



Lardner  
Park

# 2016 LARDNER PARK STEER TRIAL



*Strategic Partners*



## LARDNER PARK 2016 STEER TRIAL

### Aim

The objectives of the Steer Trial are to demonstrate the carcass requirements of the standard domestic trade market and to provide information on the growth and carcass quality of steers. It also aimed to assist beef producers to improve their understanding of live steer assessment, market requirements, steer growth and fattening relative to pasture production, and to provide a forum for discussion on aspects of the cattle industry.

### The Competition.

All cattle started on the Lardner Park property in June and were weighed regularly with entrants able to view the cattle each weighing day.

In 2016, there was only 1 turnoff – standard domestic trade.

Cattle had to meet the following specifications for the **standard domestic trade** when they were turned off – Wednesday 30<sup>th</sup> November 2016.

Hot standard carcass weight	210 – 285kg
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Penalty points were imposed if cattle fell outside specifications for carcass weight.

Each carcass falling outside the weight range of 210 – 285kg carcass weight was applied with penalty points of 2 points per kg over 285kg carcass weight or 2 points per kg under 210kg carcass weight.

No individual steer/carcass was disqualified from the 'Domestic Weight Gain & Carcass' category, or the 'Highest Carcass Score as a Pair' if animals failed to meet specifications as this was taken into account through the penalty point system.

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 210 – 285 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.

### MSA grading

Carcasses were judged at JBS Australia'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 System (ABCAS).

### Judging System details.

The MSA system was utilised and the judging criteria were: 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'.

*Reasons cattle may have received no 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.*

### **Carcase Prices and discounts**

The top 3 carcasses (taking into account P8 fat points, Meat Colour points, Rib Fat points, Eye Muscle Area points and Eating Quality points) were awarded a premium resulting in a price of \$6.30/kg carcass weight for best carcass, \$6.20/kg carcass weight for 2<sup>nd</sup> and \$6.10/kg carcass weight for 3<sup>rd</sup>.

If carcasses received no discounts the price received was \$6.00/kg carcass weight.

Carcasses that were too heavy (above 285kg carcass weight) or had fat issues received a \$0.20 discount, resulting in a price of \$5.80/kg carcass weight.

### **The 2016 Competition**

The initial weight was taken on 27<sup>th</sup> June after a one week settling in period.

The herd was run in 1 mob on pasture with supplements fed as deemed necessary depending on pasture growth. The tables below summarise the liveweight gain (empty weight) and carcass performance.

**TABLE 1 – Average Liveweight Gain Performance**

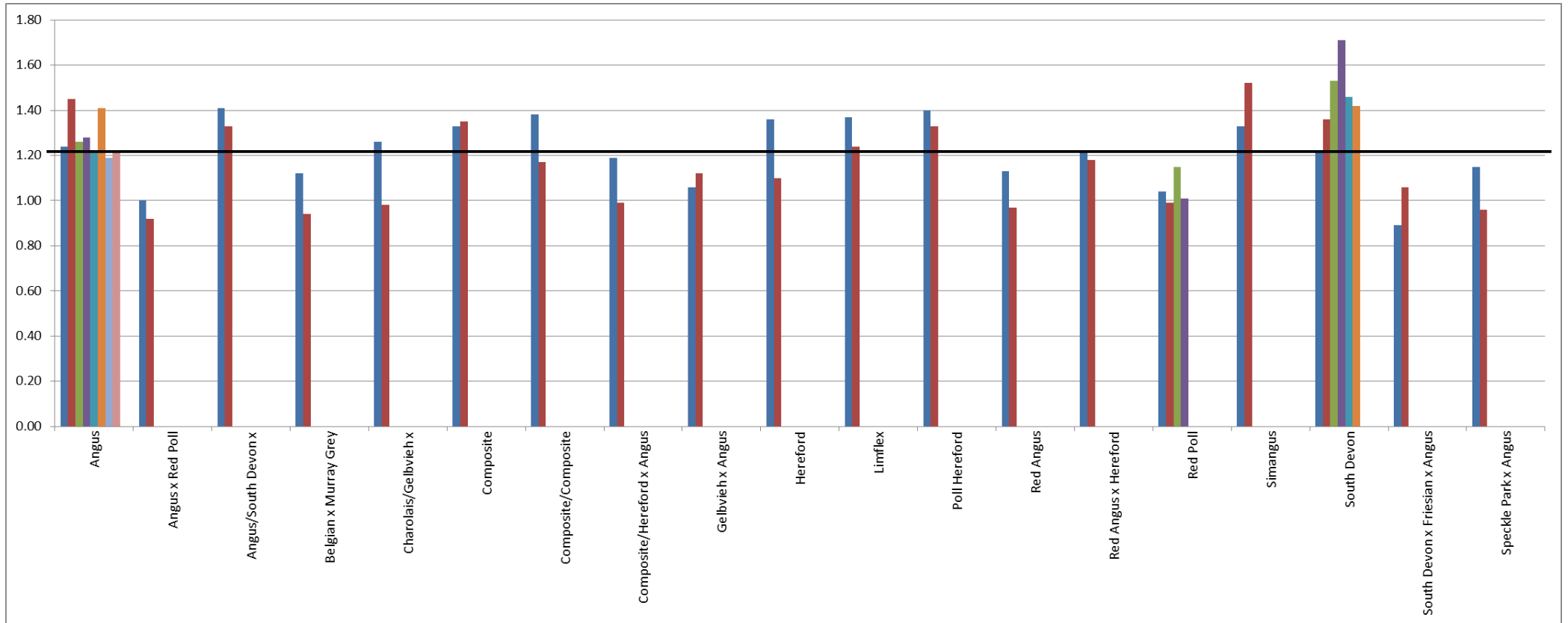
Standard Domestic Class												
	Average LW kg						Average LW Gain kg per day					
	2016	2015	2014	2013	2012	2011	2016	2015	2014	2013	2012	2011
Initial	295	279	289	279	285	275						
Turnoff	485	469	467	473	469	442						
Wt Gain	190	190	178	194	184	168	1.22	1.22	1.14	1.26	1.20	1.09

2016 saw the averaged weight gain performance the same as the previous year, with an average weight gain of 1.22 kgLW per day. Individual average weight gains over the trial period ranged from 0.96 kgLW per day up to 1.62 kgLW per day.

The weight gain of 1.62 kgLW/day (South Devon steers) unfortunately resulted in both steers in the pair exceeding the upper limit for carcass weight. One steer exceeded the upper weight by 27.5 kg, resulting in 55 penalty points, while the second steer exceeded the weight limit by 8 kg resulting in 16 penalty points. Due to not falling within the weight specifications, both the steers were disqualified from the "highest weight gain pair" award.

The graph overpage shows a comparison on the different breeds performance for 2016 in average liveweight gain per day. The line across the bar graph is the average liveweight gain per day of the mob as a whole of 1.22 kgLW/day.

## Average liveweight gain (kg/day) of different breeds in the trial



## **Standard Domestic Trade**

50 steers competed in the Standard Domestic Trade class for 2016.

Four steers (or 8%) were outside specifications for carcass weight (and were awarded penalty points) – all were over the 285 kg upper weight limit. The heaviest steer was 27.5 kg over at a carcass weight of 312 kg resulting in a 55 point penalty for that carcass.

Eight steers received no points for eating quality (an increase from last year) – 5 steers had a pH above 5.7 with all of the carcasses resulting in a meat colour of 4 or above (dark cutters). The other 3 steers received no eating quality points as its rib fat measurements were either 1 or 2 mm and it is required to be 3mm and above.

FYI - last year of the 52 steers competing, 8 (or 15%) were outside specifications on carcass weight and 7 received no points for eating quality.

**TABLE 2 – Carcass Data STANDARD DOMESTIC**

<b>Carcass details</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
Av Carcass Weight (kg)	254.5	246	236	247	250	239
Av Dressing %	52.5	52.4	50.6	52.55	53.4	58.7
Av P8 Fat Depth (mm)	6.2	6.2	8	6.5	6.4	6.1
Av rib fat (mm)	4.1	5.2	3.9	7.7	7.4	6.5
Av Eye Muscle Area (sq cm)	64.6	63	70	65.9	67.7	59.9
Av pH	5.59	5.56	5.52	5.49	5.47	5.48
Av Ossification Score	116	127	115	112	116	120

Average dressing % ranged from 49.6% up to 56.9%. The steer that dressed out at 49.6% was a South Devon (the other steer of the pair dressed out at 51.6%). The steer that dressed out at 56% was a Belgian Blue x Murray Grey (the other steer of the pair dressed out at 56.5%).

Average eye muscle area ranged from 50 sq cm to 94 sq cm. The largest eye muscle area came from a Charolais/Gelbvieh x (the other steer of the pair had an eye muscle area of 77 sq cm). The second largest eye muscle (at 82 sq cm) came from a Belgian Blue x Murray Grey. The third largest eye muscle (at 81 sq cm) came from an Angus/South Devon.

### **Fat distribution plays an important role at the abattoir, impacts 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)*

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

Note – the green rectangles on the graph are the fat measurements that receive no discount on carcass price.

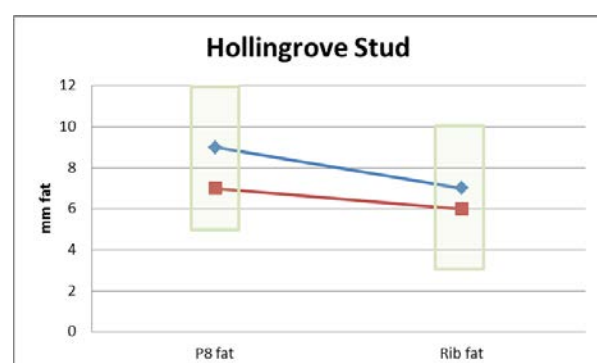
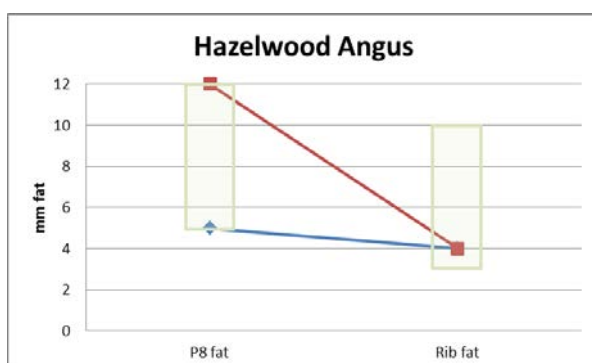
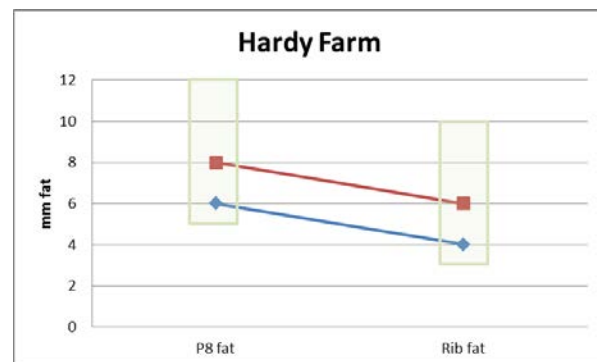
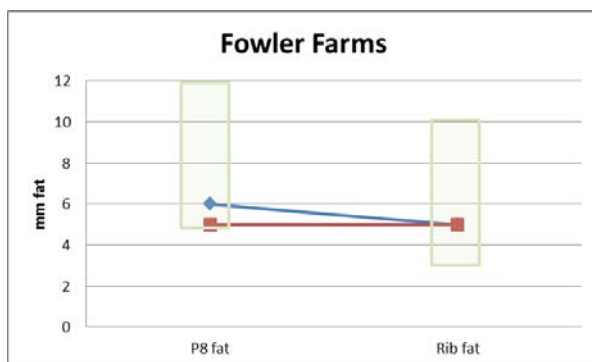
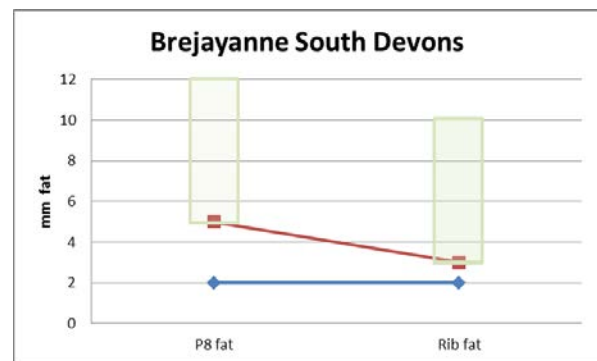
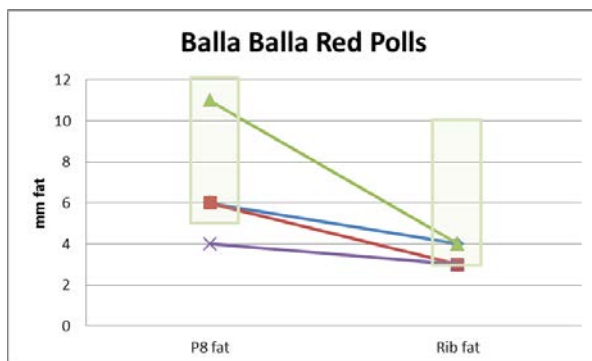
Points were awarded as follows for P8 fat:

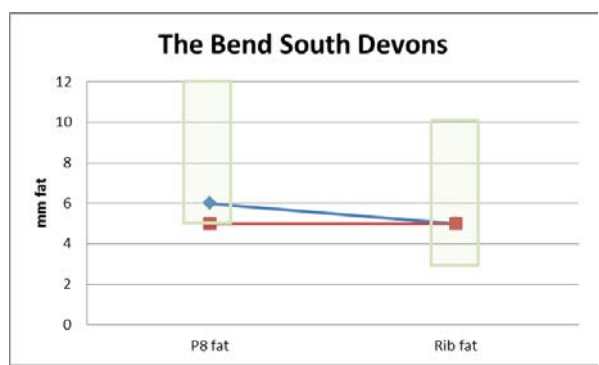
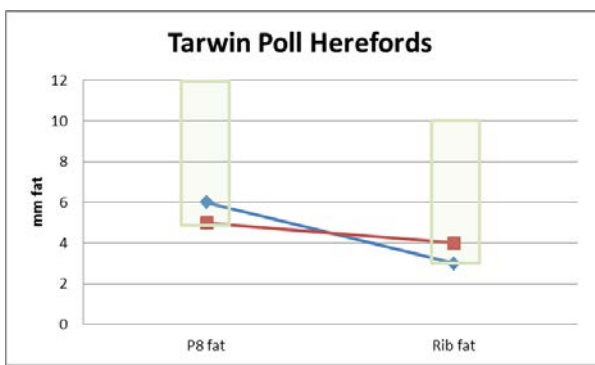
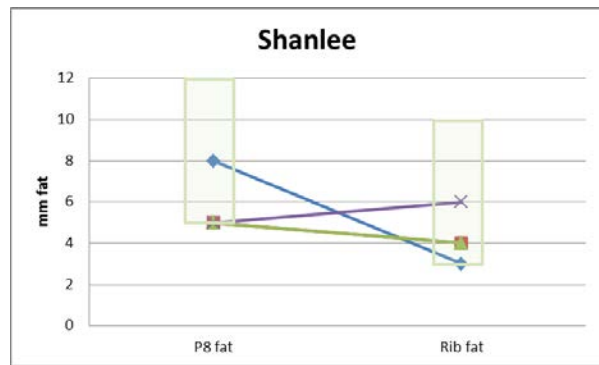
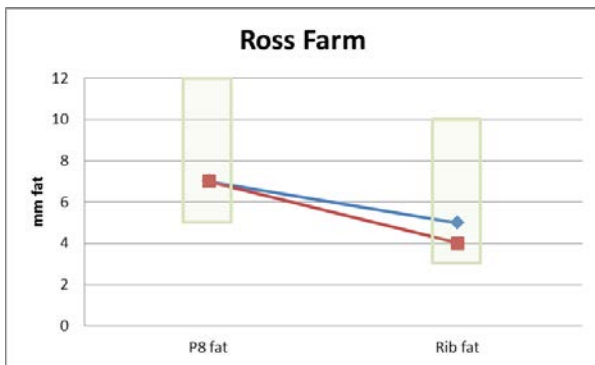
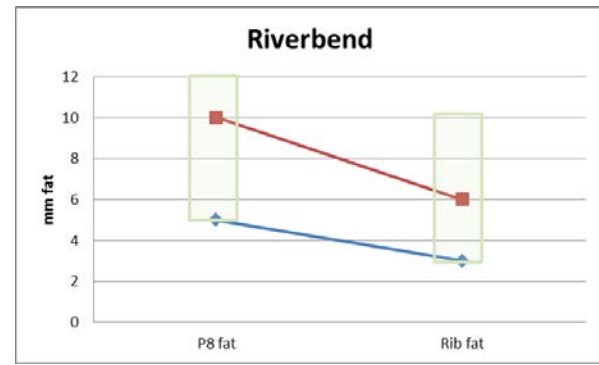
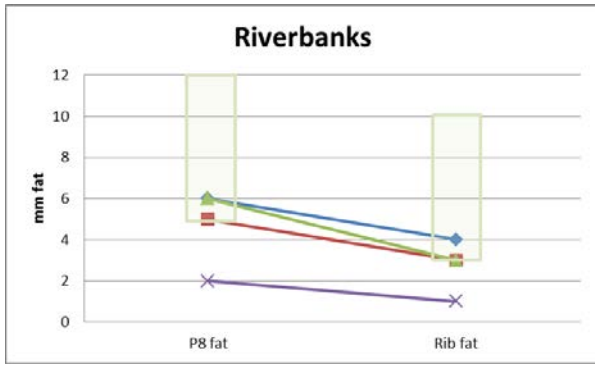
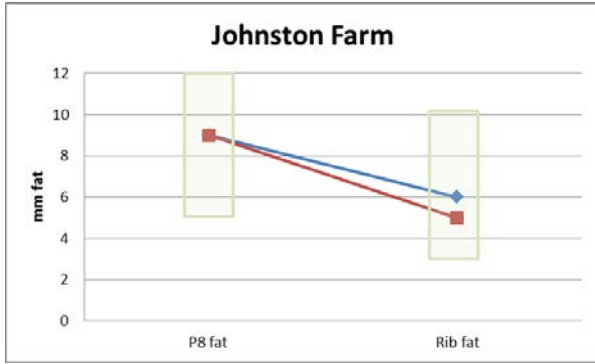
P8 fat mm	≥15	8 -14	7	6	5	4	3	≤2
Points	6	10	9	8	7	5	3	0

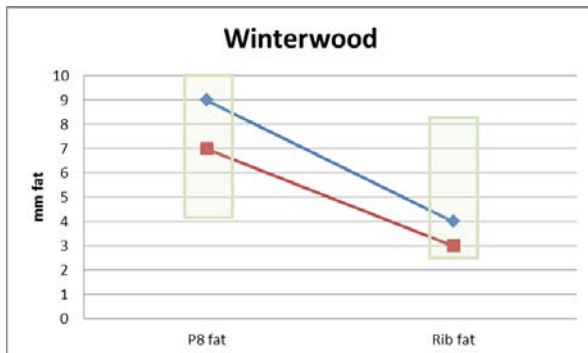
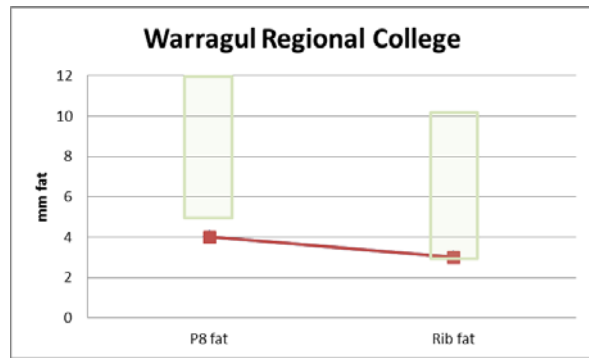
Points were awarded as follows for rib fat:

Rib fat mm	≥11	5-10	4	3	≤2
Points	11	15	12	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.







## 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.

How can you breed for increased MSA index values?

There is an opportunity to increase MSA Index values through genetic selection. For detailed information, see the TechTalk article at the following link:

<http://sbts.une.edu.au/pdfs/TTJune15.pdf>

*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 140 up to 350. Selection for improved MSA marble score can be achieved by selecting animals with higher Intramuscular Fat (IMF) EBVs*

*Ossification: As ossification scores decrease by 10, the MSA Index potentially increases by 0.6 index units. Ossification scores in the steer trial ranged from 100 (lowest score possible) up to 400. \*Note in this trial most carcasses scored between 100-170. The figure of 400 could indicate an illness or nutritional challenge in the animals lifetime or a highly stressed animal. 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. Rib fat in the steer trial ranged from 1-9mm, remembering that to be eligible for MSA grading rib fat must be 3mm or above.*

*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.*

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

<http://www.mla.com.au/files/4d0d7909-f1de-4a04-96dc-a2fb00d09704/msa-index-tip-and-tool.pdf>

The graph overpage shows the difference in MSA Index of the breeds that took part in the steer trial. Note: 8 animals were ineligible to receive a MSA Index as they were not eligible to be graded under MSA – 5 failed on pH/meat colour and 3 failed on rib fat cover.

Note: the top horizontal line represents the score of the top 10% MSA Index scores in Australia in the 15/16 financial year. The lower horizontal line represents the AVERAGE Australian MSA Index score for 15/16 financial year.

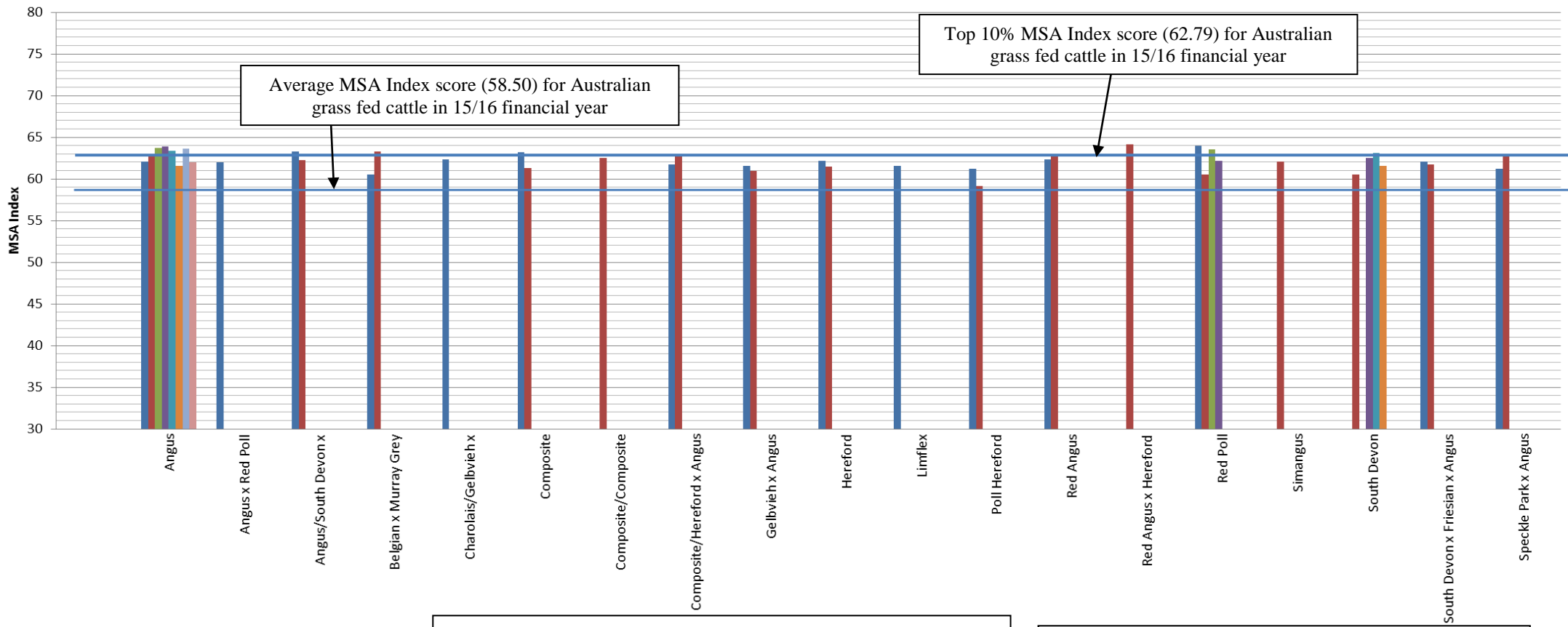
Fiona Baker

Beef Extension Officer

Department of Economic Development, Jobs, Transport and Resources, Ellinbank.

Jan 2016

# MSA Index scores of different breeds in the trial



Average MSA Index score (58.50) for Australian grass fed cattle in 15/16 financial year

Top 10% MSA Index score (62.79) for Australian grass fed cattle in 15/16 financial year

MSA Index scores for 15/16 financial year for grass fed cattle:

Top 1% 66.58 and above  
 Top 5% 63.89 and above  
 Top 10% 62.79

Congratulations to those that had steers grade in the top 10%:

- Lineham Farm x 4 Angus steers
- Langmoor Farm x 1 Composite/Hereford x Angus steer
- Hardy Farm x 1 Red Angus steer
- Winterwood x 1 South Devon steer
- Ross Farm x 1 Composite steer
- Hazelwood Angus x 1 Angus/South Devon steer
- Warragul Regional College x 1 Belgian Blue x Murray Grey
- Murray Farm x 1 Angus steer
- Fowler Farm x 1 Red Poll steer
- Riverbend x 1 Angus steer

**And a huge congratulations to those that had steers grade in the top 5%:**

- Balla Balla Red Polls x 1 Red Poll  
MSA Index 63.96  
(2<sup>nd</sup> steer of pair, MSA Index 60.51)
- Shanlee x 1 Red Angus x Hereford  
MSA Index 64.19  
(2<sup>nd</sup> steer of pair did not achieve an MSA Index due elevated pH resulting in dark cutting meat)

## Lardner Park 2016 Steer Trial – Summary of Awards

### STANDARD DOMESTIC TRADE

#### COMBINED WEIGHT GAIN & CARCASE AWARDS Standard Domestic Trade 210-285 kg Carcase Weight



Sponsored by COOPERS ANIMAL HEALTH

<i>Breeder</i>	<i>Breed</i>	<i>Points</i>
<b>1<sup>st</sup> Prize</b>		
<b>Winterwood</b> (Peter Hutchinson – Churchill)	South Devon	234.1
<b>2<sup>nd</sup> Prize</b>		
<b>Murray Farm</b> (John & Tracey Murray – Yallourn)	Angus	231.9
<b>3<sup>rd</sup> Prize</b>		
<b>Ross Farm</b> (Brad Gale – Waratah Bay)	Composite	229.3

### HIGHEST WEIGHT GAIN PAIR



Sponsored by COMMONWEALTH BANK

<i>Breeder</i>	<i>Breed</i>	<i>Pair Av. Daily gain</i>
<b>Winterwood</b> (Peter Hutchinson – Churchill)	South Devon	1.44 kg/day

### HIGHEST CARCASE SCORE AS A PAIR



Sponsored by EVANS PETROLEUM BP

<i>Breeder</i>	<i>Breed</i>	<i>Average Carcase Score</i>
<b>Hollingrove Stud</b> (Bruce and Deb Williams – Warragul)	Speckle Park x Angus	80.20

LARDNER PARK EVENTS 2016 STEER TRIAL

WEIGHT GAIN AND CARCASS POINTS - DOMESTIC (210 - 285 HSC Wt.)

Tag No.	Exhibitor	Breed	Weight Gain (kg)	Weight Gain Ratio	Weight Gain Points	Carcass Score	Carcass Score Ratio	Carcass Points	Weight + Carcass Points	Grand Total	failed specs	Place
1	Balla Balla Red	Red Poll	162.0	85.2	38.4	73.19	117.3	64.5	102.9	195.3		68.19
2	Polls		155.0	81.6	36.7	63.19	101.3	55.7	92.4			
3	Balla Balla Red	Angus x Red Poll	156.0	82.1	36.9	75.23	120.6	66.3	103.3	152.6	pH/meat colour Rib fat <3mm	46.39
4	Polls		143.0	75.2	33.9	17.55	28.1	15.5	49.3			
5	BreJayanne South	South Devon	190.0	100.0	45.0	16	25.6	14.1	59.1	168.6		41.65
6	Devons		212.0	111.6	50.2	67.3	107.9	59.3	109.5			
7	Fowler Farm	Red Poll	180.0	94.7	42.6	80.7	129.4	71.1	113.8	215.7		77.06
8			157.0	82.6	37.2	73.42	117.7	64.7	101.9			
9	Hardy Farm	Red Angus	176.0	92.6	41.7	68.98	110.6	60.8	102.5	201.5		70.25
10			152.0	80.0	36.0	71.51	114.6	63.0	99.0			
11	Hazelwood Angus	Angus/South Devon x	220.0	115.8	52.1	69.62	111.6	61.4	113.5	211.9	Heavy Carcass Heavy Carcass	62.69
12			208.0	109.5	49.3	55.75	89.4	49.1	98.4			
13	Hollingrove Stud	Speckle Park x Angus	180.0	94.7	42.6	81.58	130.8	71.9	114.5	219.3		80.20
14			149.0	78.4	35.3	78.81	126.3	69.5	104.8			
15	Johnston Farm	South DevonxAngusxFriesia	139.0	73.1	32.9	74.2	118.9	65.4	98.3	208.7		77.56
16			165.0	86.8	39.1	80.92	129.7	71.3	110.4			
17	Langmoor Farm	Composite/Composite	216.0	113.7	51.1	15.27	24.5	13.5	64.6	163.7	pH/meat colour	39.26
18			183.0	96.3	43.3	63.24	101.4	55.8	99.1			
19	Langmoor Farm	Composite/HerefordxAngus	186.0	97.9	44.0	63.07	101.1	55.6	99.6	200.5		67.91
20			155.0	81.6	36.7	72.75	116.6	64.1	100.8			
21	Lineham Farm	Angus	194.0	102.1	45.9	73.21	117.3	64.5	110.5	228.5		73.19
22			226.0	118.9	53.5	73.17	117.3	64.5	118.0			76.23
23	Lineham Farm	Angus	196.0	103.1	46.4	72.6	116.4	64.0	110.4	227.9		
24			199.0	104.7	47.1	79.86	128.0	70.4	117.5			
25	Murray Farm	Angus	190.0	100.0	45.0	72.48	116.2	63.9	108.9	231.9		76.49
26			220.0	115.8	52.1	80.49	129.0	71.0	123.1			2
27	Riverbanks	Gelbvieh x Angus x	166.0	87.4	39.3	74.62	119.6	65.8	105.1	211.6		74.21
28			175.0	92.1	41.4	73.8	118.3	65.1	106.5			
29	Riverbanks	Charolais/Gelbvieh x	197.0	103.7	46.6	75	120.2	66.1	112.8	170.2	Rib fat <3mm	49.50
30			183.0	80.5	36.2	24	38.5	21.2	57.4			
31	Riverbend	Angus	185.0	97.3	43.8	71.36	114.4	62.9	106.7	215.6		72.19
32			188.0	98.9	44.5	73.02	117.0	64.4	108.9			
33	Ross Farm	Composite	207.0	108.9	49.0	75.34	120.8	66.4	115.4	229.3		73.90
34			211.0	111.0	50.0	72.46	116.1	63.9	113.8			
35	Shanlee	Hereford	212.0	111.6	50.2	71.54	114.7	63.1	113.3	218.2		72.20
36			172.0	90.5	40.7	72.85	116.8	64.2	105.0			
37	Shanlee	Red Angus x Hereford	189.0	99.5	44.8	26.91	43.1	23.7	68.5	181.4	pH/meat colour	52.78
38			184.0	96.8	43.6	78.64	126.1	69.3	112.9			
39	Tarwin Poll	Poll Hereford	218.0	114.7	51.6	66.44	106.5	58.6	110.2	215.6		65.07
40	Herefords		208.0	109.5	49.3	63.7	102.1	56.2	105.4			
41	The Bend South	South Devon	239.0	125.8	56.6	8	12.8	7.1	63.6	139.9	Heavy Carcass, pH/meat colour Heavy Carcass	11.55
42	Devons		266.0	140.0	63.0	15.1	24.2	13.3	76.3		Rib fat <3mm	42.34
43	Three Oaks	Simangus	208.0	109.5	49.3	17.8	28.6	15.7	65.0	180.0		46.89
44			237	124.7	56.1	66.86	107.2	58.9	115.1			
45	Three Oaks	Limflex	213	112.1	50.4	66.18	106.1	58.3	108.8	179.0	pH/meat colour	69.67
46			194	102.1	45.9	27.59	44.2	24.3	70.3			
47	Warragul Regional College	Belgian Blue x Murray Grey	174	91.6	41.2	63.51	101.8	56.0	97.2	198.9		
48			147	77.4	34.8	75.83	121.5	66.9	101.7			
49	Winterwood	South Devon	228	120.0	54.0	71.73	115.0	63.2	117.2	234.1		72.34
50			222	116.8	52.6	72.95	116.9	64.3	116.9			
			190.0	100.0	45.0	62.4	100.0	55.00				