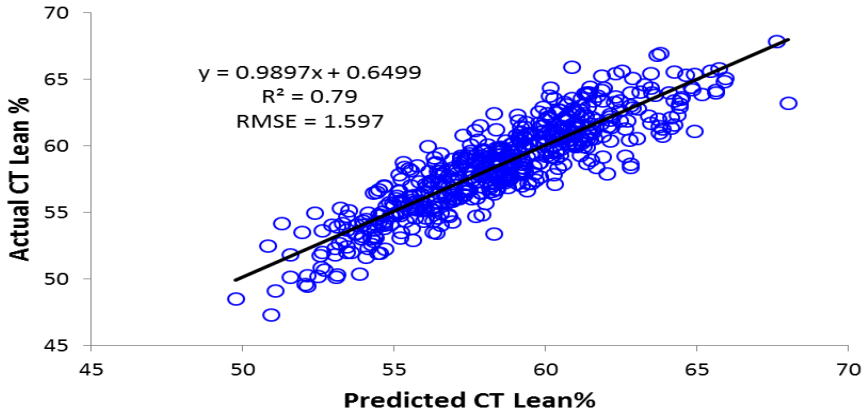
DEXA predicting lamb carcase composition

CT Fat%



CT Lean%



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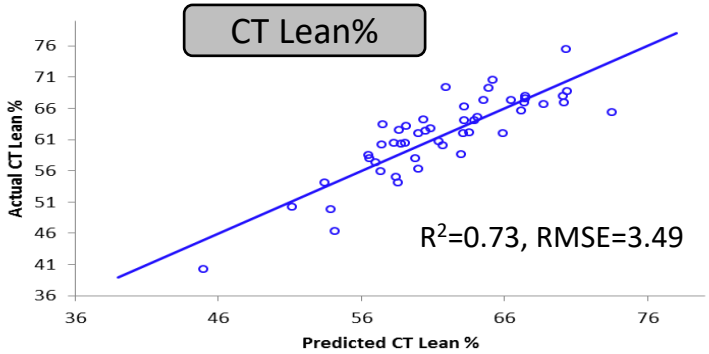
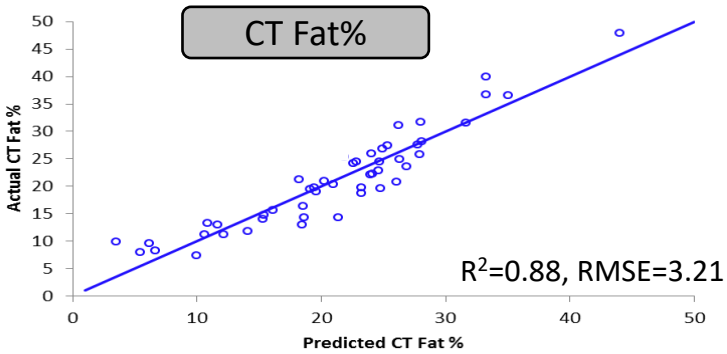
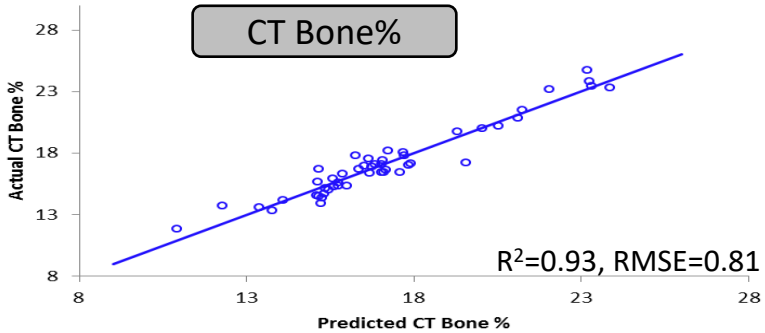
DEXA predicting beef carcase composition







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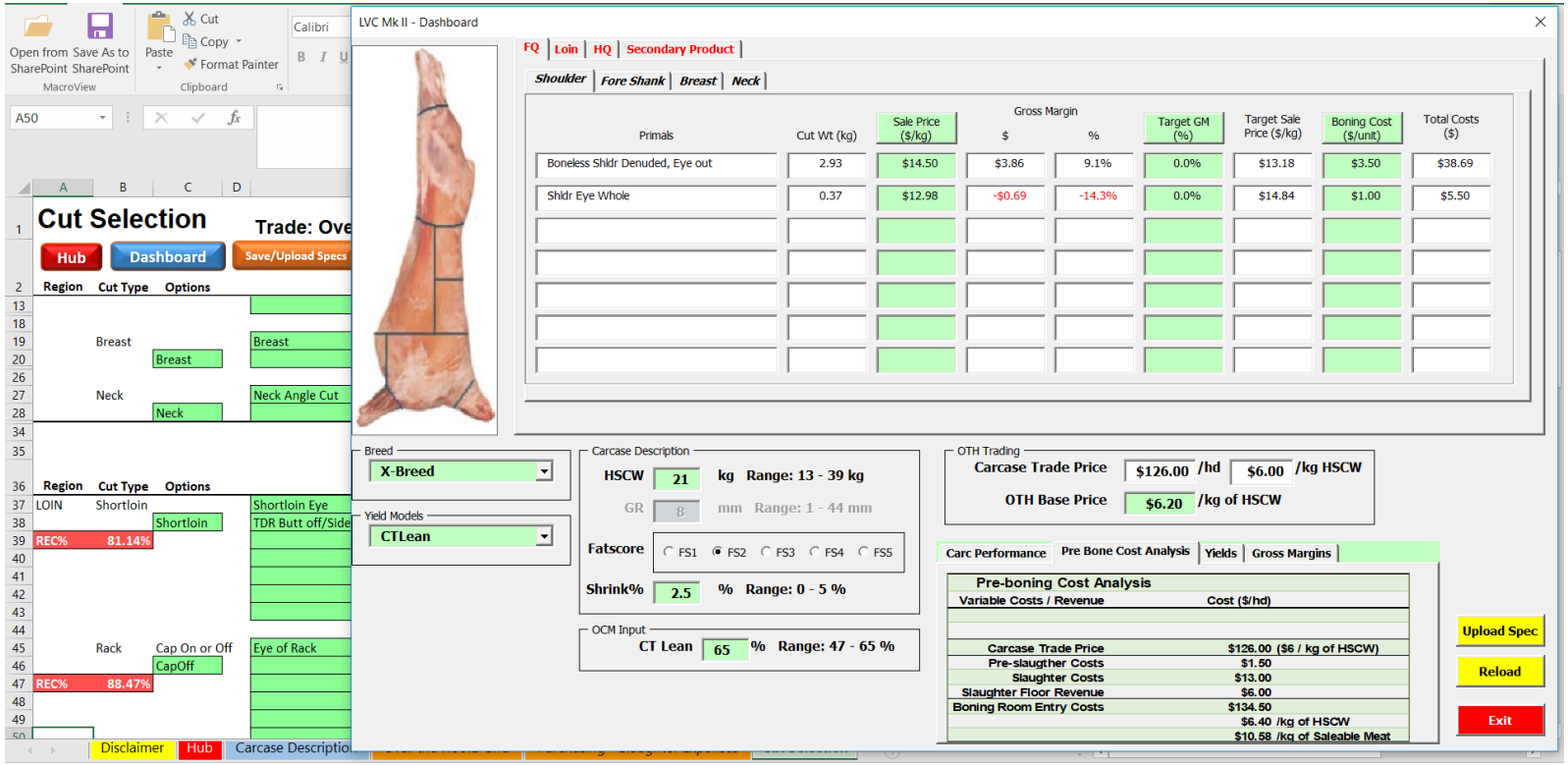
Carcase value calculator



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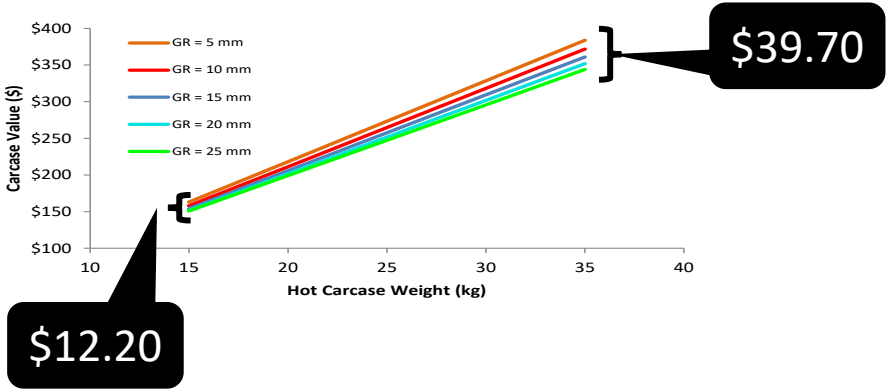
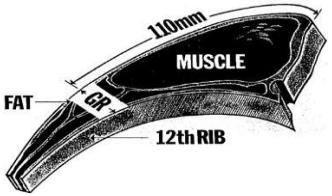
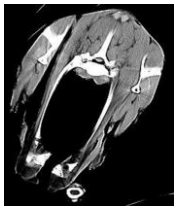
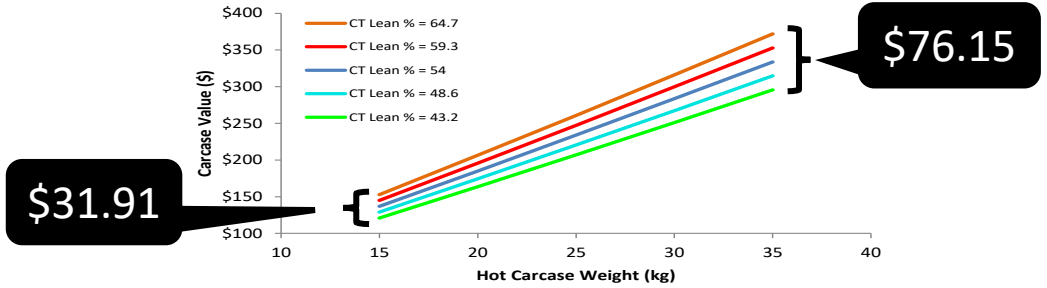
What does extra precision mean?









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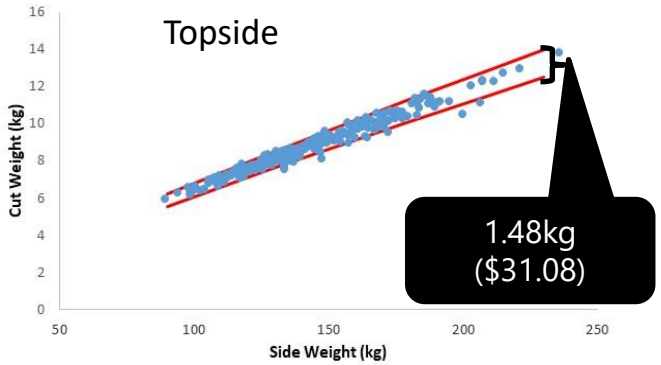
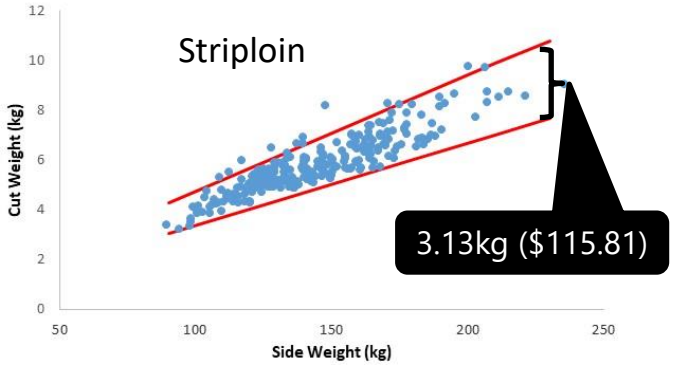
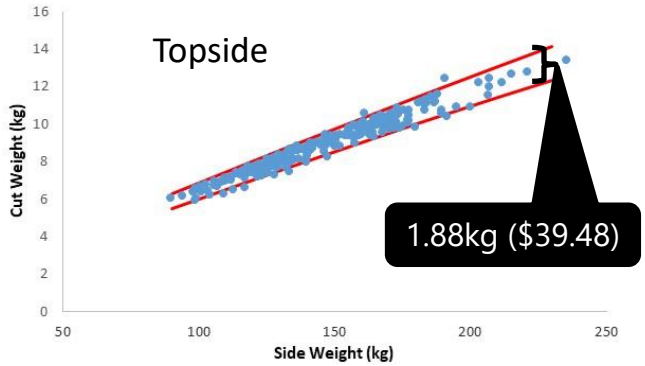
Beef DEXA predicting cut weights

P8 model



DEXA model





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A CARGILL JOINT VENTURE

SCOTT

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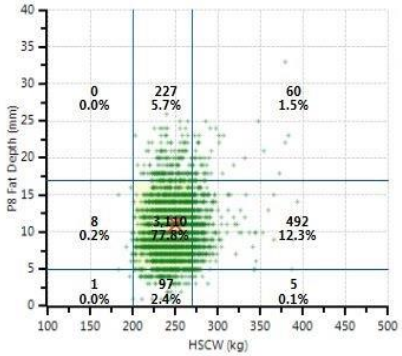
How do I measure up?

Dashboard | Carcase analysis | Compare | Details | Compliance % | Compliance $ | MSA Summary | Carcase Trends | Supplier ranking | Grid setup

Start kill date: 01/04/2012 | End kill date: 30/04/2012 | Sex: Any | Supplier PICs | Target market: Lightweight Yearling | Select lots: Refresh

Analysis Grid: Lightweight Yearling



P8 Fat Depth (mm)	HSCW (kg) 0-179.9	180-199.9	200-269.9	270-299.9	300-329.9	330+
21+						
17-20.9			179	38	2	
5-16.9		8	3110	455	21	
4-4.9		1	67	3		
0-3.9			30	2		

Compliance	
Compliance to HSCW (kg) & P8 Fat Depth (mm)	77.8%
Compliance to HSCW (kg)	85.9%
Compliance to P8 Fat Depth (mm)	90.3%
Compliance to Dentition	98.7%
Compliance to Bruising	100.0%

	Male	Female	Unknown	All
No. Head	3,596	404		4,000
No. Condemned	0	0		0
Total HSCW (kg)	897,828.5	93,893.5		991,722.0
Max HSCW (kg)	393.0	379.0		393.0
Min HSCW (kg)	182.5	193.0		182.5
Avg HSCW (kg)	249.7	232.4		247.9
Max P8 Fat Depth (mm)	25.0	33.0		33.0
Min P8 Fat Depth (mm)	1.0	1.0		1.0
Avg P8 Fat Depth (mm)	10.2	11.0		10.3
Non-compliance count	849	82		931
Non-compliance cost	$47,034.05	$4,003.88		$51,037.93
Non-compliance cost/head	$55.40	$48.83		$54.82

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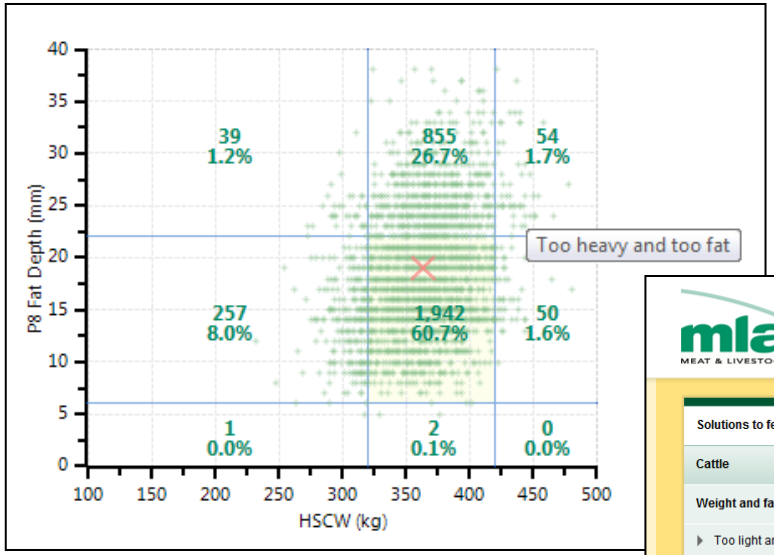
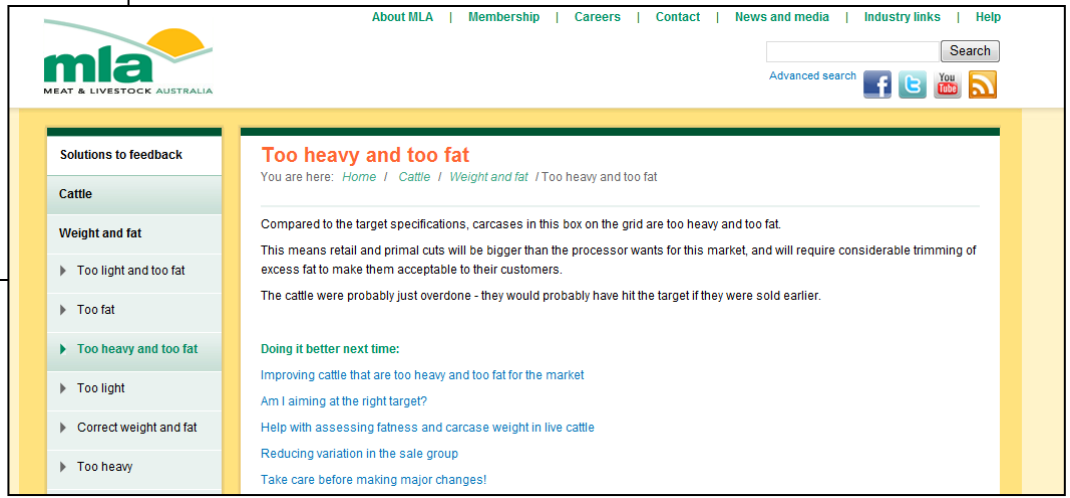
How can I improve?





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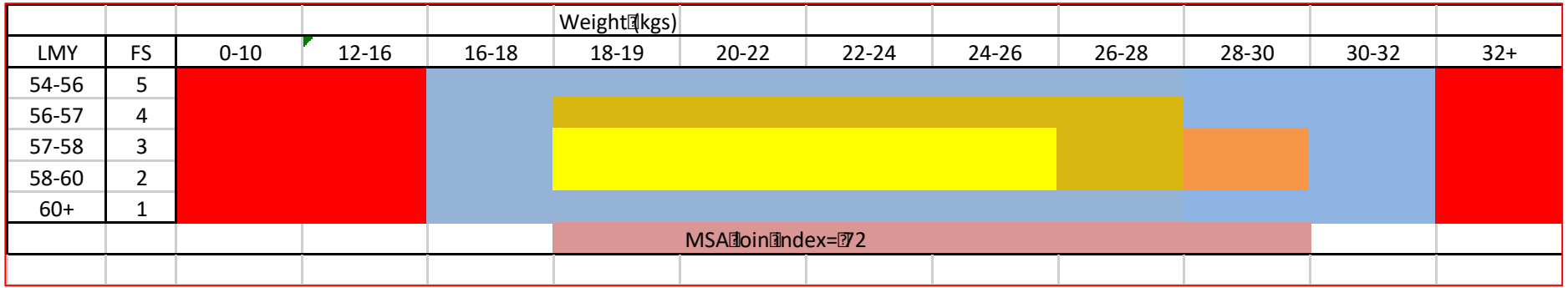
What might future grids look like?

- Will include weight
- Will include Fat Score
- Will include LMY
- Will include eating quality
- Possibly compliance bonus?



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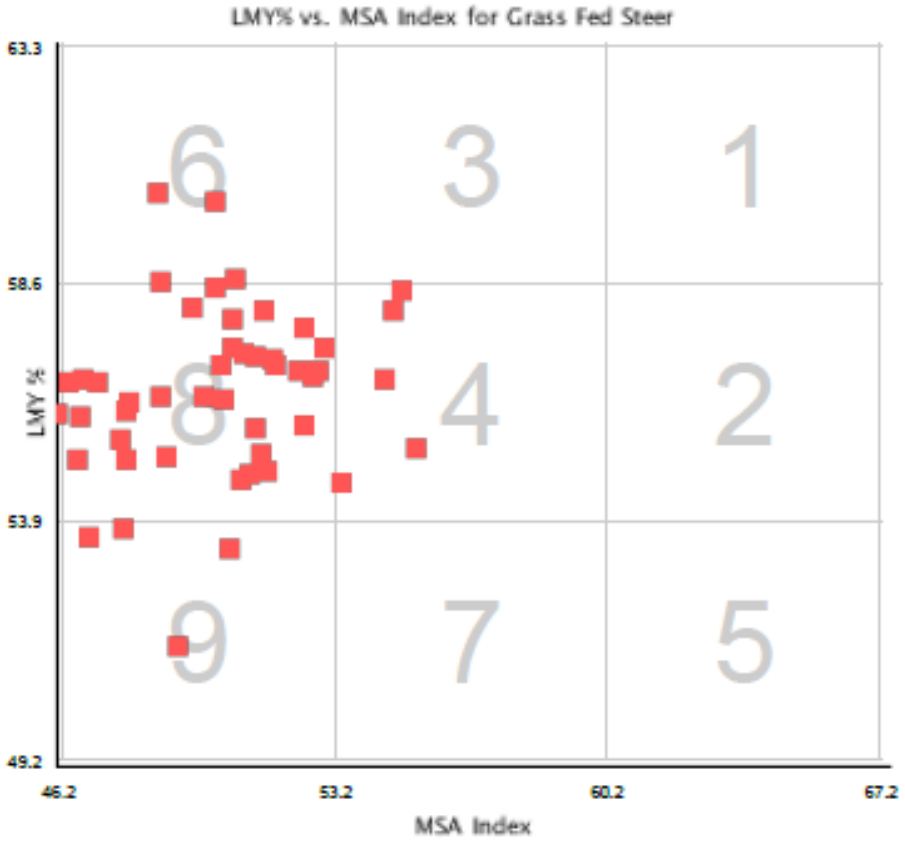
CARCASE KILL RESULTS VBM

Body	Sex	RFID	Farm Tag	Dent	Shape	Fat	MC	FC	Oss	AUS Mb	MSA Mb	EMA	BG	Breed	Weight	Righ
377	M			2	C	9	1C	2	160	1	300	56	9		130.0	5
378	M		34	2	C	8	1C	1	130	1	350	60	10		117.0	5
379	M		16	2	C	8	2	2	150	0	180	64	9		158.0	5
380	M		175	2	C	11	1C	3	170	1	300	37	10		135.0	5
381	M		54	2	C	5	3	2	150	1	320	55	10		131.5	5
382	M			2	C	5	3	3	140	0	140	60	11		142.0	5
383	M		87	2	C	6	1C	3	130	1	330	60	8		138.5	5
384	M		99	2	C	4	1C	3	150	0	180	71			139.0	4
385	M		122	1	C	8	2	2	140	0	210	56	12		128.0	5
386	M		47	4	C	5	1C	4	150	1	300	75	9		158.5	5
387	M		46	2	C	6	2	2	180	1	350	60	8		135.5	5
388	M		18	2	C	5	1C	2	150	0	250	50	8		126.5	5
389	M		110	0	C	9	3	3	140	1	300	65	9		137.5	5
390	M		156	2	C	3	1C	3	150	0	230	44			132.5	4
391	M		92	0	C	4	3	2	130	0	270	64			140.0	4
392	M		91	2	C	5	1C	2	170	1	320	42	12		138.0	5
393	M		97	2	C	8	1C	3	130	1	330	50	6		130.0	5
394	M		77	2	C	6	1C	3	150	2	430	72	6		137.0	5
395	M		56	2	C	6	1C	2	150	0	200	74	9		160.5	5
396	M			2	C	6	2	1	140	0	240	44	9		135.0	5
397	M			2	C	8	2	2	160	1	320	50	9		126.0	5
398	M		6	4	C	8	3	3	190	1	350	76	11		122.5	5
399	M		121	2	C	5	1C	3	150	0	260	68	8		151.5	5
400	M		123	2	C	4	4	2	140	0	180	66			126.0	4
401	M		172	2	C	11	1C	3	200	0	250	65	12		139.0	5
402	M		161	4	C	5	2	3	140	1	300	60	10		128.5	5
403	M		94	2	C	10	3	4	190	0	230	64	12		131.0	5
404	M		151	2	C	8	1C	3	150	0	250	52	12		125.0	5

MSA Index	LMY* %	VBM Group
50.42	56.34	8
49.64	58.16	8
51.47	54.98	8
49.24	51.54	9
49.92	56.40	8
49.89	56.39	8
52.84	56.89	8
48.79	56.39	8
50.66	57.37	8
52.31	56.89	8
52.45	55.85	8
51.21	57.18	8
47.88	53.84	9
55.31	55.40	4
54.69	58.10	4

Total HSCW (kg)	Total Value	MSA Index	LMY* %	VBM Group
260.0	1,326.00	50.42	56.34	8
234.5	1,172.50	49.64	58.16	8
317.0	1,648.40	51.47	54.98	8
272.5	1,389.75	49.24	51.54	9
264.5	1,348.95	49.92	56.40	8
284.0	1,462.60	49.89	56.39	8
275.0	1,457.50	52.84	56.89	8
277.5	1,359.75			
257.5	1,300.38	48.79	56.39	8
316.5	1,614.15	50.66	57.37	8
272.0	1,441.60	52.31	56.89	8
256.5	1,346.63	52.45	55.85	8
274.5	1,399.95	51.21	57.18	8
265.0	1,298.50			
279.0	1,367.10			
275.5	1,405.05	47.88	53.84	9
259.5	1,362.38	55.31	55.40	4
276.5	1,382.50	54.69	58.10	4
319.5	1,661.40	51.66	57.12	8
271.0	1,382.10	51.38	55.30	8
251.5	1,270.08	51.20	55.77	8
244.5	1,234.73	48.76	60.37	6
303.5	1,638.90	52.42	57.77	8
252.5	1,212.00			
277.0	1,412.70	45.74	56.10	8
258.0	1,302.91	50.19	58.53	8
260.5	1,302.50	46.89	56.72	8
251.5	1,270.08	46.78	56.01	8



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Take home messages

Be prepared for more detailed feedback

- New objective measures = new carcase value feedback
- Use ASBVs, EBVs and Indexes to improve both LMY and EQ
  - balance is essential
- Develop management systems to capture genetic potential
- Use carcase feedback to benchmark and improve performance
- Develop your processor relationships

Tools and resources

- Australian Sheep Breeding Values (ASBVs)
- BREEDPLAN EBVs
- Meat Standards Australia (MSA)
- Livestock Data Link (LDL)
- Processor feedback systems