



2023 LARDNER PARK STEER TRIAL RESULTS



LARDNER PARK EVENTS 2023 STEER TRIAL

This year marked the 48th year of the Lardner Park steer trial - the only grass-based steer trial in Australia.

Cattle are managed under independently controlled grazing conditions during the period of the trial, and this provides valuable information on the growth and carcass quality of the steers. The trial enables those who interact with it, to gain an improved understanding of live steer assessment, market requirements and the impact of feed quality has on the growth and fattening ability of the stock.

To minimise the risk of steers finishing out of specifications (either below or above the target carcass weight), there is a recommended entry weight of 280 – 385 kg liveweight.

The 2023 Competition

Cattle were inducted onto the property on the 27th of June, and after a settling in period, the steer trial commenced on the 4th July. Cattle were weighed five times throughout the trial period and the weighing days allowed interested parties to note the progress of the stock.

Cattle had their final weighing Tuesday 28th November. They were held at pasture on the property for an additional week to allow them to settle post weighing and viewing, reducing any stress impacts on the carcass. They were turned off and sent to the abattoir on Monday 4th December.

As the steers were not weighed again on the day they were sent to the abattoir, their growth rate at the final weighing the week prior was used to estimate a final liveweight. This estimated final liveweight was used to determine the dressing percentage of the steers.

Cattle had to meet the following specifications for the **standard domestic trade** when they were turned off:

Hot standard carcass weight	220 – 330kg
Fat range (P8)	8 -14mm

Any carcass falling outside the weight range of 220 – 330kg carcass weight had penalty points applied of 2 points per kg over 330kg carcass weight or 2 points per kg under 220kg carcass weight.

However, to be in contention for the ‘Highest Weight Gain Pair’, both animals in the pair had to fall in the carcass weight specifications of 220 – 330 kg carcass weight. If one or both animals in the pair failed to meet the carcass weight specifications, the pair were not eligible for the award.

The herd was run in one mob on predominately ryegrass based pastures with supplements fed if deemed as necessary depending on pasture growth. The tables and graphs following in the document summarise the liveweight gain and various aspects of carcass performance.

MSA grading

Carcasses were graded at JBS Australia Pty Ltd’s Brooklyn processing plant on behalf of Coles. The national Meat Standards Australia (MSA) grading system was used to assess carcasses in the competition. The MSA measurements were then converted to carcass points using an Australian Beef Carcass Appraisal Method (ABCAM).

Judging System details.

The MSA system utilises the judging criteria: P8 fat, fat colour, meat colour, rib fat, eye muscle area, ossification, marbling and muscle pH. These MSA measures were used to estimate eating quality. Muscle pH (acidity or alkalinity) is closely related to tenderness, shelf life and meat colour.

Carcasses needed to be between pH 5.4 to 5.7 to grade MSA. For MSA, cattle needed to be below a notional 30 months of age (maturity) determined by an ‘ossification’ score below 200. The degree of ossification is determined by change of cartilage to bone in the sacral (rump), lumbar (loin) and thoracic (rib) vertebrae.

For MSA there is no minimum marbling requirement but is described as some markets require marbling. Marbling is related to ‘juiciness’ and can contribute to meat flavour.

Reasons cattle may have received lower eating quality points under the MSA system are that rib fat is less than 3mm, or the pH is above 5.7, or the meat colour is 1a or greater than 3.




The MSA Index is used to determine the Highest Eating Quality Award – all steers who meet MSA grading criteria (rib fat 3mm or greater, pH below 5.7 and meat colour between 1b – 3) receive a MSA Index score. Steers who fail MSA grading have been given an Opportunity Index score - what their MSA Index would have been if non-compliant carcasses had met the MSA minimum requirements.


Lardner Park Events 2023 Steer Trial – Summary of Awards


STANDARD DOMESTIC TRADE


Standard Domestic Trade 220-330kg carcass weight

Fat range (P8) 8-14 mm

Combined Weight Gain & Carcass Awards		
Sponsored by:		
<i>Breeder</i>	<i>Breed</i>	<i>Points</i>
1 st Prize 		
Eagle Rock Angus Malcolm Reedy - Garfield	Angus	223.23
2 nd Prize 		
Riverline Alistair Black - Myrtlebank	Hereford	217.23
3 rd Prize 		
Jones Farm Chase Jones - Moorooduc	SimAngus	216.66

Highest Weight Gain Pair		
Sponsored by: 		
<i>Breeder</i>	<i>Breed</i>	<i>Pair Av Daily Gain</i>
Eagle Rock Angus Malcolm Reedy - Garfield	Angus	1.56 kg/day

Highest Carcass Score As A Pair		
Sponsored by: 		
<i>Breeder</i>	<i>Breed</i>	<i>Pair Av Carcass Score</i>
Tarcombe Herefords Tim Hayes - Caveat	Hereford	88.72

Highest Eating Quality (MSA Index) As A Pair		
Sponsored by: 		
<i>Breeder</i>	<i>Breed</i>	<i>Pair Av MSA Index</i>
Wonyip Park John Archibald - Murrindindi	Angus	63.44

Cattle Performance Analysis – Liveweight Gain Performance

Average Liveweight Gain Performance

Standard Domestic Class												
	Average LW kg						Average LW Gain kg per day					
	2023	2022	2021	2019	2018	2017	2023	2022	2021	2019	2018	2017
Initial	323	321	308	329	322	306						
Turnoff	505	502	486	521	496	486						
Weight Gain	183	172	171	192	174	180	1.24	1.18	1.17	1.28	1.40	1.22

2023 saw the averaged weight gain performance come in at 1.24 kgLW/day

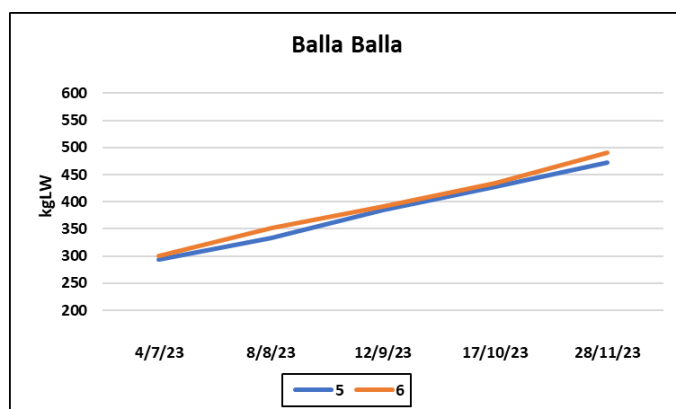
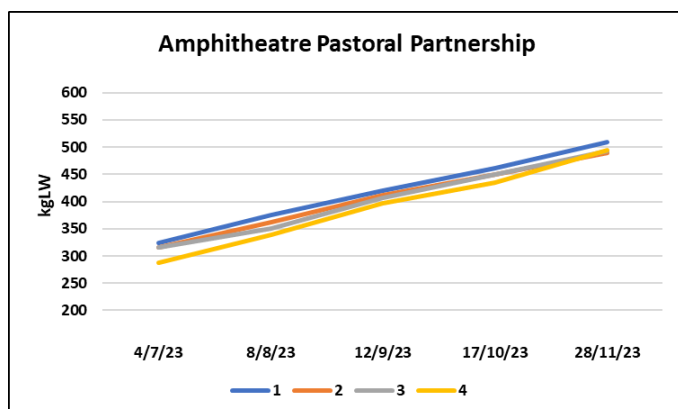
The top averaged weight gain for a pair of steers was 1.56 kgLW/day, a pair of Angus steers from Eagle Rock Angus at Garfield.

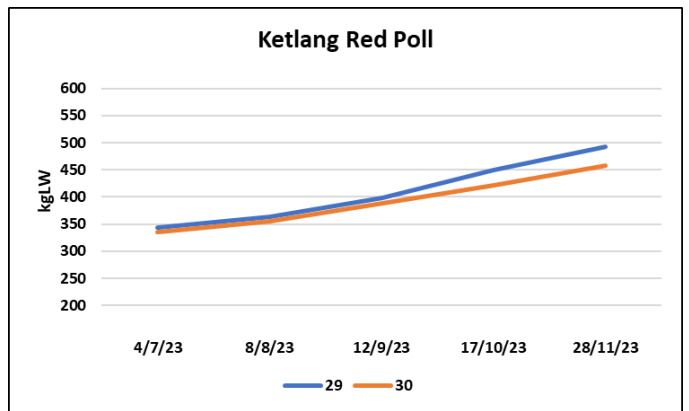
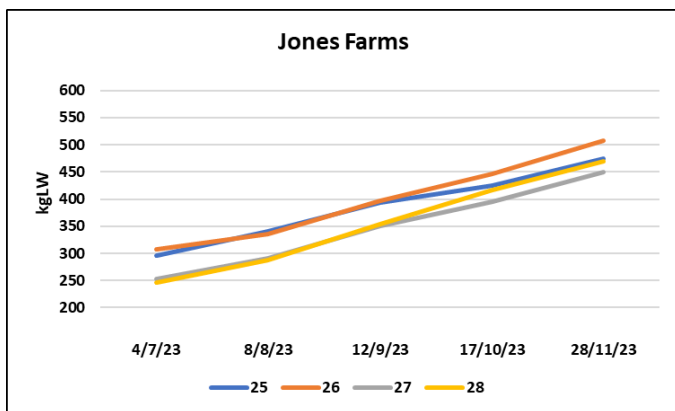
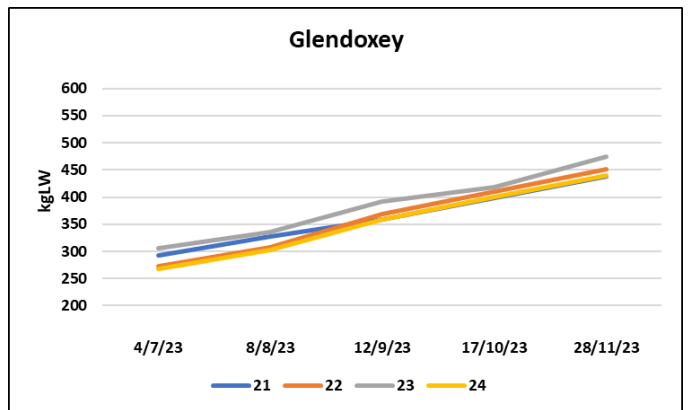
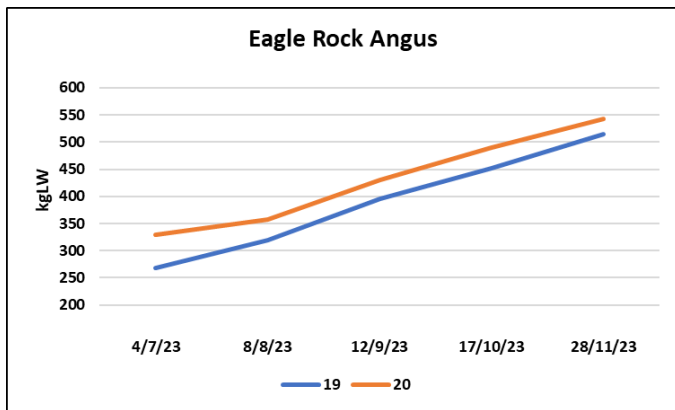
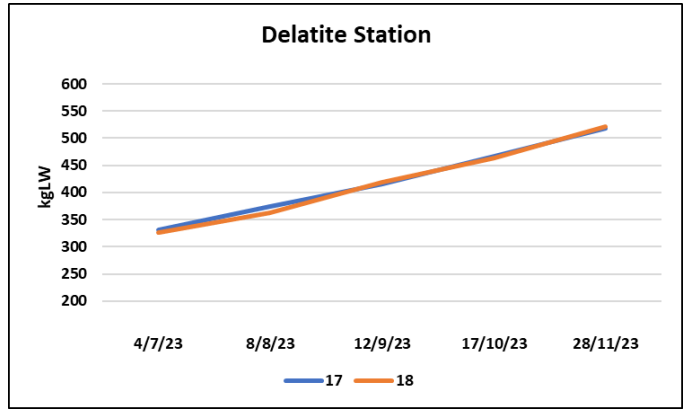
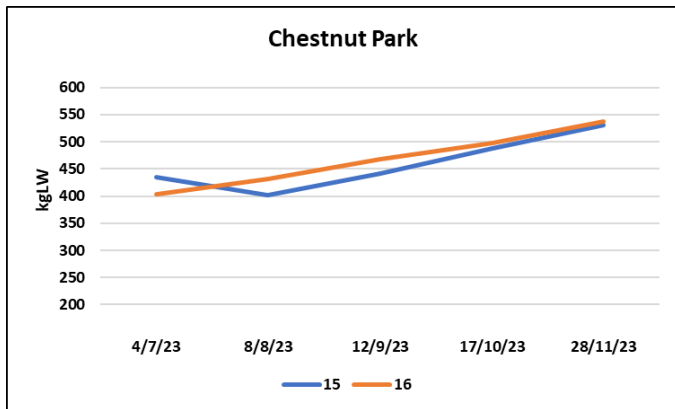
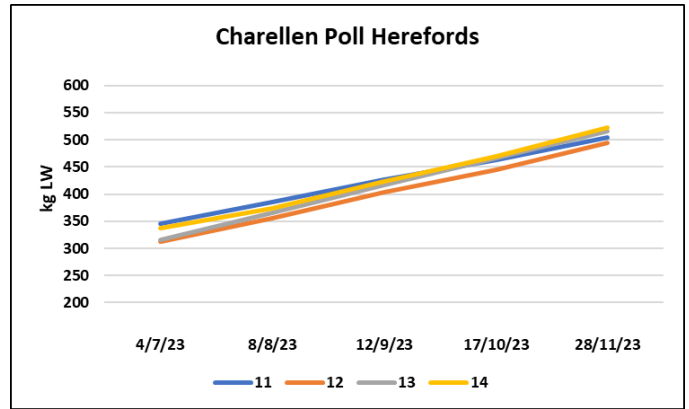
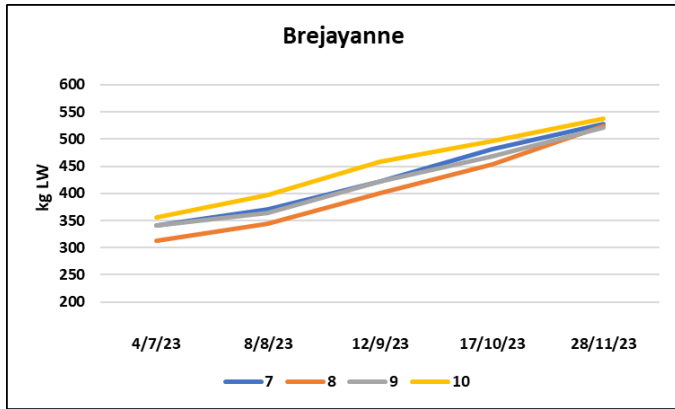
Individual steer weight gains averaged over the trial period ranged from 0.65 kgLW/day up to 1.67 kgLW/day.

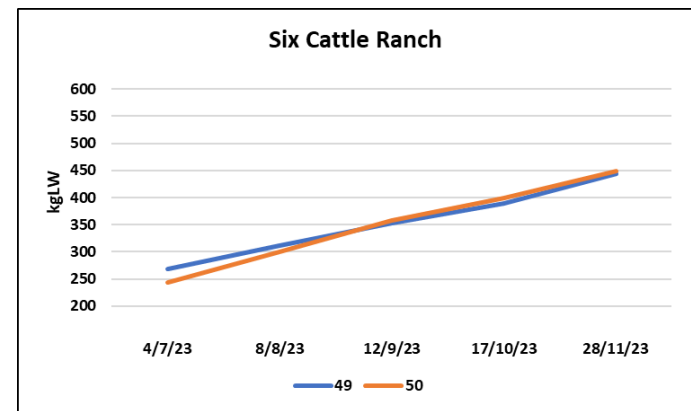
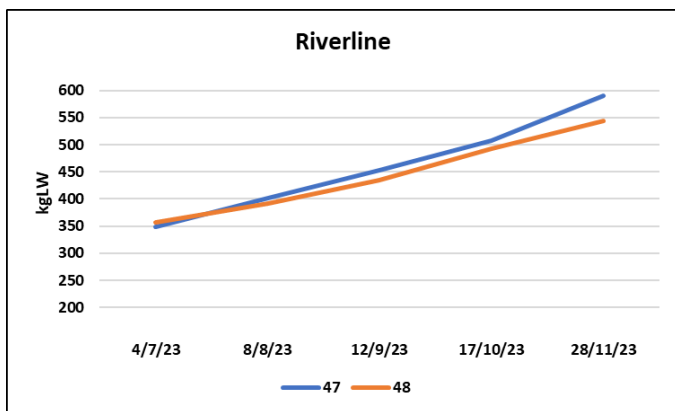
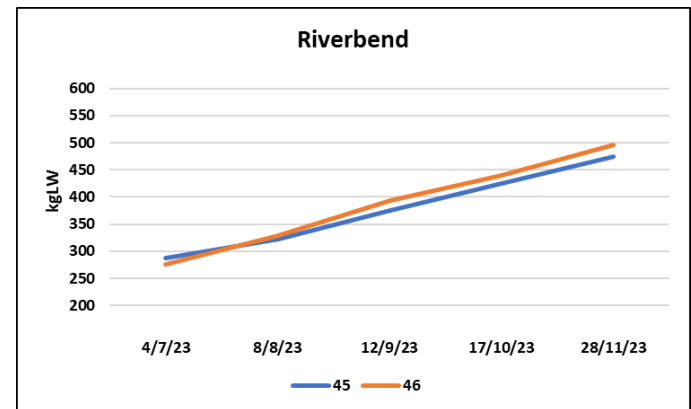
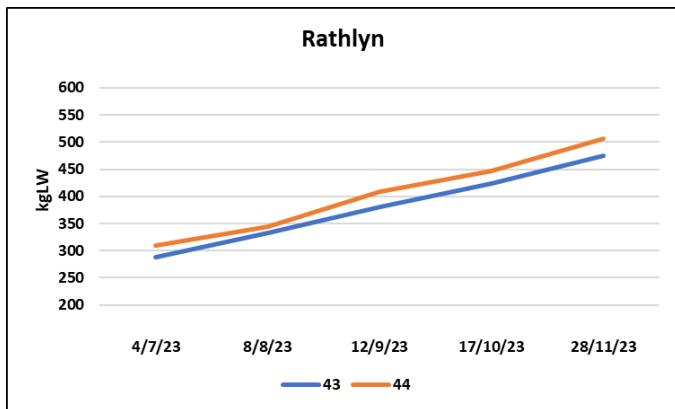
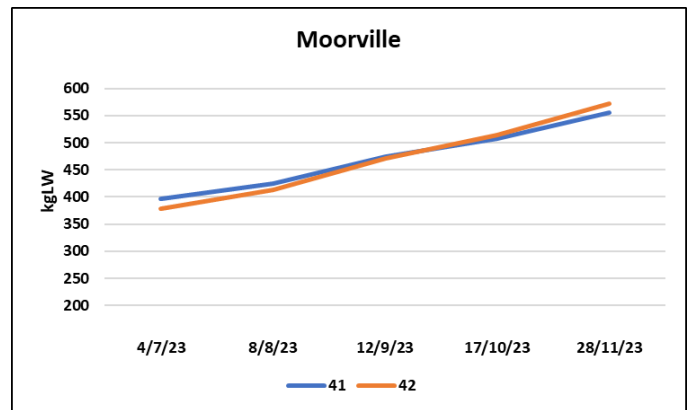
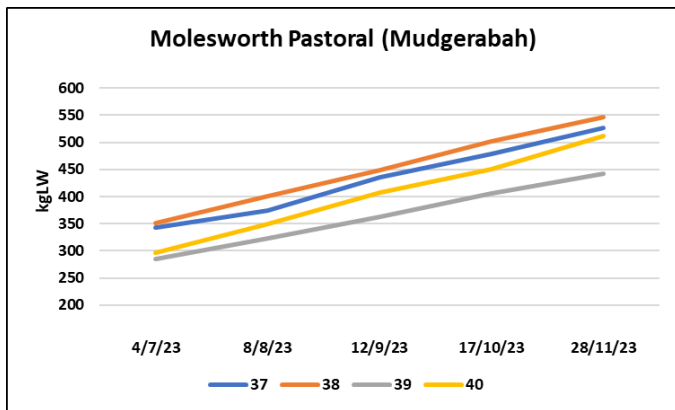
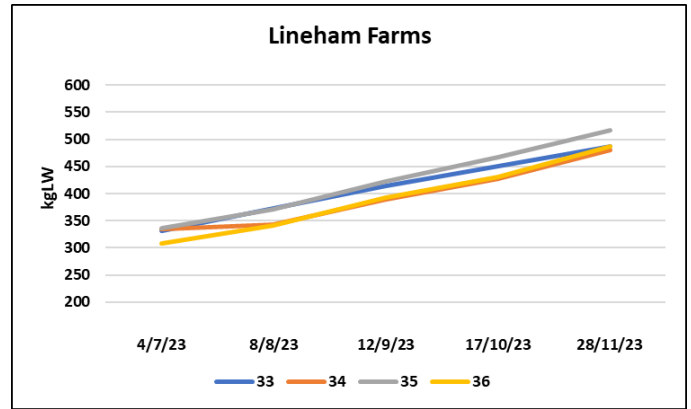
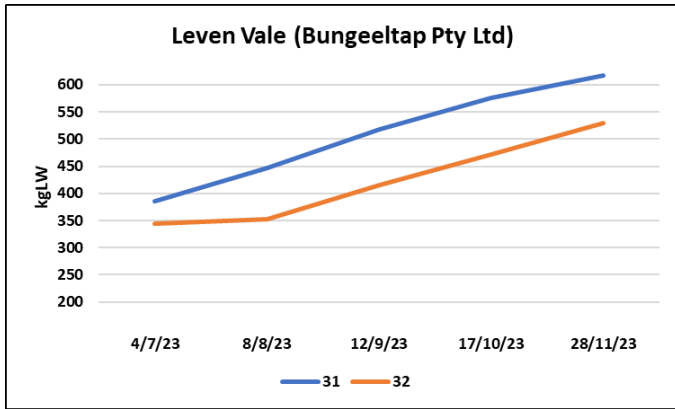
The weight gain of 1.67 kgLW/day was from an Angus steer, with the other animal of the pair growing at 1.44 kgLW/day, resulting in a pair average daily gain of 1.56 kgLW/day.

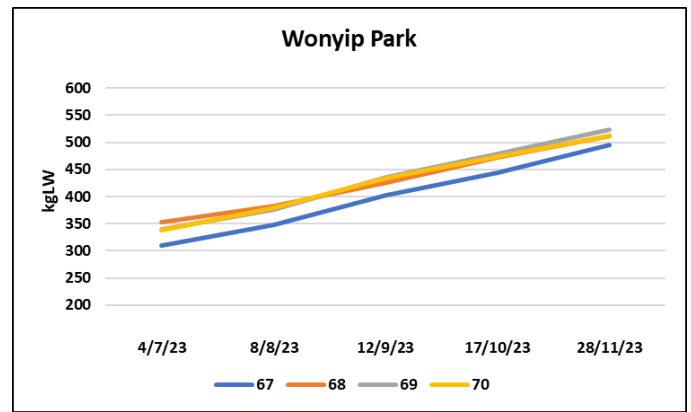
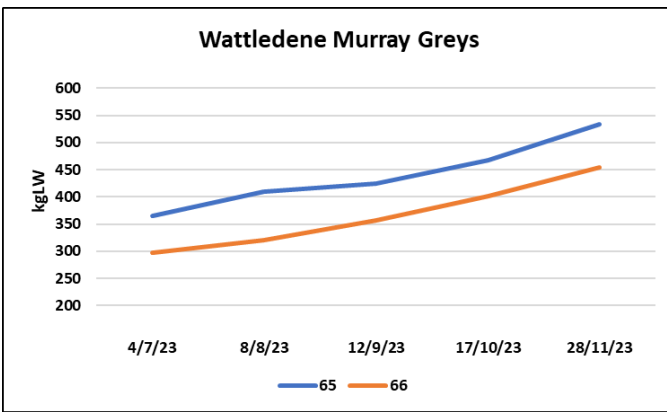
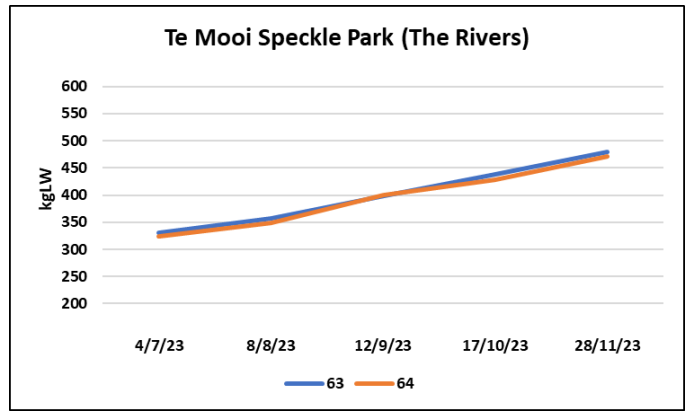
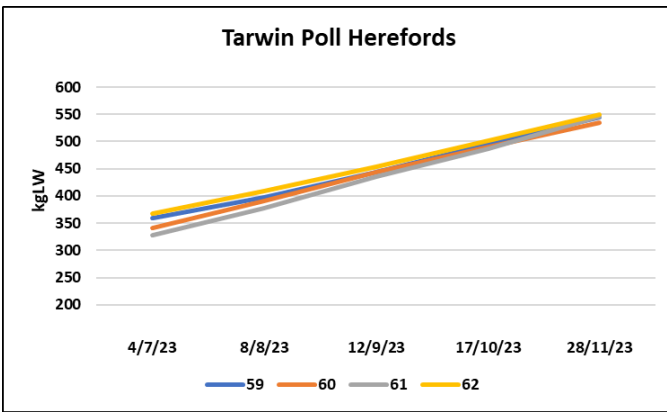
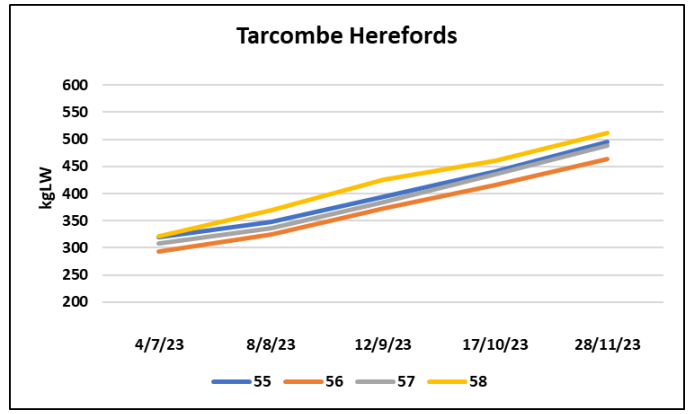
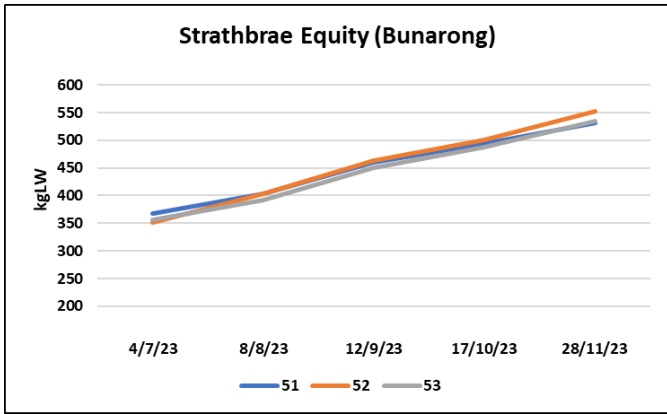
The averaged weight gain of 0.65 kgLW/day was from a Speckle Park x Angus, with the other animal of the pair growing at 0.92 kgLW/day.

The following graphs show the steer pairs liveweight gain performance across the weighing dates. *The number next to coloured line is the Lardner Park ear tag number of the steer.*









Cattle Performance Analysis – Carcase Performance

68 steers competed in the steer trial in 2023 (70 steers were registered, but one steer had to be sent home early in the competition. The second steer remained running with the mob but was ineligible due to it being a paired trial).

One steer (or 1.5%) was outside specifications for carcase weight (and was awarded penalty points) – it was just above the 330 kg carcase weight upper limit, weighing in at 335 kg.

One steer received no eating quality points due to missing specifications required for MSA grading, in this case pH and associated meat colour. The steer had pH of 6.26 resulting in a meat colour of 5. FYI – in the 2022 steer trial, of the 68 steers competing, 4 (or 5.7%) lost points for dark cutting.

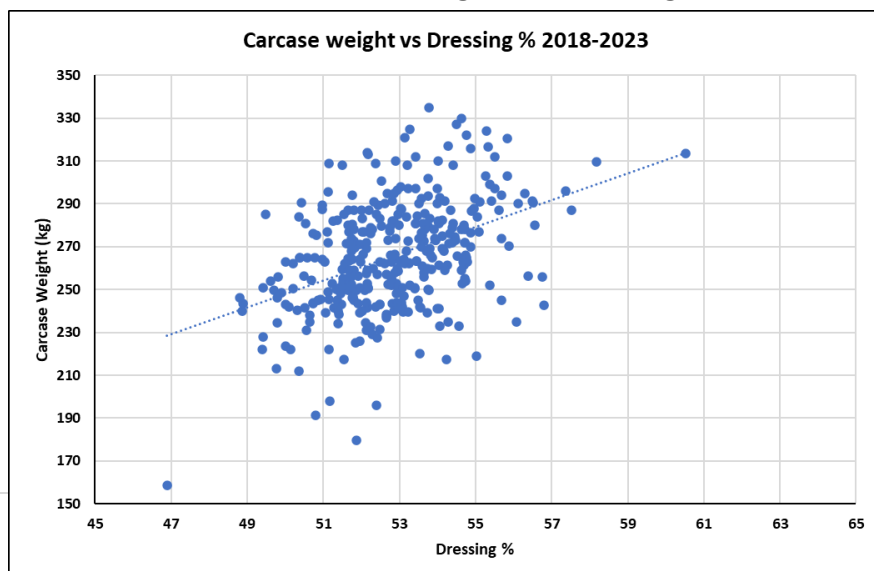
Steer Trial Carcase Performance across the years

Carcase details	2023	2022	2021	2019	2018	2017
Av Carcase Weight (kg)	269.8	269.2	257.6	275.9	256.5	252.8
Av Dressing %	52.7	53.6	53	53	51.7	52
Av P8 Fat Depth (mm)	7.7	7.3	6.4	7.3	6.4	7.4
Av rib fat (mm)	6	4.9	5.3	5.1	4.79	5.5
Av Eye Muscle Area (sq cm)	66.0	70.6	67.4	67.9	69.1	65.7
Av pH	5.54	5.59	5.52	5.51	5.5	5.6
Av Ossification Score	123	120.1	125	121.5	123.1	125
Av MSA Index	61.72	61.46	60.45	61.72	61.78	61.40

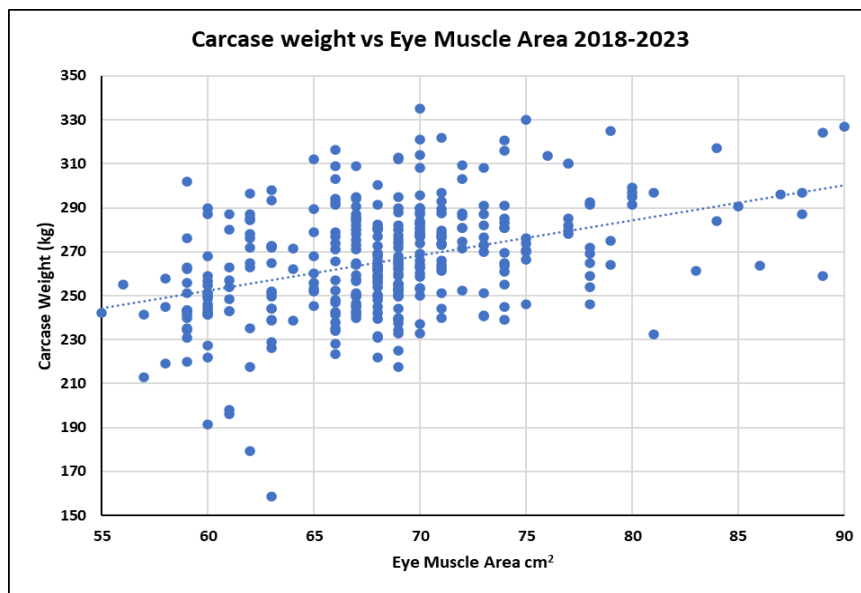
In 2023 the average Dressing % ranged from 49.4% up to 56.1%. The steer that dressed out at 49.4% was a Speckle Park x Angus Lowline (the other steer of the pair dressed out at 53%). The steer that dressed out at 56.1% was a Speckle Park x Angus (the other steer of the pair dressed out at 54.5%).

The average Eye Muscle Area ranged from 46 sq cm to 80 sq cm. The largest EMA came from a Speckle Park x Angus (the other steer of the pair had an EMA of 72 sq cm). The smallest EMA came from a Devon (the other steer of the pair had an EMA of 59 sq cm)

Is there are relationship between carcase weight and dressing %?



Is there a relationship between carcass weight and eye muscle area?



The growth path of cattle – energy goes to laying down their skeleton first, then to muscle development and lastly to fat cover. If we breed large framed cattle, with large volumes of muscle, it may be difficult to get cattle to lay down adequate fat cover. Be aware of what abattoirs are looking for in terms of liveweight/carcass weight size and fat cover required for those animals. **BIGGER IS NOT ALWAYS BETTER.**

Fat distribution plays an important role at the abattoir and can impact on eating quality and on the marketability of the animal

Fat distribution is the coverage and distribution of subcutaneous (external) fat on a carcass. An even coverage of subcutaneous fat leads to even chilling throughout the underlying muscles. The greater the fat depth on a carcass, the slower and more uniform the muscle chilling rate will be. The coverage and distribution of subcutaneous fat over primals helps prevent dehydration and provides protection for the muscles from microbial contamination. Uneven fat coverage causes the muscles with inadequate coverage to chill at a faster rate, which can create cold shortening conditions near the surface and heat shortening in the deep core, affecting the eating quality of the meat. (source: MLA Tips and Tools – fat distribution and eating quality)

Points were awarded as follows for P8 fat:

P8 fat mm	3	4	5	6	7	8-14	15	16	17	18	19	20
Points	3	5	7	8	9	10	9	8	7	6	5	4

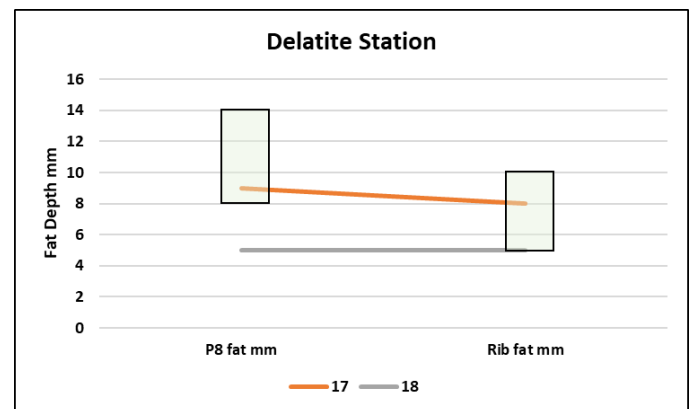
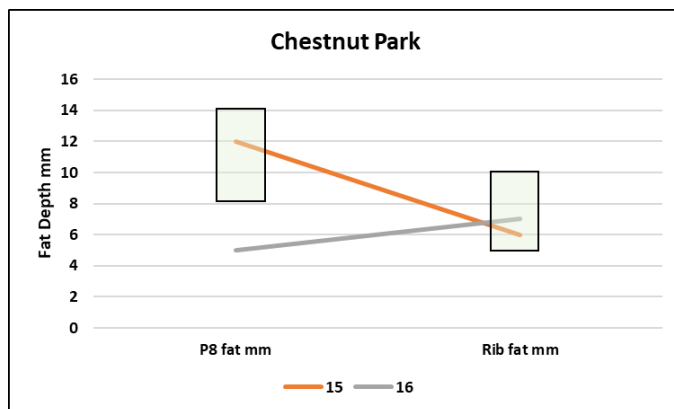
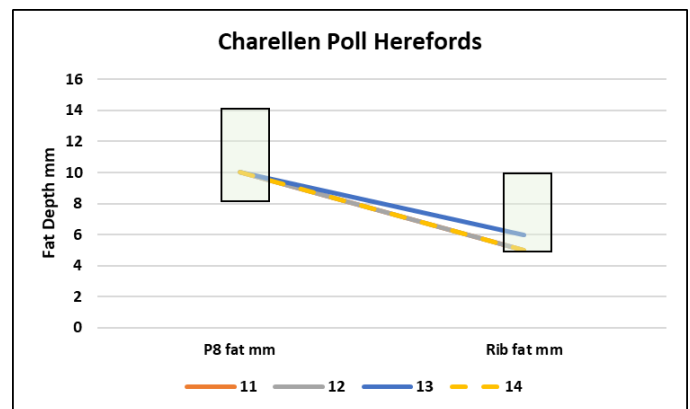
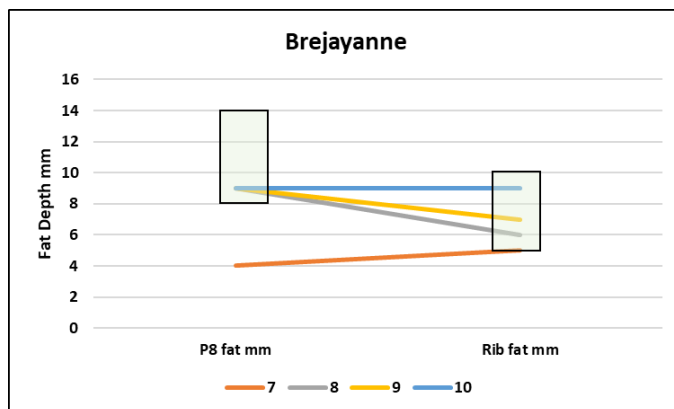
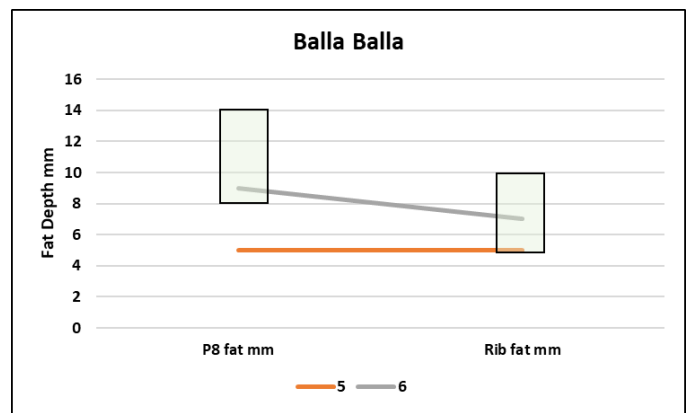
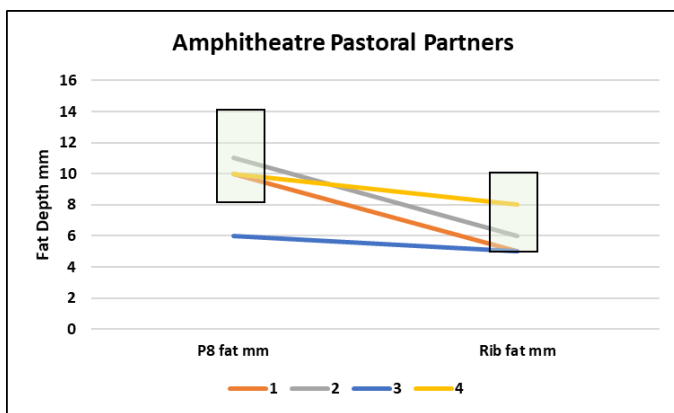
Points were awarded as follows for rib fat:

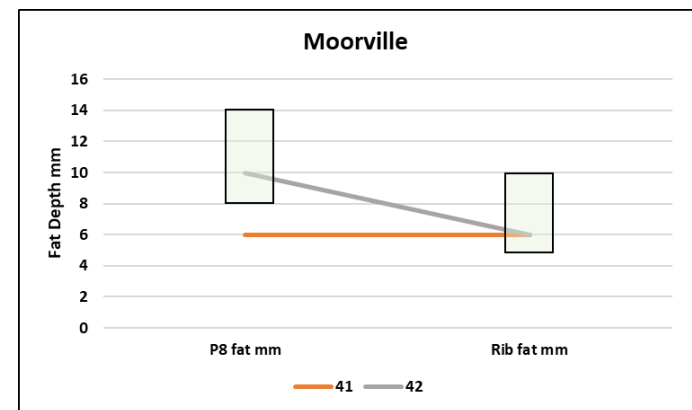
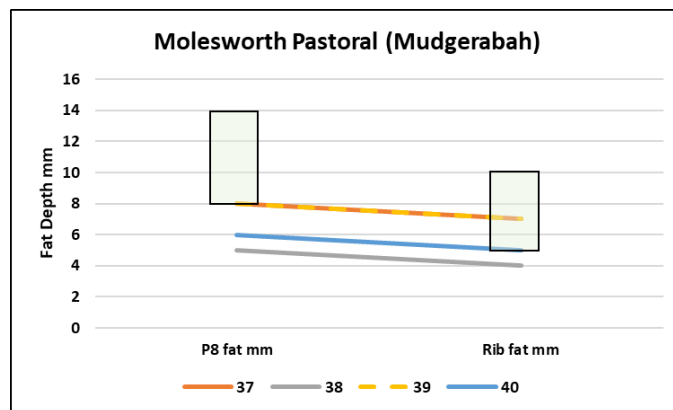
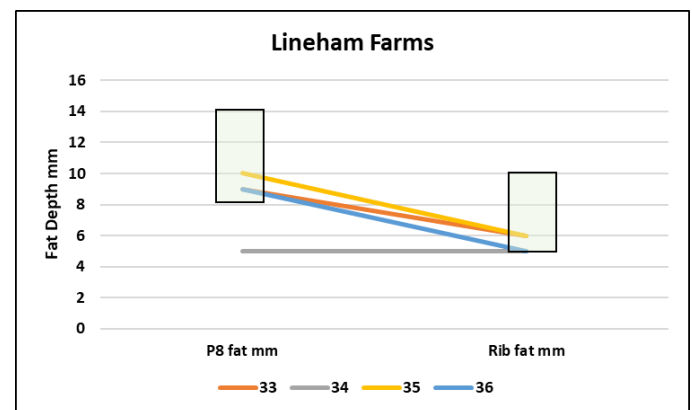
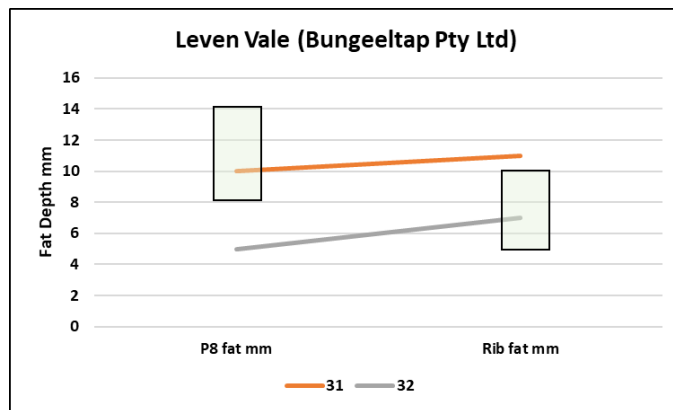
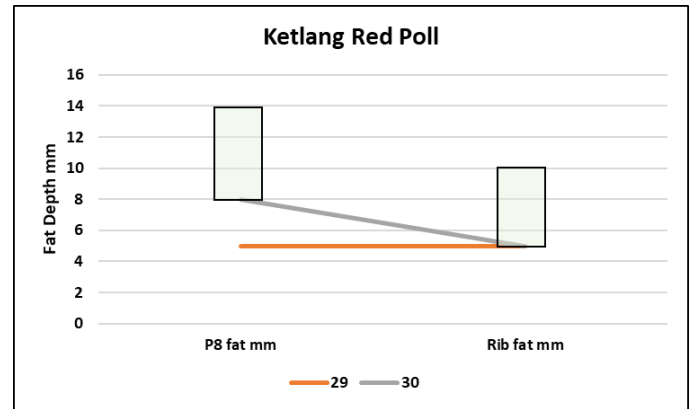
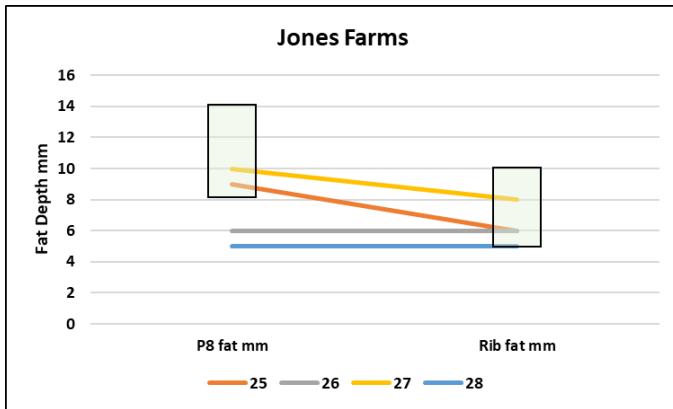
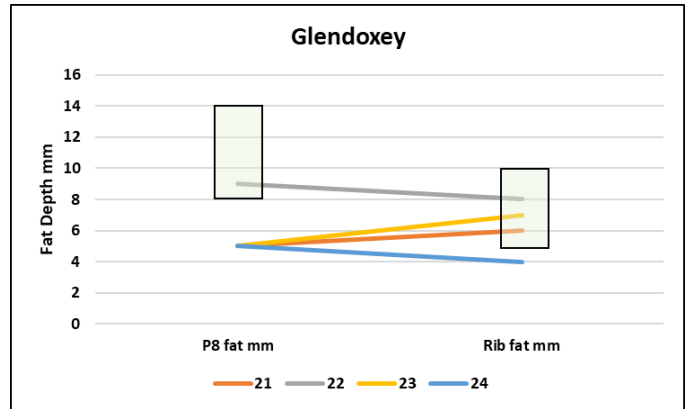
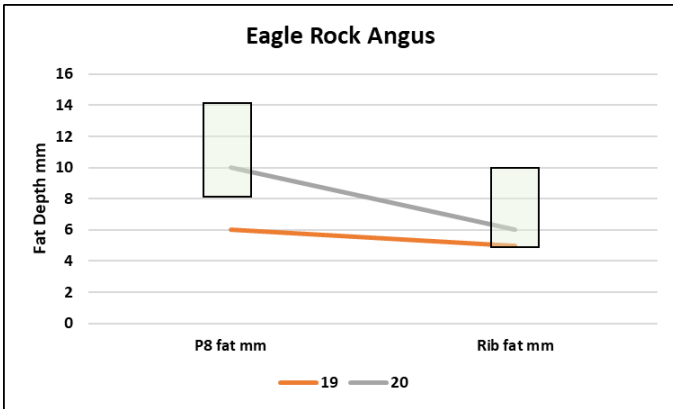
Rib fat mm	2	3	4	5-10	11-12	13	14	15	16
Points	0	8	12	15	11	10	9	8	0

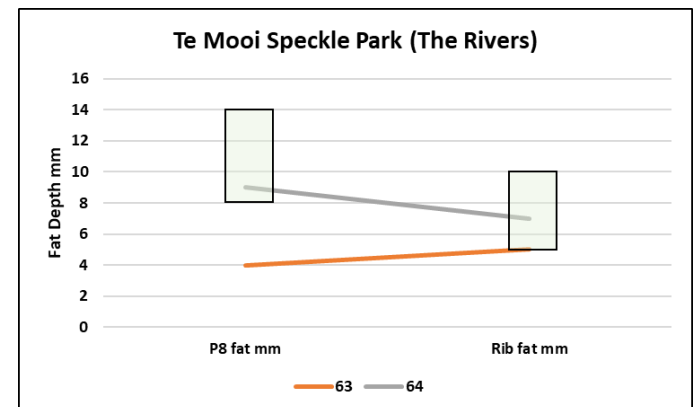
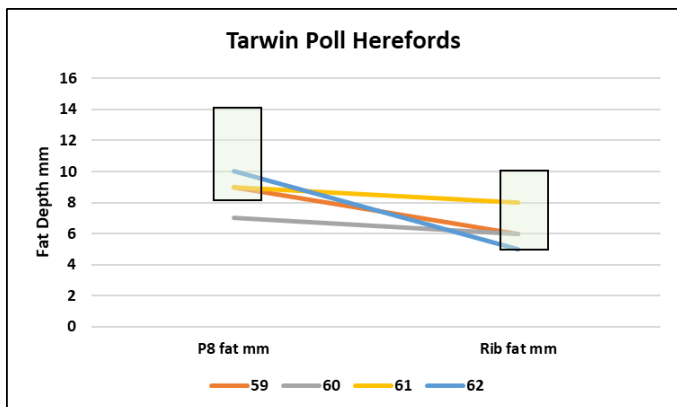
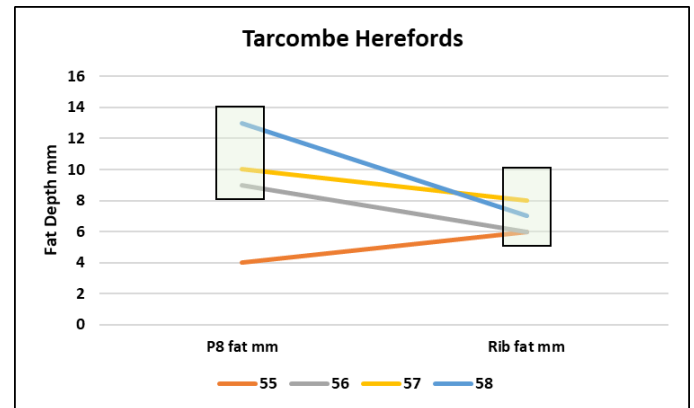
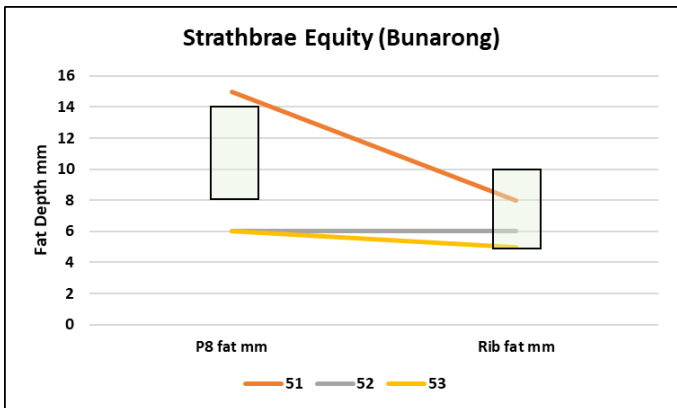
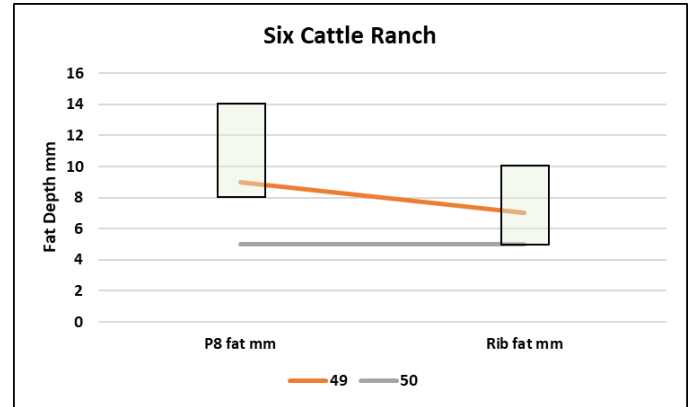
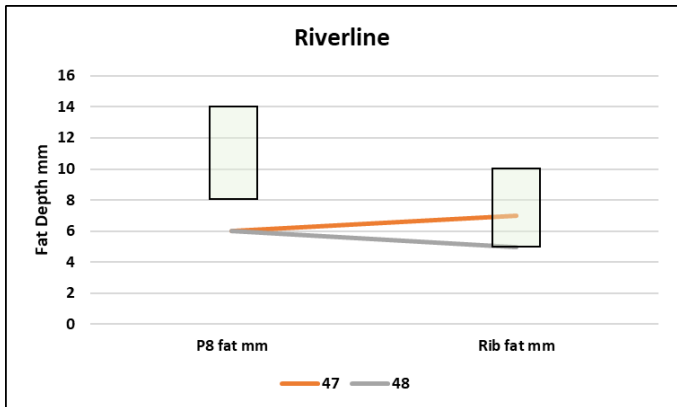
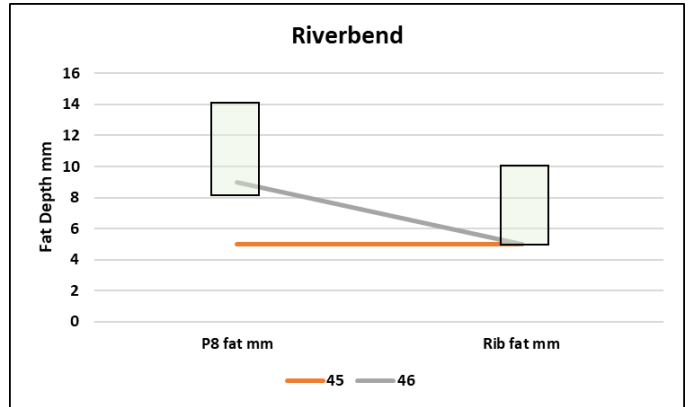
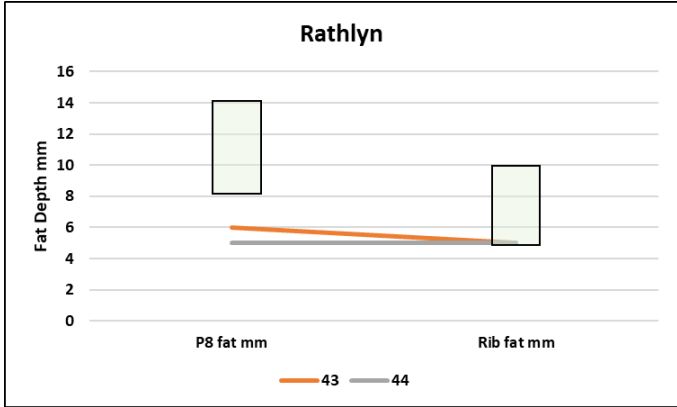
In a stud situation it may be acceptable to have uneven fat measurements on an animal if it is being marketed to the commercial producer as an animal that can be used to correct fat issues in the commercial herd. For example, the commercial herd may have an issue of having not enough rib fat but adequate P8 fat. They may choose to use a bull with slightly higher than desired rib fat levels (but adequate P8 fat levels) to make a quick correction in their herd to better meet market specifications. However, if retaining heifer calves as future breeders they may then need to revert to a bull that has a more even distribution to maintain an even distribution in their herd.

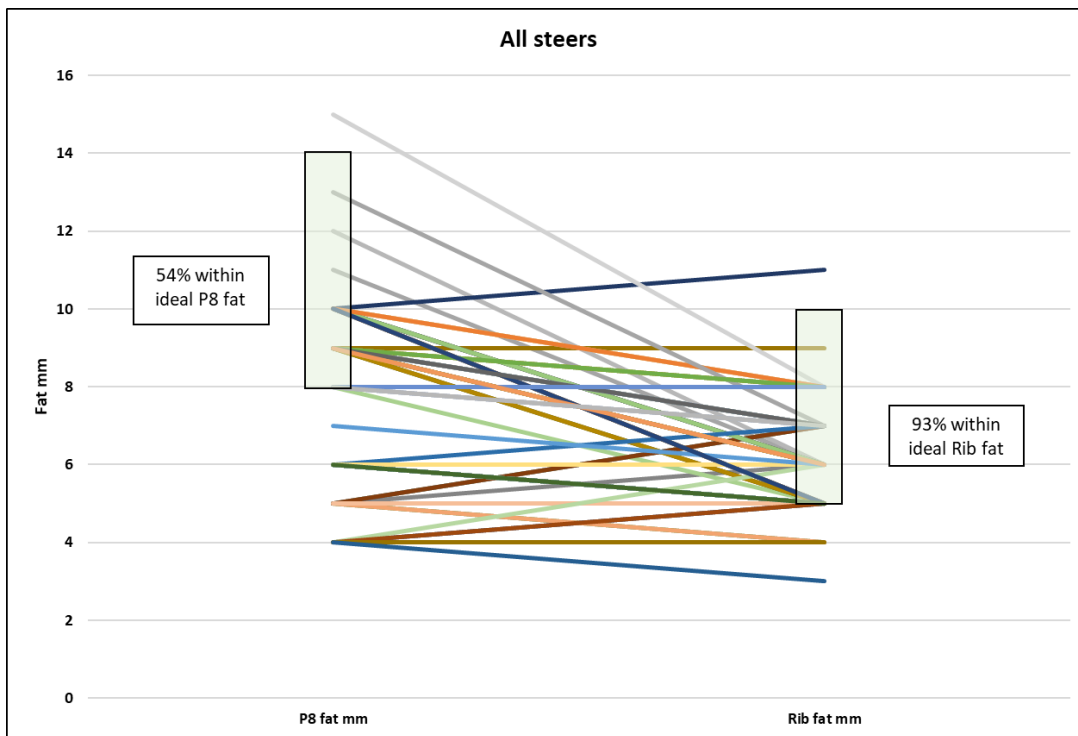
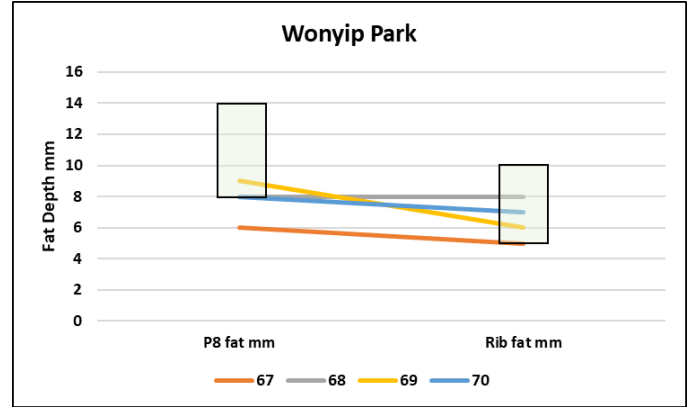
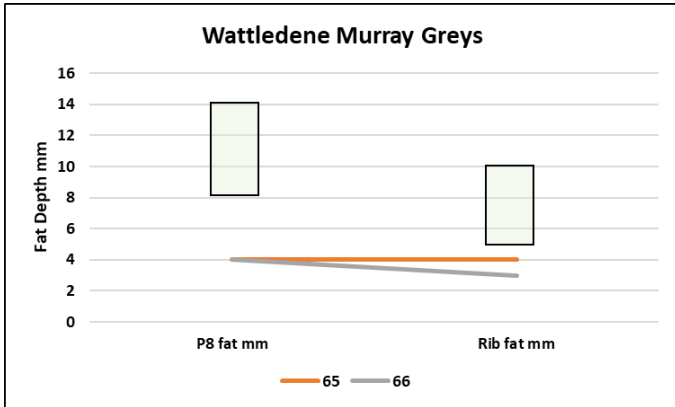
Following are the graphs of each entrants' teams of steers showing the rib fat and P8 fat measurements.

Note – the rectangles on the graph are the preferred fat ranges.









54% of the steers were within the ideal range of 8-14 mm fat for the P8 fat measurement, up from 43% last year.

There was a huge improvement in the rib fat measurements of the steers this year with 93% of the steers being in the ideal range of 5-10 mm fat (last year only 59% of the steers were in this range).

MSA Index

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

The MSA Index is a number between 30 to 80, representing the eating quality potential of the whole carcass.

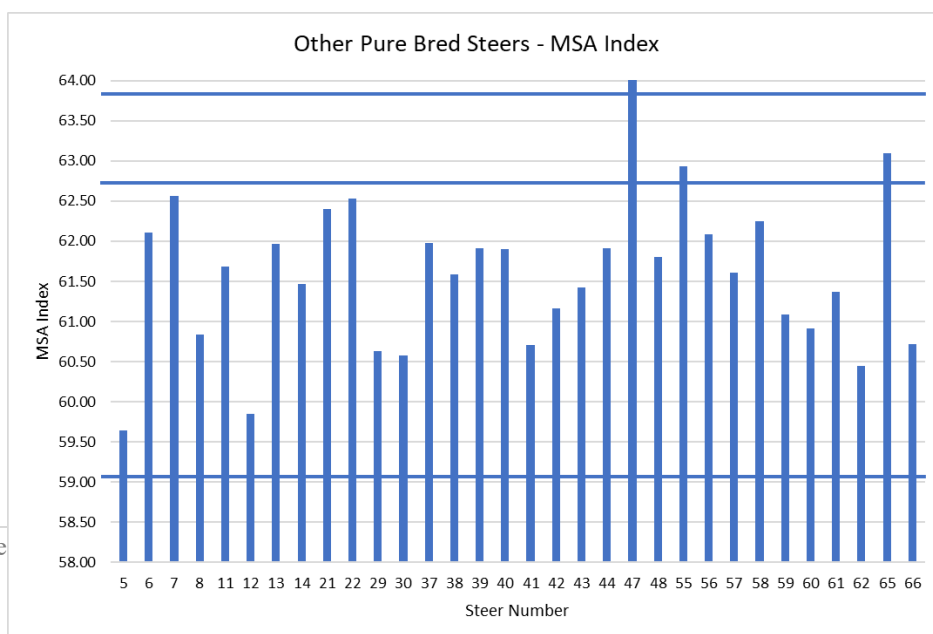
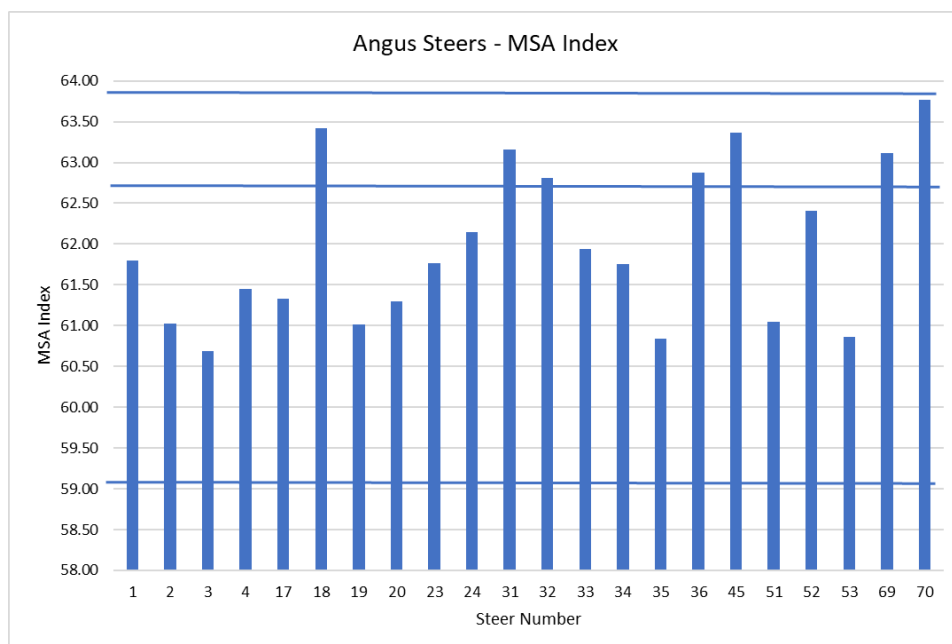
MSA eating quality scores are the combination of tenderness, juiciness, flavour and overall liking of beef. The MSA Index is a weighted average of these scores for the 39 MSA cuts for the most common corresponding cooking method.

Note: The steer that did not meet MSA grading criteria (classified as dark cutters due to high pH and meat colour) was given an Opportunity Index. This has recently been introduced by MSA to show producers what their Index would have been if non-compliant carcasses had met the MSA minimum requirements. More detail can be found here: <https://www.mla.com.au/globalassets/mla-corporate/marketing-beef-and-lamb/documents/meat-standards-australia/msa-changes-2019/opportunity-index-factsheet.pdf>

The following graphs highlight how the steers in the Lardner Park steer trial scored for MSA Index

Note: the top line indicates highest 5% (index score 63.79), middle line indicates highest 10% (index score 62.71) and bottom line indicates the 50% (median, index score 59.03) of MSA Index scores for Non-Grainfed cattle in Australia (2022-23)

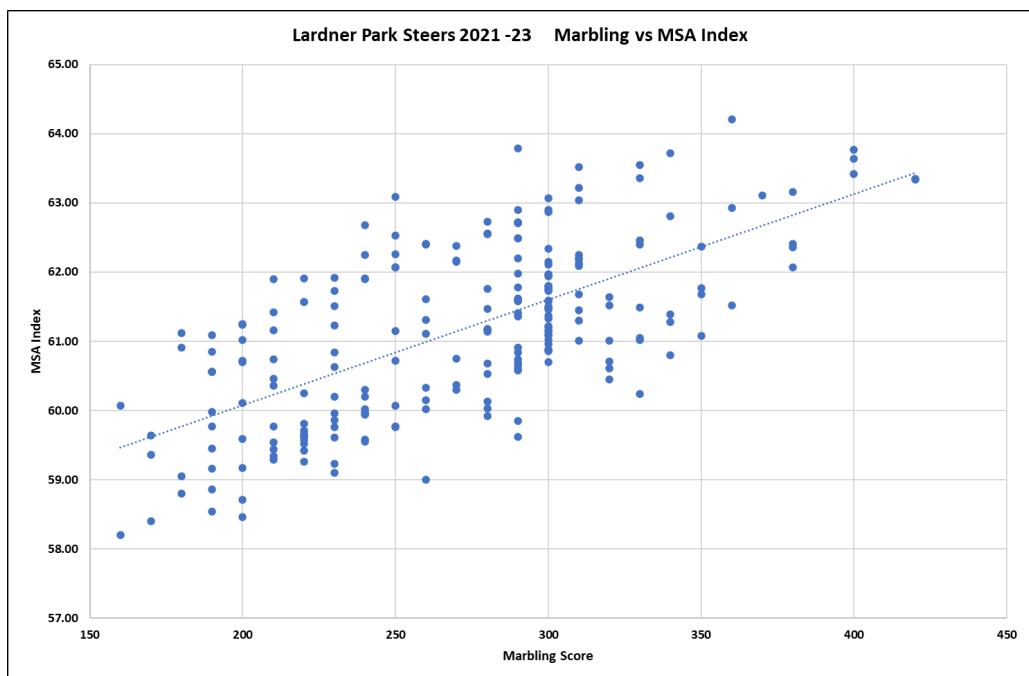
The orange bars are the steers that have an Opportunity Index rather than a MSA Index



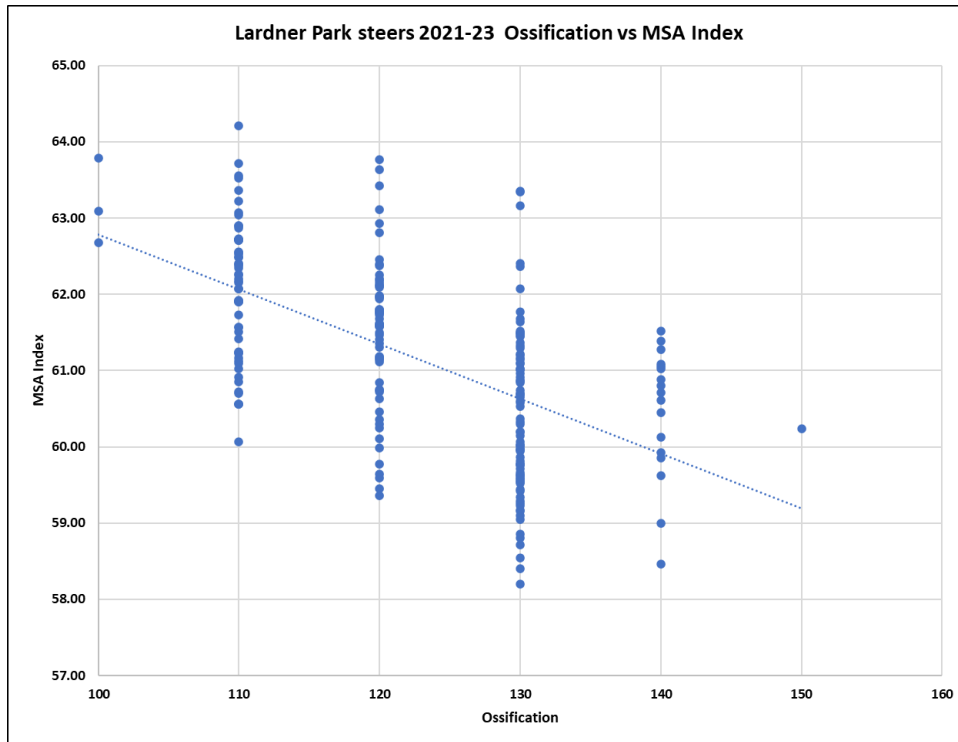


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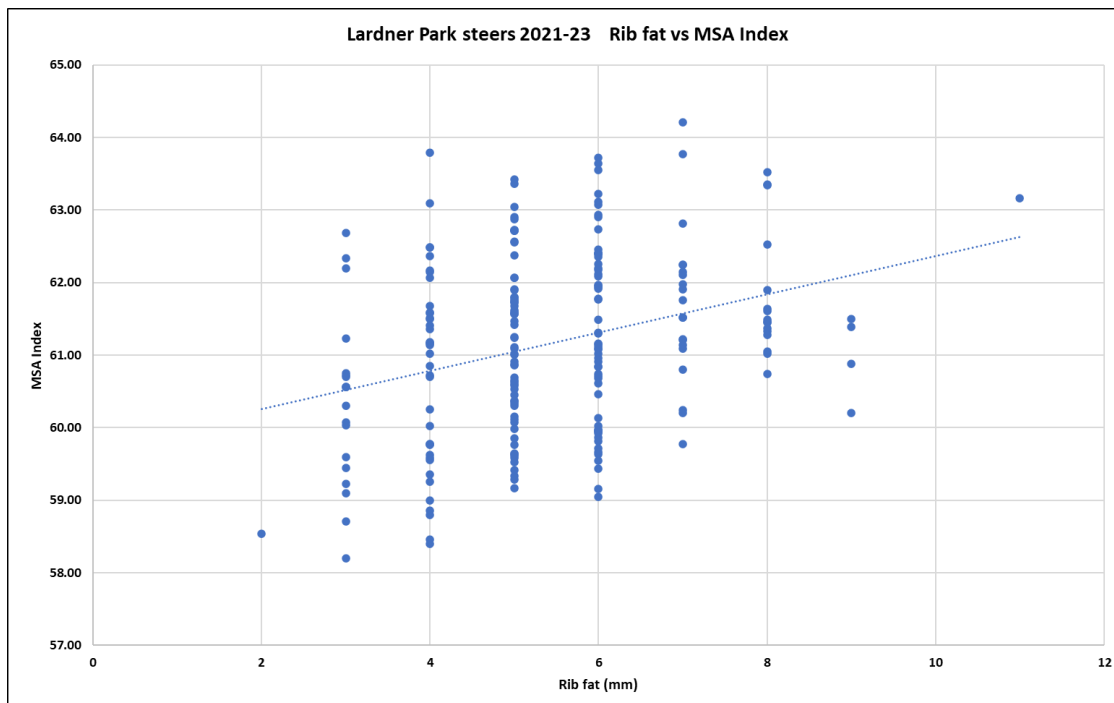
Marbling: an increase in the MSA marble score of 100, equates to a 1.5 unit increase in the MSA Index. MSA marbling in the steer trial ranged from 160 up to 380. Selection for improved MSA marble score can be achieved by selecting animals with higher Intramuscular Fat (IMF) EBVs



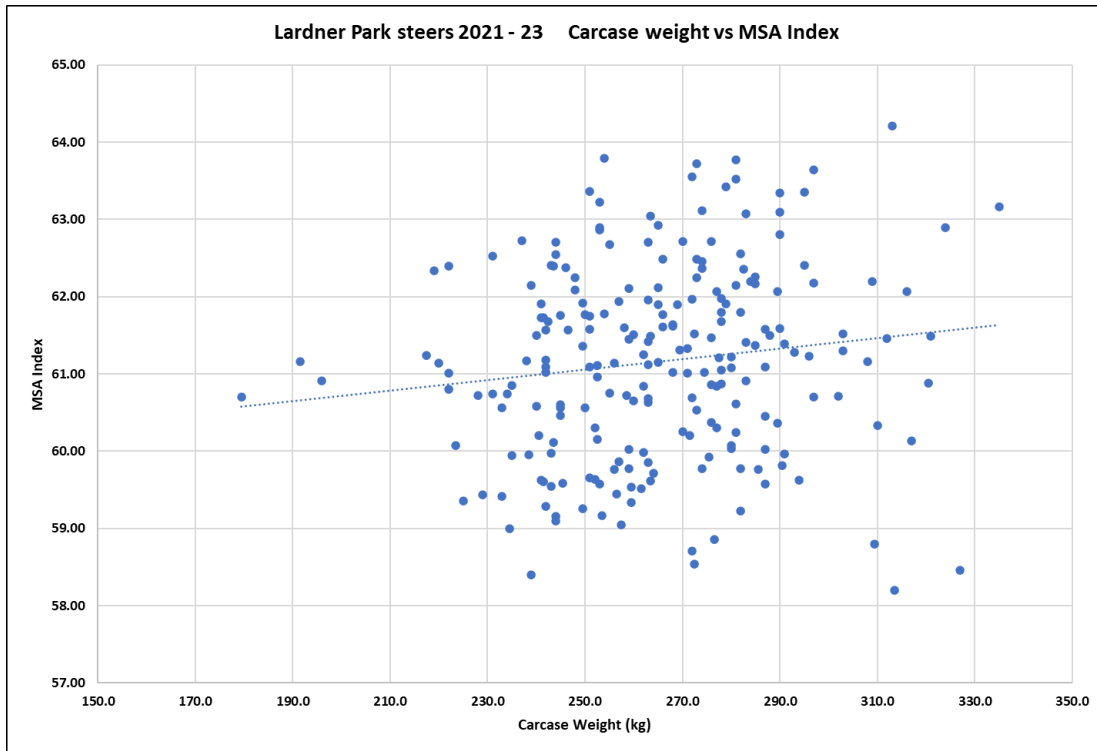
Ossification: The graph shows as ossification increases, the MSA Index decreases. As ossification scores decrease by 10, the MSA Index potentially increases by 0.6 index units. Ossification scores in the steer trial ranged from 110 -150. Selection for lower ossification scores can be achieved by selecting animals with higher 200 day growth, 400 and 600 day weight EBVs.



Rib fat: A 1mm increase in rib fat corresponds to a potential increase in the MSA Index of 0.1 index units.



Carcase weight: carcass weight only has a small impact on MSA Index, with MSA calculating that as HSCW increases by 1kg, the MSA Index will potentially increase by less than 0.01 index units. The data from the last two years steer trials shows carcass weight had very little influence on the MSA index.



For further information please see the Tips and Tools at the following link:

https://www.mla.com.au/globalassets/mla-corporate/marketing-beef-and-lamb/documents/meat-standards-australia/msa-beef-tt_full-info-kit-lr_updated.pdf

Age at finishing

Based on the birth dates of the steers provided on registration forms, it was interesting to note the large range in age at processing. *Note: the numbers on the x axis are not the steer ear tag numbers, just a steer pair number, so steers and property is not identified – this data on age at finishing is for information only and is not part of the finishing trial judging criteria.*

Overall, age at finish depends on animal genetics, pasture composition overlaid by livestock and pasture management and farm systems. The table and graph below show the estimated average age, youngest 10% and oldest 10% groups' estimated age at processing for the 2023 steers.

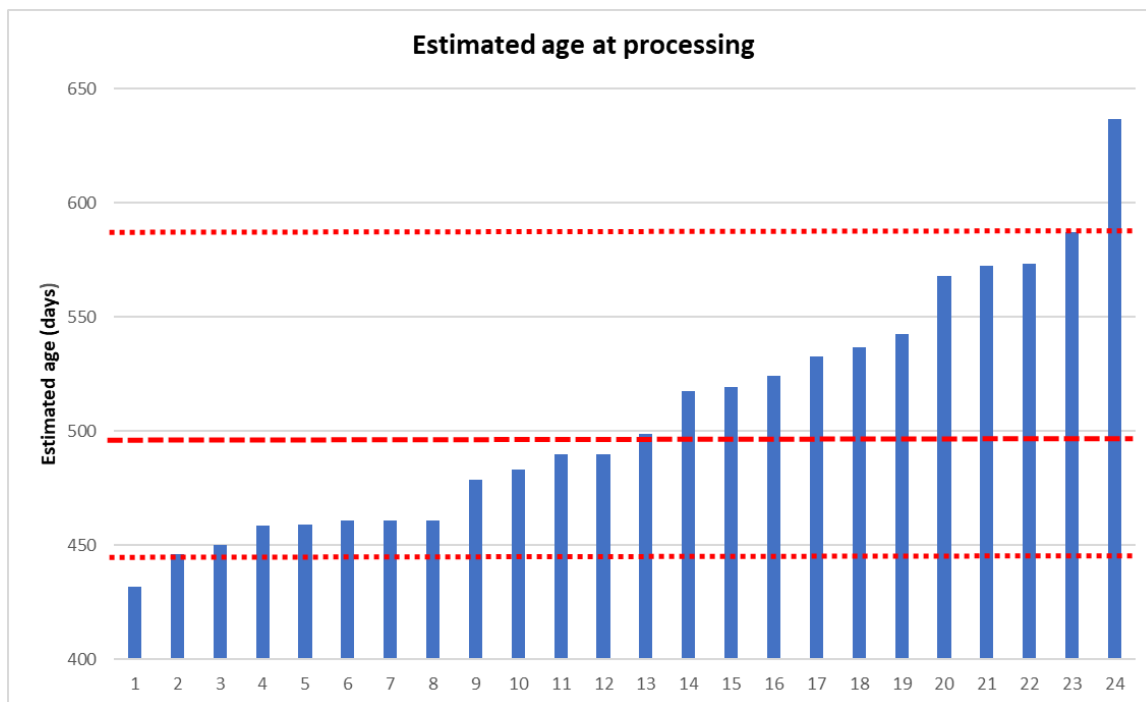
The youngest 10% group age at processing was 447 days of age, the median (50%) group age was 490 days of age while the oldest 10% group age was 587 days of age. Average finishing age for the whole group was 505 days. On the basis of this finishing trial there appears to be potential to finish stock, depending on the farm system, at least three months younger on average. This would have a substantial impact in reducing greenhouse gas emissions in the beef supply chain.

What does this mean in terms of greenhouse gas emission estimates for the supply chain?

Shorter time to finish and process would likely result in a decreased emissions profile. In the future will the supply chain look more favourably at stock reaching processing weights and specifications at a younger age? Younger finished stock will contribute less to Scope 3 emissions at the processing level of the supply chain. **It's food for thought.**

Scope 3 emissions are indirect greenhouse gas emissions occurring as a consequence of the activities of a works, but from sources not owned or controlled by that facility.

	Estimated age at processing	Difference from median
Youngest 10% group age	447 days	-43 days
Median (50%) group age	490 days	
Average group age	505 days	
Oldest 10% group age	587 days	+97 days



See the following pages for the results of each participants cattle. The table includes where the cattle finished in relation to other entrants.

The various components that contribute to the final scores for the cattle are listed and where relevant, components have been traffic lighted to help give an indication of areas that stock are doing well in, or could be areas to look at to address if you wished to improve the performance of your cattle.

	Red colour indicates a much lower performance than other cattle in the trial
	Orange colour indicates generally in the mid range of performance compared to other cattle in the trial
	Green colour indicates that performance in this trait is good compared to other cattle in the trial

Below are the ranges used for colour allocation for the different attributes of performance that are used to score your cattle. Note: some of these ranges may change from year to year depending on how cattle perform in the trial each year. Where traffic lighting is purely based on points awarded in the carcase traits through MSA grading, the ranges are unlikely to change.

Weight Gain	< 146 kg (<1 kgLW/day gain)	146-190 kg (1-1.3 kgLW/day gain)	>190 kg (>1.3 kgLW/day gain)	
Carcase Score	≤ 69.99	70 – 84.99	≥ 85	
P8 fat mm (ideal 8-14 mm fat)	≤5 points (≤4 mm P8 fat)	6 - 9 points (5 – 7 mm P8 fat, 15mm P8 fat)	10 points (8 – 14 mm P8 fat)	
Rib fat mm (ideal 5-10 mm fat)	0 or 8 points (<3 – 3 mm fat)	12 points (4 mm fat)	15 points (5-10 mm fat)	
EMA cm² (Eye Muscle Area)	0 – 8.5 points	9 – 12.5 points	13+ points	
MC (Meat Colour)	0 points (Meat colour 5)	1 point (Meat colour 3)	4 – 5 points (Meat colours 2 – 1C)	
Oss (Ossification)	>200	150 - 190	100 - 140	
MSA Marb (Meat Standards Australia Marbling)	<200	200 - 299	>300	
MSA Index	Bottom 50% (a MSA Index less than 59.1) based on non grainfed cattle in Australia 2021-22	50 to 11 % (a MSA Index of 59.1 – 62.79) based on non grainfed cattle in Australia 2021-22	Top 10% (a MSA Index of 62.8 and above) based on non grainfed cattle in Australia 2021-22	

Note: the scoring systems for the MSA graded attributes of the carcass is done automatically through a program designed for use in carcass competitions – ABCAM (Australian Beef Carcass Appraisal Method). Most of the point allocations are straight forward, however you may note that points allocation for the EMA (eye muscle area) are not. With the version of ABCAM that has been used for the steer trial, the points are determined by the computer program from a look up chart that is based around the eye muscle area as a proportion of carcass weight, and this gives an estimate of the saleable meat yield from that carcass.

The MSA Index is calculated based on the effect HGP (hormone growth promotant) status, sex, HSCW (hot standard carcass weight), TBC (tropical breed content), hump height, Oss (ossification), MSA MB (MSA marbling), RF (rib fat), MFV (whether it is a milk fed vealer) and S/yard (whether it was sold through the saleyard rather than direct to abattoir) all have an impact on the eating quality. MLA (Meat and Livestock Australia) have an online calculator where you can enter your own numbers and if you change some of the numbers, such as rib fat, you can see the impact it might have on the MSA index of your steers. It can be accessed from the MLA website here: <https://www.nextgen.mymssa.com.au/beef/calculator>

For further information on the impacts of the different carcass attributes – particularly if your cattle are ranked lower for some of these attributes and you are wishing to address them - can have an impact on eating quality, see https://www.mla.com.au/globalassets/mla-corporate/marketing-beef-and-lamb/msa_tt_beefinfokit_jul13_lr.pdf

The points awarded for EQ (eating quality) on the MSA grading sheet, are a proportion of the MSA index (in this case 77.5% of the MSA index)

If you add together the EQ points + MC (meat colour) points + rib fat points + EMA (eye muscle area) points + P8 fat points = Carcase Score (that you can see in the 5th column on the following sheets)

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Steer Tag no.	Farm Name	Weight gain	Weight gain pts	Carcase Score (from grading sheet)	Carcase pts	Total pts	Pair Total pts	Place	Carcase Score Information – from MSA Grading sheet																
									LW kg	CW kg	DP %	P8 fat mm	P8 fat pts Max 10	Rib fat mm	Rib fat pts Max 15	EMA cm ²	EMA pts Max 20	pH	MC	MC pts Max 5	Oss	Hump	MSA Marb	MSA index	EQ pts
1	Ampitheatre Pastoral Partnership	186	45.97	85.12	56.03	102.00	198.99	21	516	278	53.9	10	10	5	15	67	8	5.65	2	4	120	50	300	61.80	48.12
2		174	43.01	82.01	53.98	96.99			495	268	54.2	11	10	6	15	60	5.5	5.54	2	4	130	55	300	61.02	47.51
3		177	43.75	87.26	57.44	101.19	206.97	9	497	272	54.7	6	8	5	15	78	13	5.55	2	4	130	55	290	60.69	47.26
4		206	50.92	83.35	54.86	105.78			501	259	51.7	10	10	8	15	60	6.5	5.54	2	4	130	50	310	61.45	47.85
5	Balla Balla	179	44.24	83.94	55.25	99.50	207.01	8	477	252	52.8	5	7	5	15	69	10.5	5.48	1c	5	120	50	170	59.64	46.44
6		189	46.72	92.36	60.80	107.51			496	259	52.2	9	10	7	15	78	14	5.54	1c	5	120	50	300	62.11	48.36
7	Brejayanne	187	46.22	81.21	53.46	99.68	207.94	7	534	282	52.8	4	5	5	15	69	8.5	5.53	2	4	110	40	280	62.56	48.71
8		212	52.40	84.87	55.87	108.27			532	277	52.0	9	10	6	15	66	7.5	5.55	1c	5	120	55	230	60.84	47.37
9		181	44.74	81.67	53.76	98.50	199.69	20	528	280	53.0	9	10	7	15	61	5	5.54	2	4	130	40	300	61.22	47.67
10		182	44.99	85.39	56.21	101.19			543	288	53.0	9	10	9	15	70	8.5	5.51	2	4	130	50	300	61.50	47.89
11	Charellen Poll Herefords	159	39.30	86.53	56.96	96.26	195.62	25	509	278	54.6	10	10	5	15	71	9.5	5.55	2	4	130	65	350	61.68	48.03
12		182	44.99	82.60	54.37	99.36			501	263	52.5	10	10	5	15	62	7	5.53	2	4	140	60	290	59.85	46.60
13		200	49.43	86.25	56.77	106.21	206.48	10	522	272	52.1	10	10	6	15	69	9	5.63	2	4	120	50	300	61.97	48.25
14		185	45.73	82.86	54.54	100.27			528	276	52.3	10	10	5	15	62	6	5.52	2	4	120	45	280	61.47	47.86
15	Chestnut Park	95	23.48	90.55	59.60	83.09	170.69	34	535	297	55.5	12	10	6	15	80	12	5.46	2	4	120	60	400	63.64	49.55
16		135	33.37	82.40	54.24	87.61			543	303	55.8	5	7	7	15	72	8.5	5.49	2	4	140	50	360	61.52	47.90
17	Delatite Station	187	46.22	84.75	55.79	102.01	205.67	11	524	271	51.7	9	10	8	15	66	8	5.55	2	4	130	50	300	61.33	47.75
18		196	48.45	83.88	55.21	103.66			529	279	52.7	5	7	5	15	66	7.5	5.51	1c	5	120	45	400	63.42	49.38
19	Eagle Rock Angus	246	60.80	83.00	54.63	115.44	222.30	1	521	271	52.0	6	8	5	15	67	8.5	5.53	2	4	130	50	310	61.01	47.50
20		212	52.40	82.73	54.46	106.86			548	303	55.3	10	10	6	15	66	6	5.54	2	4	130	45	310	61.30	47.73
21	Glendoxey	145	35.84	77.59	51.07	86.91	187.48	28	443	222	50.1	5	7	6	15	46	3	5.59	2	4	110	50	260	62.40	48.59
22		180	44.49	85.19	56.08	100.57			457	231	50.5	9	10	8	15	59	7.5	5.52	2	4	110	55	250	62.53	48.69
23		169	41.77	81.59	53.71	95.48	193.46	26	482	245	50.9	5	7	7	15	58	6.5	5.51	1c	5	120	60	280	61.76	48.09
24		173	42.76	83.89	55.22	97.98			445	239	53.7	5	7	4	12	69	11.5	5.53	1c	5	110	35	270	62.15	48.39
25	Jones Farms	180	44.49	87.10	57.33	101.82	205.32	12	481	254	52.8	9	10	6	15	68	10	5.53	2	4	120	50	290	61.78	48.10
26		201	49.68	81.75	53.81	103.49			515	263	51.0	6	8	6	15	61	6.5	5.50	1c	5	130	50	280	60.68	47.25
27		197	48.69	87.79	57.79	106.48	215.70	3	455	234	51.4	10	10	8	15	66	10.5	5.51	1c	5	120	45	210	60.74	47.29
28		222	54.87	82.57	54.35	109.22			475	246	51.8	5	7	5	15	60	7	5.51	1c	5	110	55	270	62.38	48.57
29	Ketlang Red Poll	150	37.08	75.71	49.84	86.91	174.53	32	498	263	52.8	5	7	5	15	52	2.5	5.53	2	4	120	45	230	60.63	47.21
30		121	29.91	87.67	57.71	87.62			461	240	52.0	8	10	5	15	69	11.5	5.51	2	4	130	50	290	60.58	47.17
31	Leven Vale (Bungeelap Pty Ltd)	233	57.59	70.68	46.52	104.12	204.99	13	623	335	53.8	10	10	11	11	70	5.5	5.52	1c	5	130	45	380	63.16	49.18
32		186	45.97	83.41	54.90	100.88			537	290	54.0	5	7	7	15	70	8.5	5.50	2	4	120	55	340	62.81	48.91
33	Lineham Farms	154	38.06	84.23	55.44	93.51	183.21	29	490	257	52.4	9	10	6	15	61	7	5.51	2	4	120	40	300	61.94	48.23
34		147	36.33	81.08	53.37	89.70			487	251	51.5	5	7	5	15	60	7	5.56	2	4	120	50	300	61.75	48.08
35		179	44.24	78.87	51.92	96.16	198.63	22	522	262	50.2	10	10	6	15	59	5.5	5.56	3	1	130	45	290	60.84	47.37
36		179	44.24	88.45	58.22	102.47			494	253	51.2	9	10	5	15	69	10.5	5.53	2	4	110	40	300	62.87	48.95

Steer Tag no.	Farm Name	Weight gain	Weight gain pts	Carcase Score (from grading sheet)	Carcase pts	Total pts	Pair Total Pts	Place	Carcase Score Information – from MSA Grading sheet																
									LW kg	CW Kg	DP %	P8 fat mm	P8 fat pts Max 10	Rib fat mm	Rib fat pts Max 15	EMA cm ²	EMA pts Max 20	pH	MC	MC pts Max 5	Oss	Hump	MSA Marb	MSA index	EQ pts
37	Molesworth Pastoral (Mudgerbah)	183	45.23	84.26	55.46	100.70	201.86	17	532	278	52.3	8	10	7	15	62	6	5.47	1c	5	120	45	290	61.98	48.26
38		195	48.20	80.46	52.96	101.16			551	290	52.6	5	7	4	12	70	8.5	5.52	1c	5	120	60	300	61.59	47.96
39		157	38.81	85.21	56.09	94.90	204.04	15	446	241	54.0	8	10	7	15	59	7	5.54	1c	5	110	45	220	61.91	48.21
40		216	53.39	84.70	55.75	109.14			519	269	51.8	6	8	5	15	68	8.5	5.50	1c	5	110	50	240	61.90	48.20
41	Moorville	159	39.30	77.27	50.86	90.16	189.21	27	562	302	53.8	6	8	6	15	59	3	5.45	2	4	140	45	320	60.71	47.27
42		194	47.95	77.62	51.09	99.04			579	308	53.2	10	10	6	15	51	0	5.50	1c	5	130	55	300	61.16	47.62
43	Rathlyn	187	46.22	80.32	52.87	99.09	201.24	18	481	263	54.7	6	8	5	15	59	5.5	5.53	2	4	110	45	210	61.42	47.82
44		197	48.69	81.21	53.46	102.15			513	279	54.4	5	7	5	15	65	7	5.53	2	4	110	45	240	61.91	48.21
45	Riverbend	188	46.47	87.83	57.81	104.28	215.49	4	481	251	52.2	5	7	5	15	71	11.5	5.48	1c	5	110	60	330	63.36	49.33
46		220	54.38	86.33	56.83	111.20			503	277	55.1	9	10	5	15	70	9	5.66	2	4	110	50	250	62.07	48.33
47	Riverline	242	59.82	84.50	55.62	115.44	216.29	2	600	313	52.2	6	8	7	15	69	6.5	5.51	1c	5	110	50	360	64.21	50.00
48		188	46.47	82.62	54.38	100.85			550	282	51.3	6	8	5	15	67	7.5	5.49	2	4	120	55	300	61.80	48.12
49	Six Cattle Ranch	175	43.26	84.84	55.85	99.10	173.48	33	449	222	49.4	9	10	7	15	60	8.5	5.51	2	4	140	45	340	60.80	47.34
50		205	50.67	35.00	23.24	73.91			455	241	53.0	5	7	5	15	73	13	6.26	5	0	120	45	300	61.73*	0
51	Strathbrae Equity (Bunarong)	165	40.78	84.54	55.65	96.43	200.81	19	536	278	51.8	15	9	8	15	70	9	5.52	2	4	140	45	330	61.05	47.54
52		201	49.68	83.09	54.69	104.38			558	295	52.8	6	8	6	15	69	7.5	5.52	2	4	130	40	380	62.41	48.59
53		177							540	276	51.1	6		5		59		5.51	2		130	50	300	60.86	
54		Steer removed from competition																							
55	Tarcombe Herefords	176	43.50	80.00	52.66	96.16	196.67	24	501	265	52.8	4	5	6	15	62	7	5.50	2	4	120	40	360	62.93	49.00
56		170	42.02	88.85	58.49	100.50			469	248	52.9	9	10	6	15	68	10.5	5.54	1c	5	120	55	310	62.09	48.35
57		180	44.49	87.97	57.91	102.40	208.25	6	494	266	53.8	10	10	8	15	70	10	5.51	1c	5	120	50	260	61.61	47.97
58		190	46.96	89.47	58.89	105.86			518	273	52.7	13	10	7	15	73	11	5.50	1c	5	110	45	240	62.25	48.47
59	Tarwin Poll Herefords	185	45.73	80.57	53.03	98.76	203.69	16	550	287	52.2	9	10	6	15	60	4	5.53	2	4	130	45	300	61.09	47.57
60		193	47.70	86.93	57.22	104.93			539	283	52.5	7	9	6	15	74	10.5	5.51	1c	5	130	55	290	60.91	47.43
61		218	53.88	88.28	58.11	111.99	210.26	5	553	285	51.5	9	10	8	15	77	11.5	5.49	2	4	130	55	300	61.37	47.78
62		183	45.23	80.57	53.03	98.27			556	287	51.6	10	10	5	15	61	4.5	5.59	2	4	140	55	320	60.45	47.07
63	Te Mooi Speckle Park	149	36.83	79.72	52.48	89.30	182.57	30	484	260	53.7	4	5	5	15	65	8.5	5.56	2	4	130	55	290	60.65	47.22
64		148	36.58	86.11	56.68	93.26			477	256	53.6	9	10	7	15	68	9.5	5.52	2	4	130	50	300	61.14	47.61
65	Wattledene Murray Greys	169	41.77	75.12	49.45	91.22	177.85	31	542	290	53.5	4	5	4	12	60	4	5.48	1c	5	100	55	250	63.09	49.12
66		158	39.05	72.28	47.58	86.63			461	228	49.4	4	5	3	8	66	11	5.68	3	1	110	50	200	60.72	47.28
67	Wonyip Park	185	45.73	85.13	56.04	101.76	197.88	23	501	273	54.5	6	8	5	15	73	11	5.51	2	4	130	50	280	60.53	47.13
68		159	39.30	86.32	56.82	96.12			517	290	56.1	8	10	8	15	69	8	5.56	2	4	130	55	420	63.34	49.32
69		185	45.73	89.64	59.01	104.73	204.78	14	529	274	51.7	9	10	6	15	75	11.5	5.52	2	4	120	50	370	63.11	49.14
70	174	43.01	86.65	57.04	100.05	516			281	54.4	8	10	7	15	68	8	5.53	2	4	120	50	400	63.77	49.65	

*The MSA Index is an Opportunity Index only and indicates what might have been achieved if the steer had not failed on pH (dark cut). As this steer failed one of the key MSA specifications it cannot receive an actual MSA Index and thus receives no eating quality po

