

Objective measurement informing feedback to improve productivity

Richard Apps

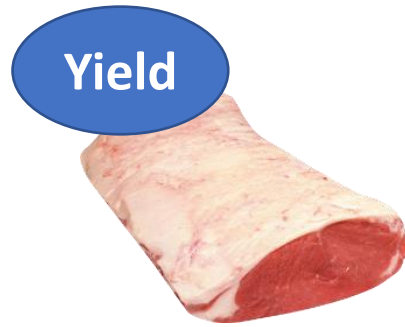
Meat & Livestock Australia

True value of the carcase



Carcase
value

=



kg

Weight of
retail cuts

X

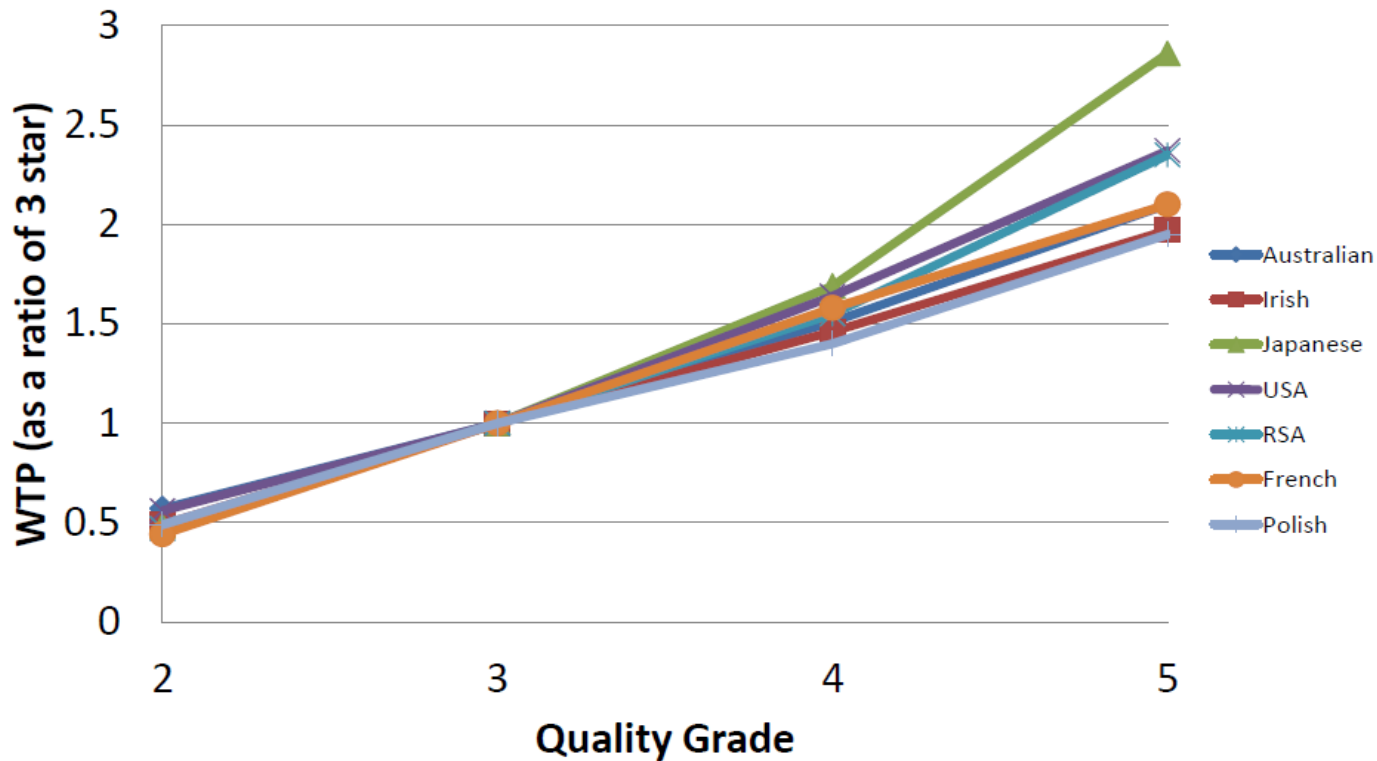


\$ / kg

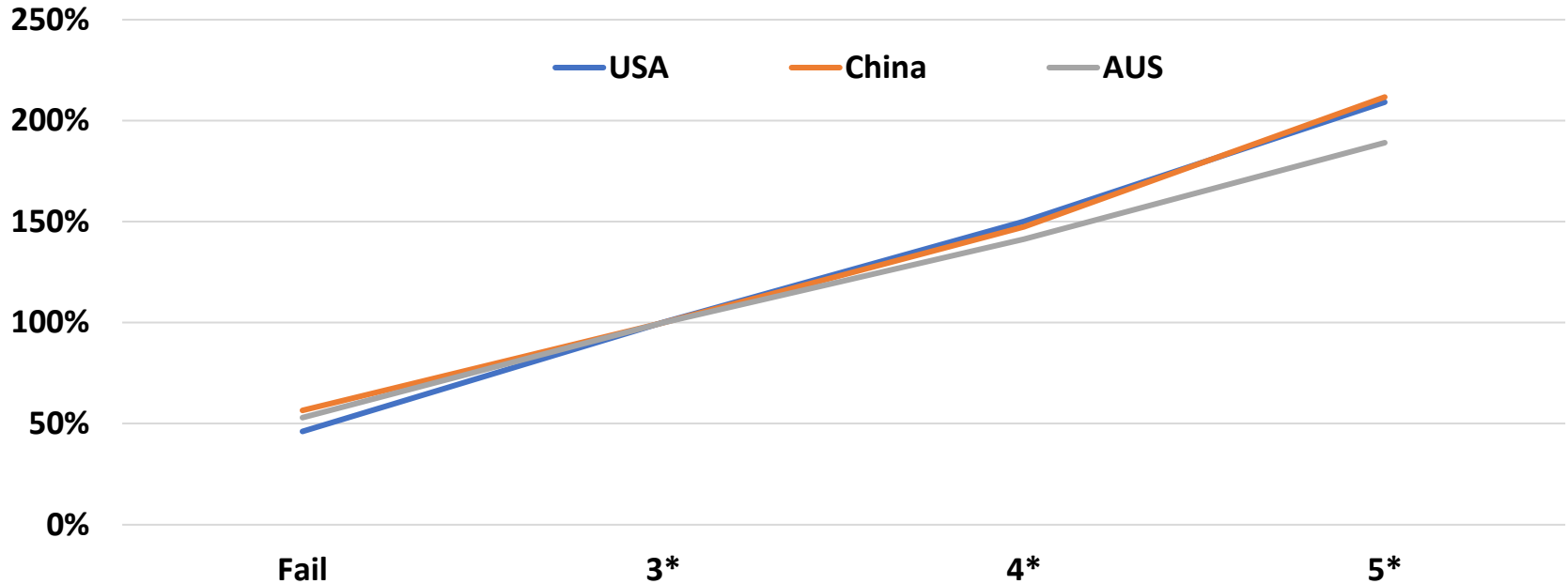
Value of
the cuts



Beef Consumer Willingness to Pay



Consumers are willing to pay more for quality

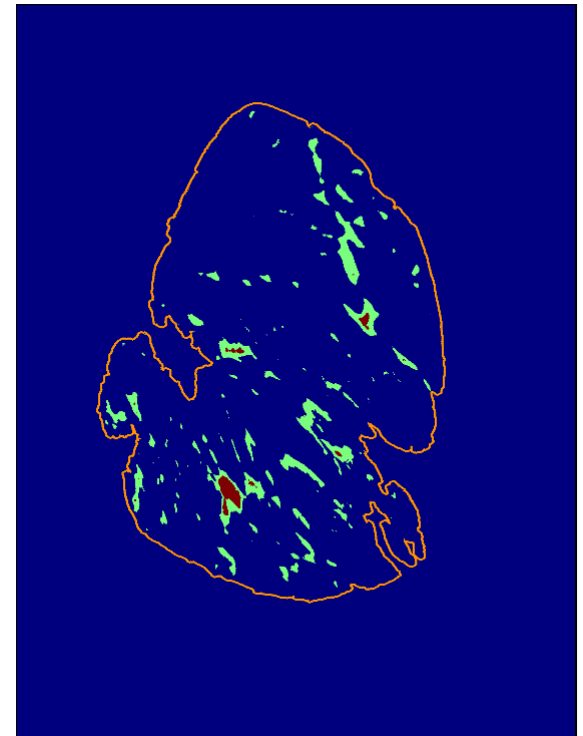
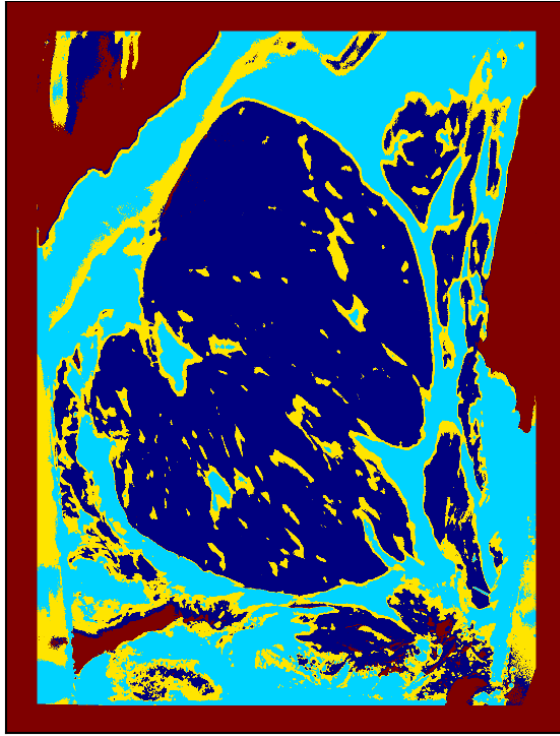


Consumers will pay up to twice as much for guaranteed eating quality.

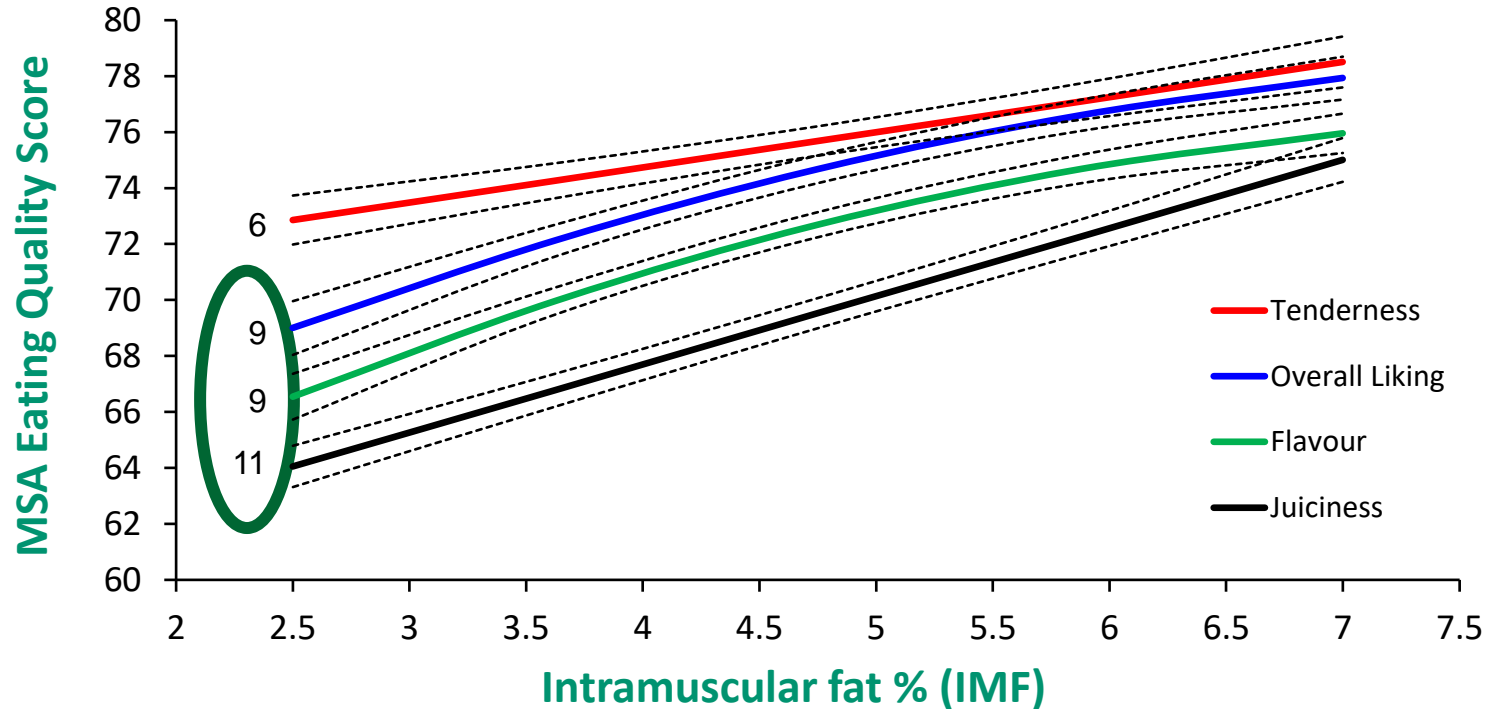
Multiple technologies under development



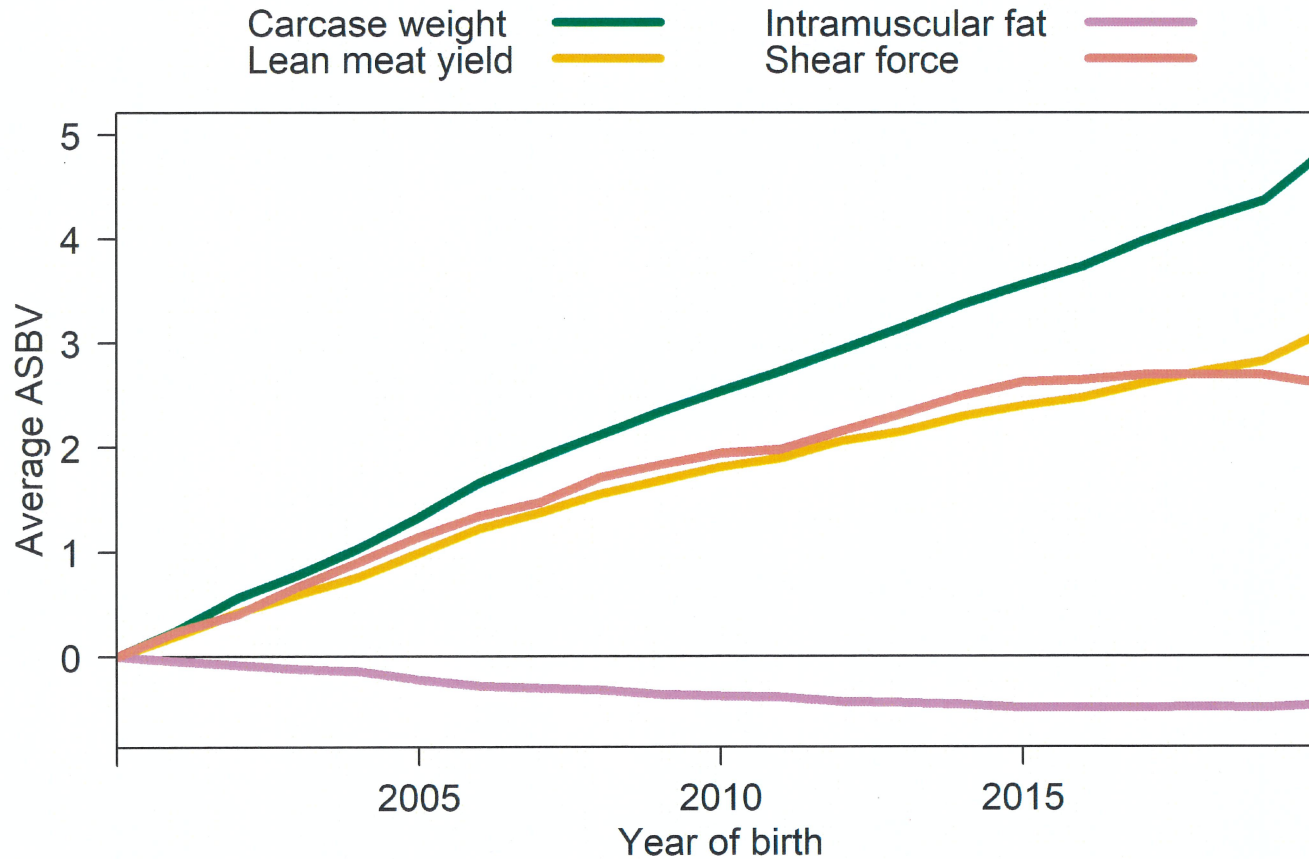
Rib-eye grading cameras



IMF increases lamb eating quality



Productivity improving but eating quality declining



Lamb Cut-based MSA - nine cut by cook combinations

INPUTS

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

OUTPUTS

Grill



knuckle

loin

outside

rump

topside

Roast



knuckle

leg

loin

shoulder



UNGRADE

Carcass inputs will generate nine potential EQ outcomes.

Why is yield important in lamb?



Score 4

Carcase Wt. 23.0 kg

GR 20.0 mm

Saleable Meat Yield 48%

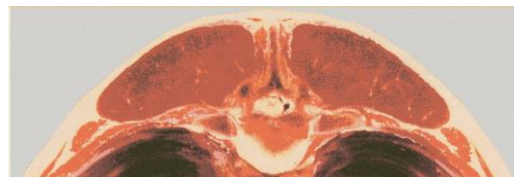


Score 2

Carcase Wt. 23.6 kg

GR 10.0 mm

Saleable Meat Yield 56%





2.7kg extra saleable weight

LAMB B			
Cold Carcase Weight	23.0 kg		
GR	20.0 mm		
Fat Score	4		
Lean Meat Yield	46.2%		
Retail Cut	Kgs	Price	Value
Rib Eye Roll	.961	12.99	\$12.48
Bless Shoulder	1.864	10.99	\$20.49
Foreshank	.371	7.49	\$ 2.78
B-Rib Rack	.788	25.99	\$20.48
Eye of Loin	.525	24.99	\$13.12
Tenderloin	.122	24.99	\$ 3.05
Topside	1.188	14.99	\$17.81
Silverside	.753	12.99	\$ 9.78
Round	.804	15.99	\$ 2.86
Rump	.463	16.99	\$ 7.87
Hindshank	.541	7.49	\$ 4.05
Lean Trim	2.571	7.49	\$19.26
	10.951		\$144.02
Bone	5.152	NCV	nil
Fat	6.869	NCV	nil
	22.97 Kgs		\$144.02

Saleable Meat	
Weight	10.34 kgs

Saleable Meat	
Weight	13.08 kgs

LAMB A			
Cold Carcase Weight	23.6 kg		
GR	10.0 mm		
Fat Score	2		
Lean Meat Yield	50.0%		
Retail Cut	Kgs	Price	Value
Rib Eye Roll	1.123	12.99	\$14.59
Bless Shoulder	2.442	10.99	\$26.84
Foreshank	.502	7.49	\$ 3.76
B-Rib Rack	.896	25.99	\$23.29
Eye of Loin	.694	24.99	\$17.34
Tenderloin	.156	24.99	\$ 3.90
Topside	1.326	14.99	\$19.88
Silverside	.799	12.99	\$10.38
Round	.831	15.99	\$14.89
Rump	.530	16.99	\$ 9.00
Hindshank	.606	7.49	\$ 4.54
Lean Trim	3.290	7.49	\$24.64
	13.295		\$173.04
Bone	5.584	NCV	nil
Fat	4.683	NCV	nil
	23.56 kgs		\$173.04

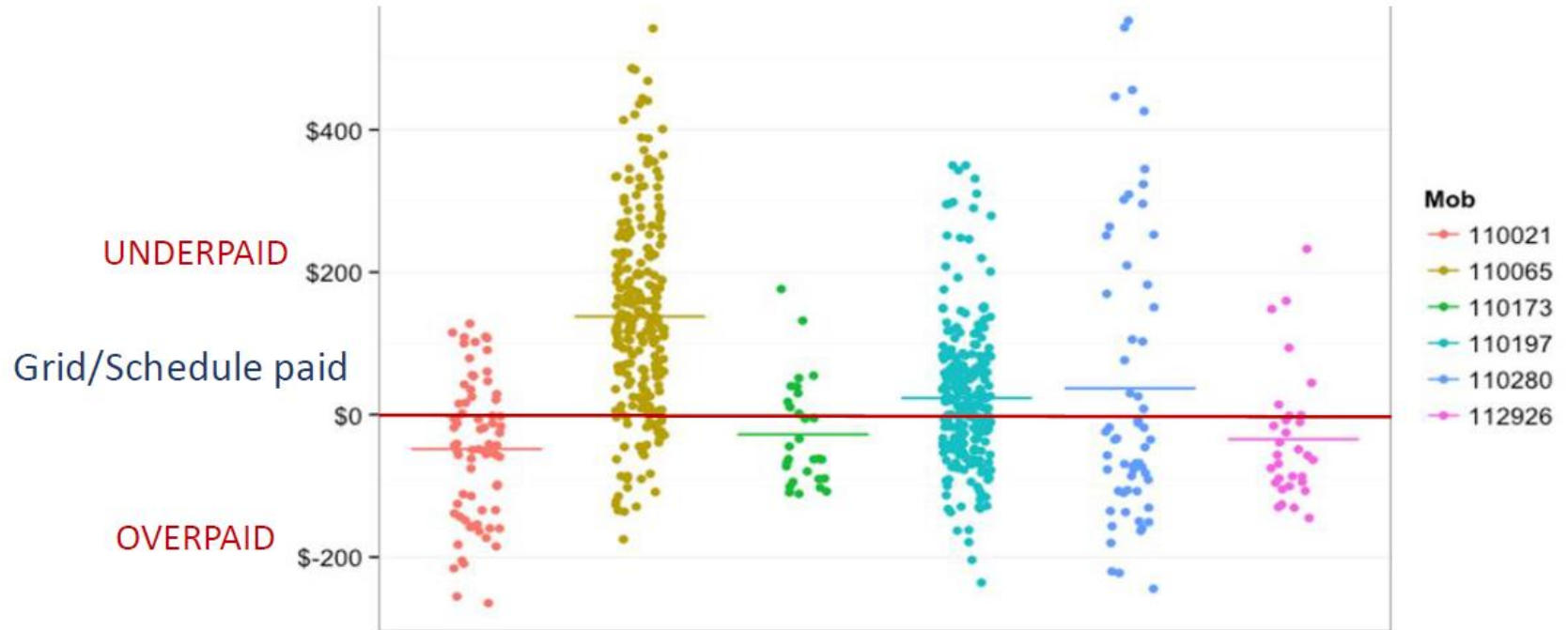
Excess fat costs - on-farm & in processing

- 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 carcasses.

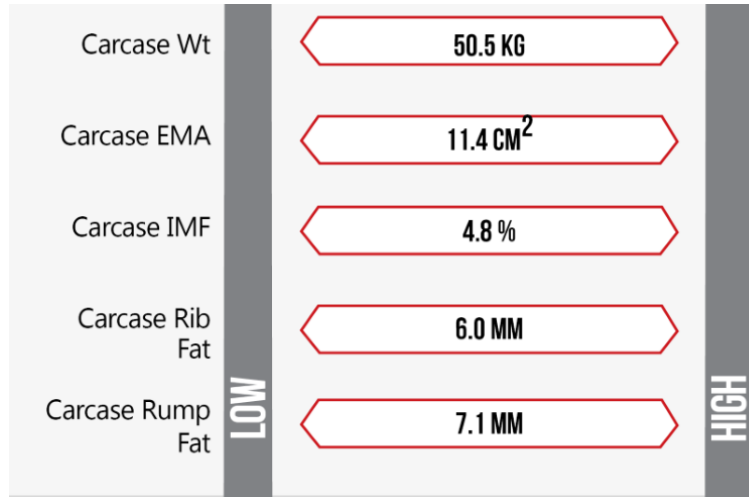
Variation in beef carcass value



Angus Australia Sire Benchmarking Program

Cohort 1 – 3: 121 sires

Top 5 v Bottom 5 Sires within year



Cohort 4: 21 sires

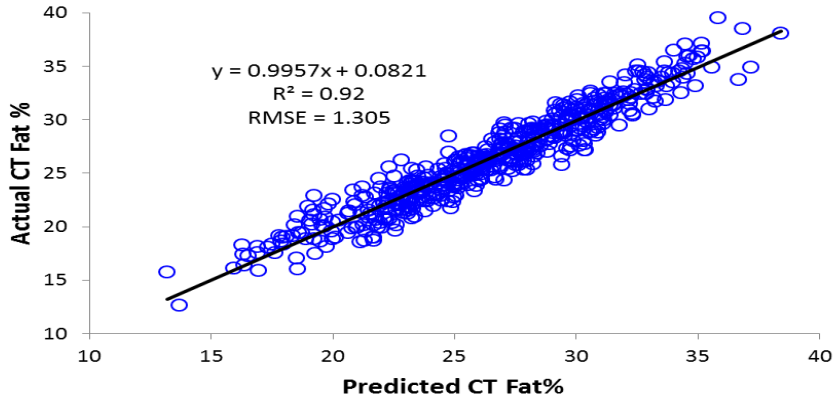
- 283 steers

Sire progeny group carcass value variation

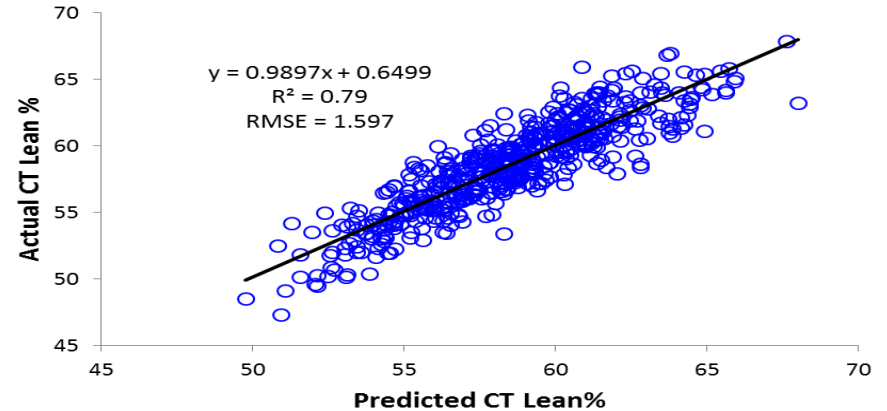
- \$619

DEXA predicting lamb carcase composition

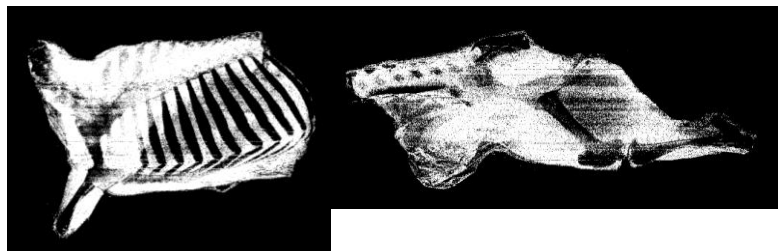
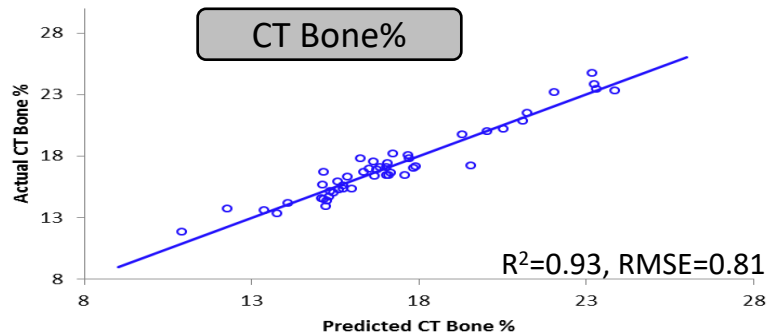
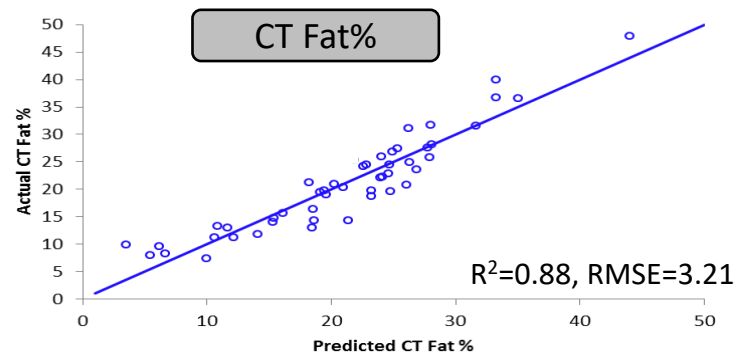
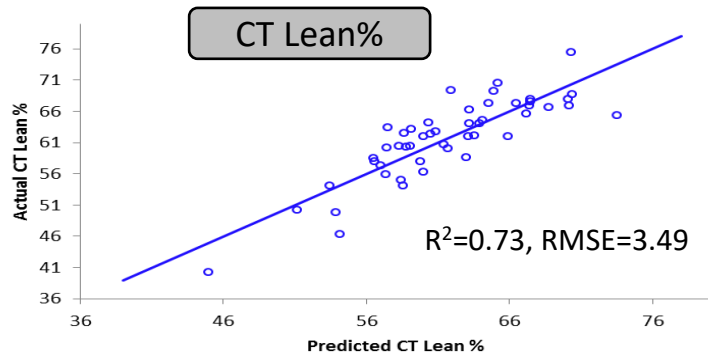
CT Fat%



CT Lean%



DEXA predicting beef carcass composition

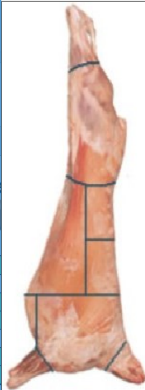


Carcase value calculator

LVC Mk II - Dashboard

FQ | Loin | HQ | Secondary Product

Shoulder | Fore Shank | Breast | Neck



Primals	Cut Wt (kg)	Sale Price (\$/kg)	Gross Margin		Target GM (%)	Target Sale Price (\$/kg)	Boning Cost (\$/unit)	Total Costs (\$)
			\$	%				
Boneless Shldr Denuded, Eye out	2.93	\$14.50	\$3.86	9.1%	0.0%	\$13.18	\$3.50	\$38.69
Shldr Eye Whole	0.37	\$12.98	-\$0.69	-14.3%	0.0%	\$14.84	\$1.00	\$5.50

Cut Selection Trade: Over

Hub Dashboard Save/Upload Specs

Region	Cut Type	Options
Breast	Breast	Breast
Neck	Neck	Neck Angle Cut

Region Cut Type Options

LOIN Shortloin Shortloin Eye TDR Butt off/Side

REC% 81.14%

Rack Cap On or Off Eye of Rack

REC% 88.47%

Disclaimer Hub Carcase Description

Breed: X-Breed

Carcase Description

HSCW 21 kg Range: 13 - 39 kg

GR 8 mm Range: 1 - 44 mm

Fatscore FS1 FS2 FS3 FS4 FS5

Shrink% 2.5 % Range: 0 - 5 %

OCM Input

CT Lean 65 % Range: 47 - 65 %

OTH Trading

Carcase Trade Price \$126.00 /hd \$6.00 /kg HSCW

OTH Base Price \$6.20 /kg of HSCW

Carc Performance Pre Bone Cost Analysis Yields Gross Margins

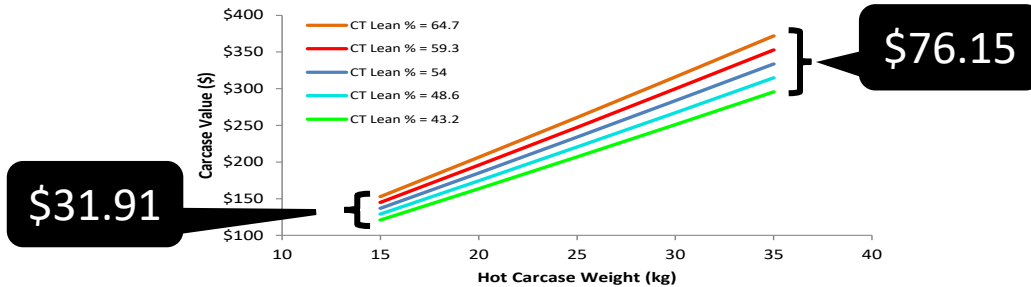
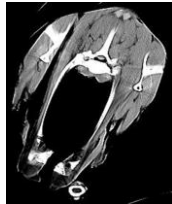
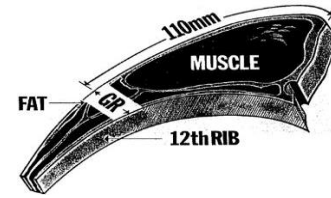
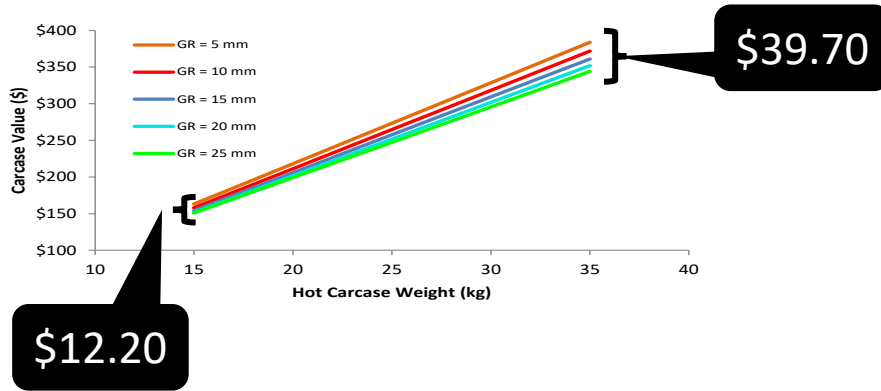
Variable Costs / Revenue	Cost (\$/hd)
Carcase Trade Price	\$126.00 (\$6 / kg of HSCW)
Pre-slaughter Costs	\$1.50
Slaughter Costs	\$13.00
Slaughter Floor Revenue	\$6.00
Boning Room Entry Costs	\$134.50
	\$6.40 /kg of HSCW
	\$10.88 /kg of Saleable Meat

Upload Spec

Reload

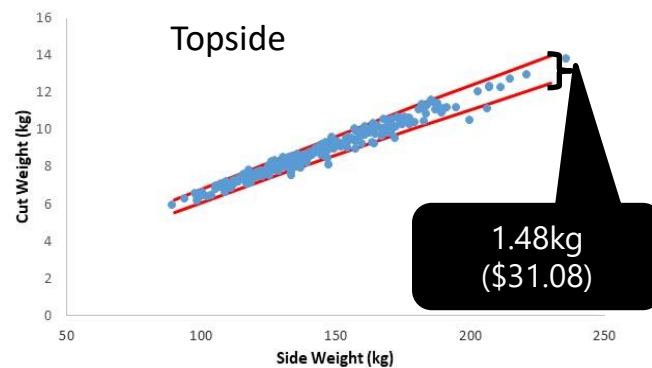
Exit

What does extra precision mean?

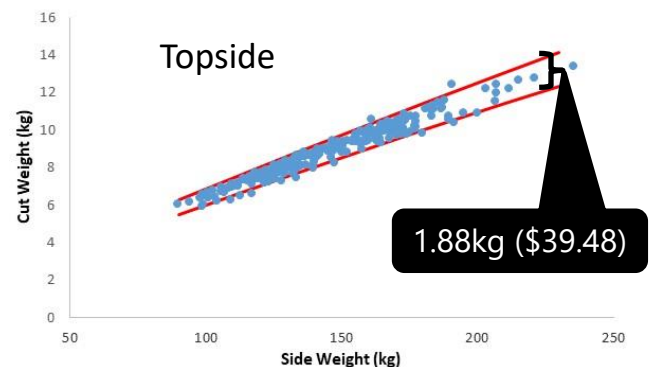


Beef DEXA predicting cut weights

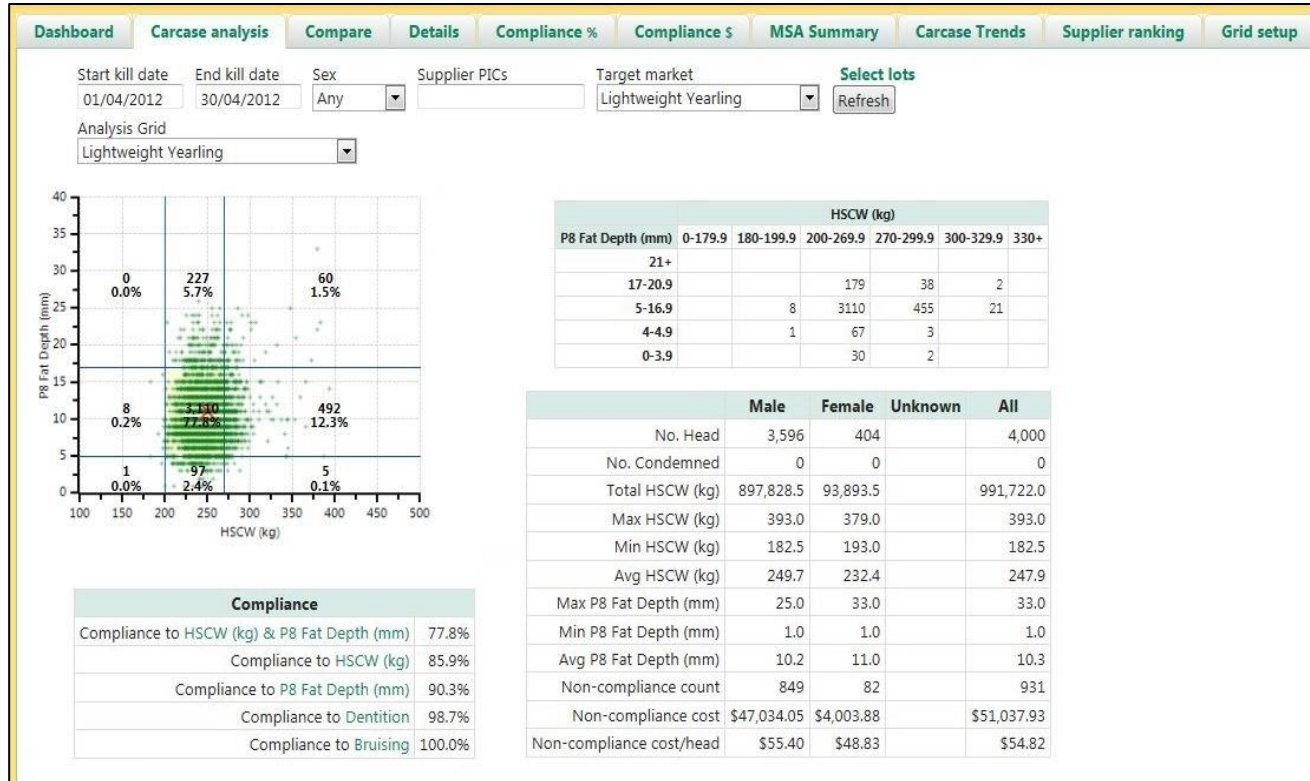
P8 model



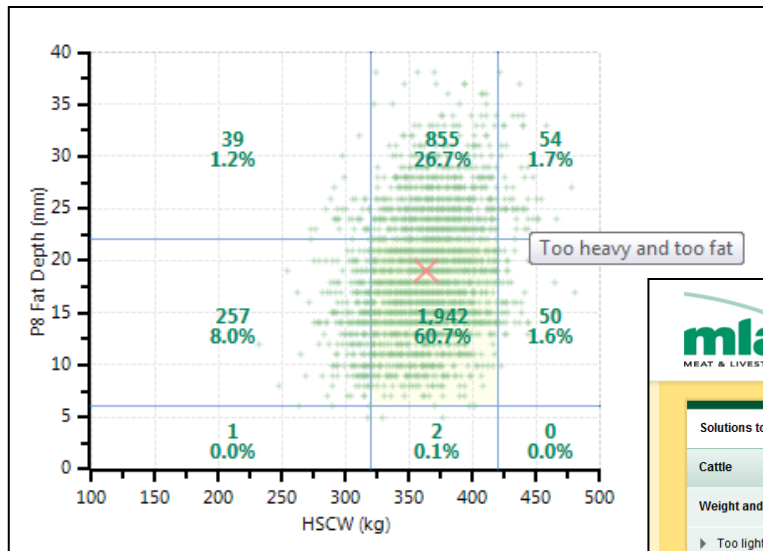
DEXA model




How do I measure up?



How can I improve?






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Solutions to feedback

Cattle

Weight and fat

- ▶ Too light and too fat
- ▶ Too fat
- ▶ **Too heavy and too fat**
- ▶ Too light
- ▶ Correct weight and fat
- ▶ Too heavy

Too heavy and too fat

You are here: [Home](#) / [Cattle](#) / [Weight and fat](#) / Too heavy and too fat

Compared to the target specifications, carcasses in this box on the grid are too heavy and too fat. This means retail and primal cuts will be bigger than the processor wants for this market, and will require considerable trimming of excess fat to make them acceptable to their customers.

The cattle were probably just overdone - they would probably have hit the target if they were sold earlier.

Doing it better next time:

- Improving cattle that are too heavy and too fat for the market
- [Am I aiming at the right target?](#)
- [Help with assessing fatness and carcass weight in live cattle](#)
- [Reducing variation in the sale group](#)
- [Take care before making major changes!](#)

What might future grids look like?

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

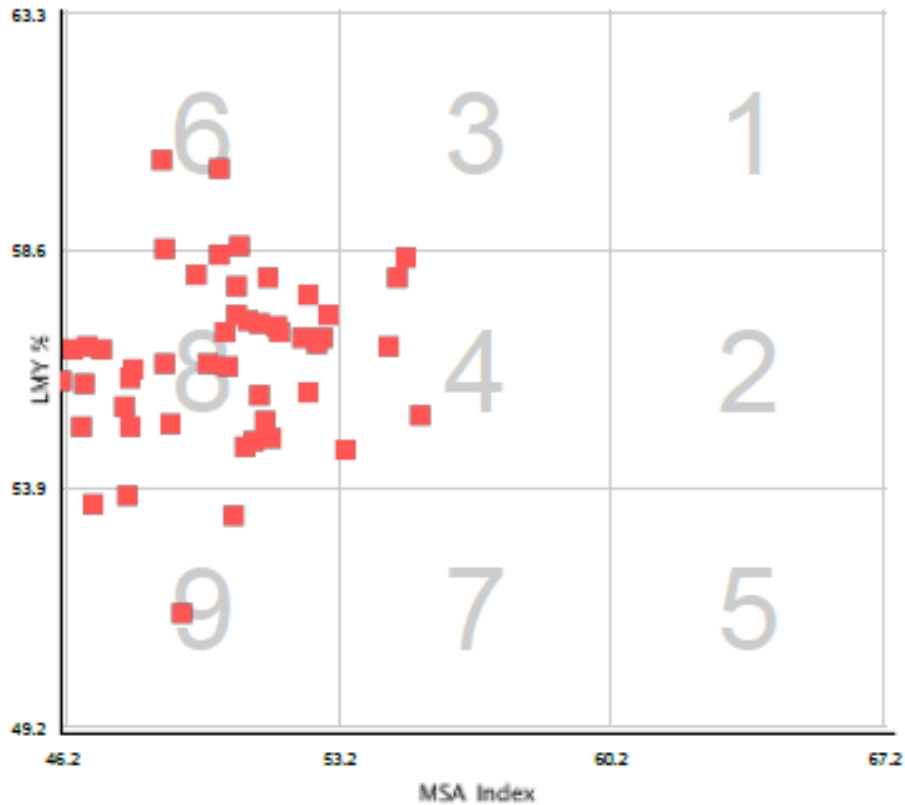
LMY	FS	Weight (kgs)										
		0-10	12-16	16-18	18-19	20-22	22-24	24-26	26-28	28-30	30-32	32+
54-56	5											
56-57	4											
57-58	3											
58-60	2											
60+	1											
		MSA Join Index = 72										



CARCASE KILL RESULTS VBM

Body Sex	RFID	Farm Tag	Dent	Shape	Fat	MC	FC	Oss	AUS Mb	MSA Mb	EMA	BG	Breed	Weight	MSA Index	LMY* %	VBM Group	Total HSCW (kg)	Total Value	MSA Index	LMY* %	VBM Group
377 M			2	C	9	1C	2	160	1	300	56	9		130.0	50.42	56.34	8					
378 M		34	2	C	8	1C	1	130	1	350	60	10		117.0	49.64	58.16	8	260.0	1,326.00	50.42	56.34	8
379 M		16	2	C	8	2	2	150	0	180	64	9		158.0	51.47	54.98	8	234.5	1,172.50	49.64	58.16	8
380 M		175	2	C	11	1C	3	170	1	300	37	10		135.0	51.47	54.98	8	317.0	1,648.40	51.47	54.98	8
381 M		54	2	C	5	3	2	150	1	320	55	10		131.5	49.24	51.54	9	272.5	1,389.75	49.24	51.54	9
382 M			2	C	5	3	3	140	0	140	60	11		142.0	49.24	51.54	9	264.5	1,348.95	49.92	56.40	8
383 M		87	2	C	6	1C	3	130	1	330	60	8		138.5	49.92	56.40	8	284.0	1,462.60	49.89	56.39	8
384 M		99	2	C	4	1C	3	150	0	180	71			139.0	49.92	56.40	8	275.0	1,457.50	52.84	56.89	8
385 M		122	1	C	8	2	2	140	0	210	56	12		128.0	49.89	56.39	8	277.5	1,359.75			
386 M		47	4	C	5	1C	4	150	1	300	75	9		158.5	49.89	56.39	8	257.5	1,300.38	48.79	56.39	8
387 M		46	2	C	6	2	2	180	1	350	60	8		135.5	52.84	56.89	8	316.5	1,614.15	50.66	57.37	8
388 M		18	2	C	5	1C	2	150	0	250	50	8		126.5	52.84	56.89	8	272.0	1,441.60	52.31	56.89	8
389 M		110	0	C	9	3	3	140	1	300	65	9		137.5				256.5	1,346.63	52.45	55.85	8
390 M		156	2	C	3	1C	3	150	0	230	44			132.5	48.79	56.39	8	274.5	1,399.95	51.21	57.18	8
391 M		92	0	C	4	3	2	130	0	270	64			140.0	48.79	56.39	8	285.0	1,298.50			
392 M		91	2	C	5	1C	2	170	1	320	42	12		138.0	50.66	57.37	8	279.0	1,367.10			
393 M		97	2	C	8	1C	3	130	1	330	50	6		130.0	50.66	57.37	8	275.5	1,405.05	47.88	53.84	9
394 M		77	2	C	6	1C	3	150	2	430	72	6		137.0	52.31	56.89	8	259.5	1,362.38	55.31	55.40	4
395 M		56	2	C	6	1C	2	150	0	200	74	9		160.5	52.31	56.89	8	276.5	1,382.50	54.69	58.10	4
396 M			2	C	6	2	1	140	0	240	44	9		135.0	52.45	55.85	8	319.5	1,661.40	51.66	57.12	8
397 M			2	C	8	2	2	160	1	320	50	9		126.0	52.45	55.85	8	271.0	1,382.10	51.38	55.30	8
398 M		6	4	C	8	3	3	190	1	350	76	11		122.5	51.21	57.18	8	251.5	1,270.08	51.20	55.77	8
399 M		121	2	C	5	1C	3	150	0	260	68	8		151.5	51.21	57.18	8	244.5	1,234.73	48.76	60.37	6
400 M		123	2	C	4	4	2	140	0	180	66			126.0				303.5	1,638.90	52.42	57.77	8
401 M		172	2	C	11	1C	3	200	0	250	65	12		139.0				252.5	1,212.00			
402 M		161	4	C	5	2	3	140	1	300	60	10		128.5	47.88	53.84	9	277.0	1,412.70	45.74	56.10	8
403 M		94	2	C	10	3	4	190	0	230	64	12		131.0	47.88	53.84	9	258.0	1,302.91	50.19	58.53	8
404 M		151	2	C	8	1C	3	150	0	250	52	12		125.0	55.31	55.40	4	260.5	1,302.50	46.89	56.72	8
															55.31	55.40	4	251.5	1,270.08	46.78	56.01	8
															54.69	58.10	4					

LMY% vs. MSA Index for Grass Fed Steer



Take home messages

Be prepared for more detailed feedback

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