TACE

TransTasman Angus Cattle Evaluation

MSA Marbling

RESEARCH BREEDING VALUES

MID JUNE 2024

BACKGROUND

Angus Australia has partnered with the Animal Genetics and Breeding Unit (AGBU) and the Agricultural Business Research Institute (ABRI) to undertake research into the genetics Meat Standards Australia (MSA) Marbling Score in Australian Angus Cattle.

MSA Marbling Score, being the subjective visual assessment of intramuscular fat at the chilled carcase grading site, has been identified as a trait of importance, particularly as it is related to Angus carcase value and consumer eating experience. It is also the commercially recognised method for describing marbling in the national grading system, MSA.

As a result of this collaborative research, MSA Marbling Score RBVs are now routinely analyzed every two weeks in the TransTasman Angus Cattle Evaluation (TACE). To underpin this analysis, MSA marbling scores are utilised from both member collected data and from progeny in the Angus Sire Benchmarking Program. Angus animals, mostly steers, that are MSA graded between 300 and 1000 days of age at slaughter are included in the analysis.

MSA Marbling scores are collected using the industry standard 100 – 1100 scoring system (with increments of 10 score unit). A score of 100 indicates no/minimal marbling and a score of 1100 indicates abundant marbling. Along with the amount of marbling, the scores also take into account distribution and size of fleck (i.e. coarse or fine marbling).
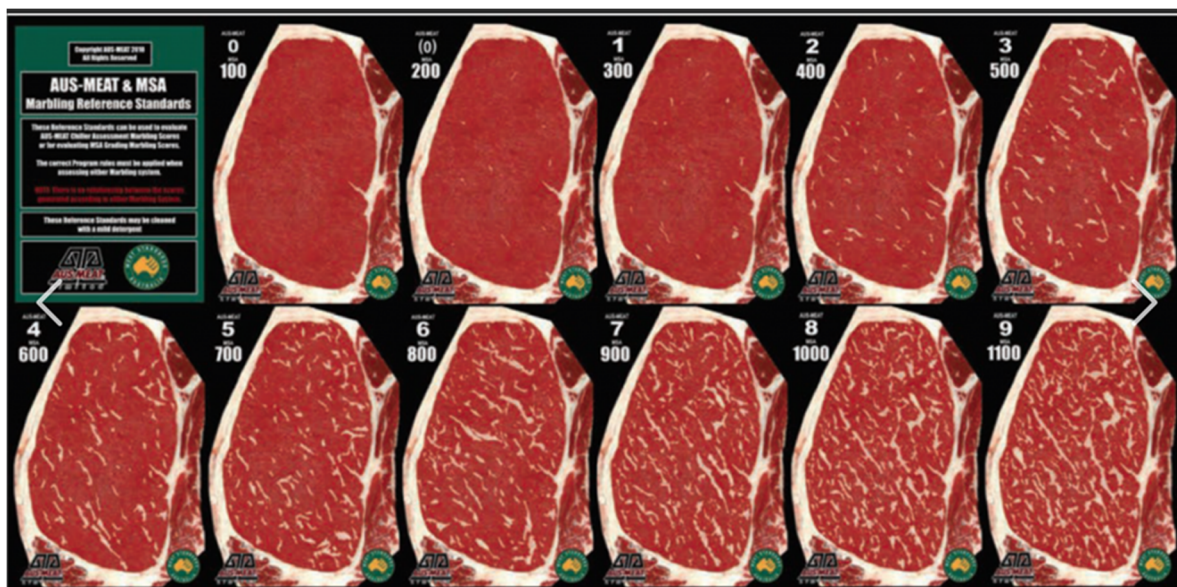
Study of the Angus Australia data by AGBU has demonstrated that a significant portion of the differences in the MSA marbling score of individual animals can be attributed to genetics, having a high **heritability of 0.54**. The study also estimated the genetic correlation between MSA marbling score and a wide range of production traits included in the multi-trait analysis model utilized in TACE (from the BREEDPLAN program). As expected, the genetic correlations with carcase IMF, bull ultrasound scan IMF and heifer ultrasound scan IMF had the strongest relationship of 0.80, 0.35 and 0.35 respectively.

From this collaborative research it is now possible to generate breeding values for MSA Marbling Score and select animals for use within Angus breeding programs with desirable genetics for this trait. This is underpinned by a large and growing reference population of MSA Marbling Scores (n>10,000 as of May 2023), coupled with genomic and pedigree data.

UNDERSTANDING THE RESEARCH BREEDING VALUES

MSA Marbling Research Breeding Values (RBVs) are provided in this publication for sires with (i) at least 50% accuracy for their MSA Marbling RBV, and (ii) one or more progeny born in the last two years.

MSA Marbling Score (MMS) RBVs are estimates of genetic differences between animals in MSA marbling score at the 12/13th rib grading site in a 400 kg steer carcase.

MMS RBVs are calculated from MSA marbling scores (taken by a trained/accredited carcase grader), pedigree, genomics and correlated traits (e.g. Carcase IMF, bull and heifer ultrasound scan IMF). MMS EBVs are expressed in MSA marbling score units.

Higher, more positive MMS RBVs indicate the animal is expected to produce progeny with higher marbling scores in a 400 kg steer carcase.

USING THE RESEARCH BREEDING VALUES IN SELECTION

The Research Breeding Values in this publication enable Angus breeders to select animals with desirable genetics for MSA marbling score, balanced with selection for other traits of importance within their breeding objective.

It is important to note that the Research Breeding Values are subject to greater potential change than EBVs routinely reported as part of the TransTasman Angus Cattle Evaluation (TACE) and should be used with caution in animal selection decisions.

Research Breeding Values may change as improvements are made to the analytical models that are used, and as additional performance information is collected.

ACKNOWLEDGEMENTS

DISCLAIMER

Angus Australia - MSA Marbling Research Breeding Values

Ident / Sire / Dam	Name / Reg.	MSA MBL RBV	Calv-Ease Dir	Dtrs	Birth GL	BW	Growth 200	400	600	Maternal MCW	Milk	Fert SS	DC	Carcase CW	EMA	Rib	P8	RBY	IMF	Feed NFI-F	Temp Doc	Structural Claw	Angle	Leg	Selection Index $A	$A-L
USA15719841	A A R TEN X 7008 S A ᔆⱽ	+87	+4.0	+7.0	-4.5	+2.8	+59	+106	+137	+108	+19	+2.2	-3.2	+77	+5.8	-3.3	-6.8	+0.9	+2.4	-0.09	+12	+1.44	+1.02	+0.80	$214	$370
USA13880818	HBR	94%	96%	90%	99%	98%	98%	98%	98%	97%	98%	98%	84%	96%	95%	95%	95%	94%	95%	89%	97%	99%	99%	94%		
USA15151449		39	34	12	48	24	16	15	16	40	36	47	81	22	56	97	99	25	44	19	82	99	61	4	38	33
NXOL172	AJC L172 ᔆⱽ	+67	+6.7	+8.0	-6.1	+3.1	+59	+102	+139	+132	+14	+2.3	-4.8	+71	+6.7	-0.7	+0.3	+0.3	+1.1	-0.99	+23	+1.40	+1.28	+1.18	$216	$404
NXOF43	APR	90%	76%	61%	94%	96%	94%	94%	94%	88%	87%	83%	55%	91%	89%	84%	89%	82%	91%	83%	85%	85%	85%	81%		
NXOJ432		55	13	6	24	30	15	22	13	12	75	43	45	38	45	63	38	60	79	1	40	99	96	89	35	12
NXOL99	AJC L99 ᴾⱽ	+84	+5.5	+0.6	-5.4	+4.8	+61	+109	+145	+112	+21	+3.3	-6.8	+96	+8.6	-2.0	+0.9	+0.4	+2.4	-0.33	+16	+1.18	+1.04	+0.92	$269	$443
USA16073564	APR	92%	84%	74%	96%	97%	96%	96%	96%	92%	93%	91%	62%	93%	91%	90%	91%	81%	92%	86%	90%	91%	91%	87%		
NXOJ112		41	21	75	34	68	10	10	8	34	19	15	10	2	24	87	28	54	44	7	68	96	66	18	2	2
ARRR11	ALKIRA RENEGADE R11 ᴾⱽ	+58	+7.4	+6.5	-4.5	+2.2	+46	+98	+132	+112	+25	+2.3	-7.0	+62	+8.0	+1.3	+0.3	+0.2	+2.0	+0.06	+1	+0.74	+0.70	+0.90	$220	$401
CAN2043806	HBR	69%	65%	54%	95%	93%	90%	85%	85%	81%	74%	80%	40%	75%	69%	70%	70%	61%	74%	60%	86%	67%	67%	59%		
QMUN24		62	9	16	48	15	74	33	24	34	6	43	9	65	30	20	38	66	55	33	99	28	4	14	30	13
DGJG10	ALLOURA GET CRACKING G10 ᔆⱽ	+182	+8.1	+7.4	-3.0	+2.5	+43	+75	+86	+85	+12	-0.3	-8.2	+46	+14.0	+1.6	+0.5	+1.0	+5.2	+0.42	+6	+0.52	+1.02	+0.92	$270	$429
VTMB1	HBR	93%	94%	85%	99%	99%	98%	98%	98%	98%	97%	97%	77%	96%	94%	94%	94%	91%	93%	89%	97%	96%	96%	94%		
DGJZ15		3	6	9	72	20	82	91	96	76	84	99	3	94	2	16	35	20	4	72	95	4	61	18	2	4
DGJL94	ALLOURA LOCK STOCK &	+89	+5.8	+1.0	-4.1	+2.7	+56	+94	+124	+124	+13	+1.0	-4.4	+64	+0.5	+1.7	-1.6	+0.2	+2.3	-0.41	+25	+0.84	+0.90	+0.92	$190	$352
USA15832750	HBR	86%	79%	71%	93%	95%	94%	94%	94%	91%	87%	87%	53%	89%	84%	80%	85%	77%	87%	78%	93%	84%	82%	77%		
DGJH24		38	19	72	55	23	25	43	39	19	82	86	55	61	97	15	71	66	47	4	31	49	32	18	65	48
DGJQ30	ALLOURA QUINELLA Q30 ᔆⱽ	+156	+2.5	+2.1	+0.4	+3.0	+54	+100	+117	+119	+14	+3.2	-7.5	+73	+13.8	+0.7	+0.9	+1.1	+4.4	+0.37	+16	+0.94	+1.04	+1.16	$273	$452
WWEL3	HBR	77%	73%	65%	94%	93%	91%	90%	91%	86%	78%	81%	56%	80%	79%	80%	80%	74%	81%	81%	88%	83%	83%	78%		
DGJK117		7	49	61	97	28	35	27	53	24	70	17	5	32	2	31	28	16	9	67	69	69	66	85	2	2
CGKR232	ALPINE RONALDO R232 ᴾⱽ	+96	+6.3	+5.9	-5.1	+1.8	+51	+94	+133	+114	+25	+3.2	-5.2	+76	+11.1	-3.2	-3.0	+0.8	+3.1	+0.41	+25	+0.62	+0.68	+0.98	$223	$393
NORN542	HBR	72%	72%	60%	94%	91%	90%	86%	85%	83%	77%	81%	47%	76%	72%	72%	73%	64%	76%	65%	87%	71%	72%	70%		
CGKM152		33	16	20	39	11	50	43	21	31	6	17	36	25	8	96	88	30	28	71	33	11	3	34	28	17
WJMM117	ARDCAIRNIE M117 ᔆⱽ	+34	+5.2	-0.4	-5.7	+3.8	+56	+99	+130	+141	+3	+3.0	-3.6	+76	+10.3	-0.8	-1.8	+1.5	+0.4	+0.04	+12	+0.86	+1.00	+0.92	$188	$364
WJMF96	HBR	83%	77%	65%	93%	96%	94%	94%	94%	89%	86%	90%	57%	86%	85%	85%	85%	78%	86%	76%	83%	81%	81%	77%		
WJMG78		80	24	82	30	45	27	28	26	7	99	21	74	26	12	65	74	6	91	31	84	53	57	18	66	38
NAQA241	ARDROSSAN EQUATOR A241 ᴾⱽ	+22	-1.9	+2.8	-4.5	+4.1	+50	+92	+122	+109	+20	+3.2	-8.2	+87	+8.4	-2.2	-0.3	+1.4	+1.2	+0.71	+25	+0.48	+0.86	+1.00	$224	$379
USA2928	HBR	98%	99%	98%	99%	99%	99%	99%	99%	99%	99%	99%	95%	98%	98%	98%	98%	98%	98%	96%	99%	99%	99%	99%		
NAQW38		87	81	54	48	52	56	51	43	39	25	17	3	7	26	89	49	8	77	91	31	3	23	40	26	26
NAQN329	ARDROSSAN HOLBROOK N329	+63	-2.4	+0.6	-2.9	+2.7	+46	+86	+109	+76	+23	+2.7	-7.3	+70	+5.1	+2.3	+2.4	-0.8	+4.0	+1.08	+14	+0.80	+0.98	+0.92	$212	$337
NAQH318	HBR	89%	77%	67%	96%	95%	95%	95%	94%	89%	89%	85%	57%	90%	89%	89%	89%	81%	91%	83%	90%	81%	87%	83%		
NAQK30		58	83	75	73	23	73	68	71	85	13	29	6	42	65	9	12	97	13	99	76	40	52	18	40	60
NAQH255	ARDROSSAN HONOUR H255 ᴾⱽ	+41	-1.9	-0.9	-2.8	+4.6	+43	+75	+97	+96	+13	+2.2	-5.6	+61	+5.6	+0.8	-1.2	+0.6	+2.1	+1.01	+9	+0.46	+1.02	+1.24	$159	$283
NORE11	HBR	95%	96%	89%	99%	99%	98%	98%	98%	98%	98%	98%	84%	96%	96%	96%	96%	95%	96%	92%	98%	97%	97%	96%		
NAQD17		75	81	84	75	64	82	91	88	59	82	47	27	69	59	29	65	41	52	98	90	2	61	95	88	89
NAQQ67	ARDROSSAN NECTAR Q67 ᴾⱽ	+89	+3.6	+4.2	-8.9	+3.7	+56	+101	+131	+123	+13	+3.0	-6.5	+57	+7.3	+0.5	-0.5	+0.1	+3.2	+0.12	+36	+0.36	+0.86	+1.06	$232	$410
NMMN334	HBR	75%	77%	63%	93%	95%	93%	91%	93%	86%	80%	82%	50%	80%	80%	80%	80%	74%	81%	80%	90%	77%	81%	76%		
NAQL96		38	38	38	4	43	28	24	24	20	81	21	13	79	38	35	52	72	26	39	6	1	23	60	19	10
	Breed Average EBVs	+75.	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.84	+0.97	+1.02	+200	+345

Angus Australia -   MSA Marbling Research Breeding Values

Ident / Sire / Dam	Name / Reg.	MSA MBL RBV	Calv-Ease Dir	Dtrs	Birth GL	BW	Growth 200	400	600	Maternal MCW	Milk	Fert SS	DC	Carcase CW	EMA	Rib	P8	RBY	IMF	Feed NFI-F	Temp Doc	Structural Claw	Angle	Leg	Selection Index $A	$A-L
QQFH147	ASCOT HALLMARK H147 PV	+112	-2.9	+2.1	-5.0	+7.2	+60	+110	+151	+133	+15	+3.7	-5.5	+80	-2.1	+0.7	-0.1	-0.8	+3.1	+0.27	+18	+0.46	+0.84	+1.02	$195	$359
VTME343	HBR	94%	95%	87%	99%	99%	98%	98%	98%	97%	98%	98%	79%	96%	95%	95%	95%	94%	95%	89%	97%	95%	95%	93%		
NMMF123		23	85	61	40	96	13	9	5	11	68	9	29	17	99	31	45	97	28	56	60	2	20	47	60	42
HIOE7	AYRVALE BARTEL E7 PV	+130	+8.5	+9.2	-4.4	+1.8	+49	+86	+113	+74	+26	+2.6	-8.4	+64	+7.6	-0.7	+0.5	+1.3	+3.4	+0.30	+5	+1.04	+1.00	+1.12	$289	$448
VTMB219	HBR	97%	99%	97%	99%	99%	99%	99%	99%	99%	99%	99%	93%	98%	98%	98%	98%	98%	98%	96%	99%	99%	99%	99%		
BVVB32		15	5	3	50	11	59	67	64	87	5	32	2	60	34	63	35	10	22	60	96	85	57	77	1	2
NBBN47	BALD BLAIR NELSON N47 PV	+5	+2.9	-2.7	-5.0	+4.3	+56	+105	+153	+160	+13	+0.9	-4.4	+84	+4.1	-1.1	-0.9	+0.9	+0.6	-0.21	+29	+0.96	+1.10	+1.22	$178	$361
HIOG18	HBR	87%	78%	67%	95%	95%	93%	93%	93%	90%	85%	90%	62%	88%	87%	87%	88%	80%	89%	82%	90%	86%	86%	82%		
NBBL83		93	45	92	40	57	26	16	4	2	79	88	55	11	76	71	60	25	88	11	19	73	78	93	75	41
NBB21S86	BALD BLAIR STIRLING S86 PV	+100	+6.1	+8.7	-4.5	+2.6	+64	+110	+146	+117	+20	+3.8	-4.5	+92	+6.1	-2.0	-2.9	+0.1	+3.7	-0.21	+6	+0.72	+0.68	+1.06	$250	$430
NMMP15	HBR	71%	74%	62%	94%	94%	92%	86%	86%	83%	77%	81%	44%	77%	71%	72%	73%	65%	75%	63%	90%	71%	71%	68%		
NBBQ25		30	17	4	48	21	6	8	8	27	24	8	53	4	52	87	88	72	17	11	95	24	3	60	8	4
ECMK63	BANNABY REALITY K63 PV	+12	+4.0	-0.7	-2.7	+3.8	+43	+76	+99	+99	+13	+2.0	-0.7	+52	+5.2	-1.3	-1.5	+0.5	+1.3	-0.21	+27	+0.52	+1.00	+1.24	$118	$238
NZE14647008839	HBR	90%	80%	70%	96%	96%	94%	94%	94%	90%	84%	90%	62%	91%	89%	89%	90%	85%	91%	85%	91%	89%	89%	85%		
ECMH45		91	34	83	76	45	82	89	86	54	80	54	98	88	63	75	70	48	74	11	23	4	57	95	99	97
VONN462	BANQUET NUTTELLA N462 PV	-9	-1.9	+3.2	-4.6	+6.7	+56	+103	+138	+109	+25	+3.5	-4.1	+71	+2.7	+0.4	-1.1	+0.0	+0.8	-0.25	+54	+0.58	+0.90	+0.78	$176	$317
VONJ507	HBR	76%	78%	62%	96%	97%	96%	96%	95%	88%	82%	93%	49%	82%	82%	82%	82%	76%	82%	76%	94%	76%	76%	70%		
VONK224		97	81	50	47	94	26	19	15	39	6	12	63	38	88	37	63	76	85	10	1	7	32	3	77	73
NBNN239	BEN NEVIS NEWSFLASH N239 PV	+33	-1.7	+2.2	-4.6	+4.9	+58	+100	+134	+114	+18	+0.9	-2.8	+85	+5.3	-2.5	-0.5	+0.5	+1.3	+0.25	+9	+1.00	+1.02	+0.92	$189	$328
USA16956101	HBR	89%	83%	72%	97%	97%	96%	96%	97%	93%	89%	93%	60%	91%	90%	90%	90%	83%	92%	83%	91%	92%	92%	89%		
NBNH215		80	80	60	47	70	18	27	21	30	38	88	87	10	62	92	52	48	74	54	89	79	61	18	65	67
NBNP122	BEN NEVIS PRIME P122 PV	+164	+3.7	+5.3	-0.1	+2.5	+57	+88	+113	+81	+12	+3.1	-4.1	+60	+4.7	+0.6	+1.6	-0.5	+4.8	+0.52	+22	+0.74	+0.76	+0.98	$237	$375
USA17960722	HBR	76%	76%	66%	93%	95%	92%	92%	93%	87%	79%	87%	56%	80%	80%	80%	80%	74%	81%	68%	84%	87%	86%	82%		
NBNM115		5	37	26	96	20	24	62	62	81	85	19	63	70	70	33	19	92	6	80	42	28	9	34	15	30
NBNR138	BEN NEVIS RONAN R138 PV	+21	+4.9	+5.8	-8.8	+3.5	+74	+124	+151	+142	+12	+2.4	-3.9	+82	+7.9	-2.2	-2.5	+0.6	+1.0	-0.04	+23	+0.74	+0.84	+0.88	$248	$442
USA17960722	HBR	73%	75%	65%	87%	89%	89%	88%	88%	84%	78%	81%	52%	78%	73%	73%	74%	67%	77%	67%	82%	84%	85%	81%		
NBNP153		87	26	21	5	38	1	2	5	6	87	39	67	14	31	89	84	41	81	23	37	28	20	11	9	2
NGXQ227	BONGONGO BE QUICK Q227 PV	+184	+3.2	+1.5	-4.6	+3.1	+50	+91	+112	+63	+23	+3.9	-5.9	+52	+11.5	+0.8	+3.8	+0.0	+5.4	+1.13	+19	+0.66	+1.06	+1.08	$276	$409
VLYM518	HBR	76%	72%	64%	96%	95%	93%	92%	91%	86%	78%	84%	55%	80%	81%	81%	81%	75%	81%	81%	87%	83%	83%	80%		
NGXN221		3	42	67	47	30	56	51	64	94	10	7	22	87	7	29	5	76	3	99	55	15	70	66	2	10
NGXP212	BONGONGO P212 SV	+169	+5.2	+9.6	-6.7	+2.2	+46	+86	+102	+81	+23	+3.9	-8.4	+54	+3.8	+3.4	+5.8	-1.0	+4.7	+0.91	+12	+0.82	+0.86	+1.00	$250	$414
NORL508	HBR	87%	70%	62%	96%	96%	94%	94%	93%	90%	81%	87%	60%	88%	88%	88%	88%	80%	90%	81%	86%	84%	84%	80%		
NGXL13		4	24	2	18	15	73	69	83	81	13	7	2	84	79	3	1	98	6	97	81	45	23	40	8	8
NGXP421	BONGONGO P421 SV	+95	+9.4	+5.8	-5.9	+1.8	+59	+99	+128	+87	+22	+2.5	-6.5	+74	+10.9	+3.6	+2.8	-0.1	+3.0	+0.72	+16	+1.12	+1.06	+1.10	$278	$441
USA18229425	APR	87%	70%	61%	93%	92%	91%	91%	90%	87%	79%	84%	54%	88%	87%	86%	87%	78%	89%	81%	84%	79%	78%	74%		
NGXM413		34	2	21	27	11	17	29	30	73	15	36	13	31	9	3	9	81	30	91	71	92	70	72	1	3
NUIF32	BONNY BROOKE FALCO F32 SV	+22	-5.7	-8.9	+0.1	+6.5	+49	+75	+97	+90	+16	-1.1	-2.4	+59	-2.3	+2.4	+2.1	-0.9	+1.5	-0.28	+19	+0.96	+0.92	+1.06	$107	$192
NGMC196	HBR	82%	67%	54%	91%	89%	91%	89%	91%	84%	78%	76%	51%	84%	82%	82%	83%	73%	82%	73%	81%	79%	79%	74%		
NUID96		87	93	99	96	92	60	91	89	69	57	99	91	73	99	8	14	98	69	8	58	73	37	60	99	99
Breed Average EBVs		**+75.**	**+1.7**	**+2.7**	**-4.4**	**+4.0**	**+51**	**+92**	**+119**	**+102**	**+17**	**+2.2**	**-4.6**	**+67**	**+6.4**	**-0.1**	**-0.3**	**+0.5**	**+2.3**	**+0.22**	**+21**	**+0.84**	**+0.97**	**+1.02**	**+200**	**+345**

Angus Australia - MSA Marbling Research Breeding Values

Ident / Sire / Dam	Name / Reg.	MSA MBL RBV	Calv-Ease Dir	Dtrs	Birth GL	BW	Growth 200	400	600	Maternal MCW	Milk	Fert SS	DC	Carcase CW	EMA	Rib	P8	RBY	IMF	Feed NFI-F	Temp Doc	Structural Claw	Angle	Leg	Selection Index $A	$A-L
HCAG013	**BOONAROO GRAVITY G013** PV	+121	+5.4	+4.0	-5.4	+3.6	+51	+88	+115	+102	+23	+3.8	-5.6	+56	+4.5	-2.9	-3.3	+1.3	+3.0	-0.75	+21	+0.50	+0.92	+1.06	$219	$373
VTMA217	HBR	90%	90%	83%	98%	98%	97%	97%	97%	94%	95%	97%	72%	93%	92%	92%	92%	88%	91%	85%	94%	94%	94%	91%		
VTMZ618		18	22	41	34	41	49	63	59	50	13	8	27	79	72	95	91	10	30	1	45	3	37	60	32	31
HCAN20	**BOONAROO KASBAH N20** SV	+65	+4.5	+2.8	-5.4	+5.4	+47	+88	+113	+107	+16	+3.7	-6.1	+56	+5.6	-0.4	-1.4	+0.9	+1.9	+0.70	+15	+0.86	+1.02	+1.08	$198	$356
VTMK338	HBR	89%	75%	61%	93%	96%	94%	94%	90%	87%	80%	89%	54%	90%	88%	88%	89%	79%	91%	83%	93%	91%	91%	85%		
HCAL54		56	30	54	34	79	68	61	63	42	60	9	19	81	59	55	68	25	58	91	72	53	61	66	57	45
NGMN418	**BOOROOMOOKA JACKPOT N418**	+81	+2.3	+7.0	-8.8	+5.3	+61	+109	+134	+130	+7	+3.4	-6.5	+79	+8.9	-0.6	+0.0	+0.9	+2.4	+0.27	+29	+1.34	+1.08	+1.04	$258	$446
WWEL3	HBR	85%	71%	65%	95%	96%	95%	95%	95%	93%	88%	94%	61%	88%	86%	86%	87%	80%	88%	80%	95%	92%	92%	85%		
NGML471		43	51	12	5	78	11	11	20	14	98	13	13	19	22	60	43	25	44	56	18	99	74	53	5	2
NGMN213	**BOOROOMOOKA NORMANDY**	+115	+11.2	+10.6	-7.4	+1.2	+40	+71	+100	+72	+23	+3.2	-9.4	+50	+3.8	-2.6	-3.0	+0.9	+3.2	+0.96	+32	+0.76	+0.64	+1.04	$231	$385
NGML201	HBR	87%	77%	64%	94%	96%	95%	95%	95%	93%	88%	93%	54%	89%	87%	87%	87%	78%	89%	79%	95%	92%	92%	85%		
NGML45		22	1	1	12	6	91	95	86	89	11	17	1	90	79	93	88	25	26	98	12	32	2	53	20	22
NGMP96	**BOOROOMOOKA PARAGON P96**	+60	-3.6	+2.3	-7.5	+3.7	+62	+120	+161	+129	+31	+3.4	-7.9	+109	+13.2	-2.6	-1.4	+1.8	+1.8	+0.86	+33	+0.88	+1.02	+1.14	$283	$460
WWEL3	HBR	90%	81%	72%	98%	98%	98%	97%	97%	95%	89%	96%	62%	92%	91%	90%	91%	82%	92%	86%	98%	96%	95%	92%		
NGMM566		60	88	59	11	43	10	3	2	14	1	13	4	1	3	93	68	3	61	96	10	57	61	81	1	1
NGMP22	**BOOROOMOOKA PRESIDENT**	+64	-0.7	+3.7	-6.3	+4.8	+58	+106	+143	+129	+22	+2.8	-6.1	+75	+5.7	+0.0	+0.5	+0.3	+2.5	+0.56	+18	+0.42	+0.62	+0.84	$227	$398
NGMK9	HBR	89%	76%	64%	97%	96%	95%	95%	95%	91%	83%	88%	58%	91%	89%	88%	89%	80%	91%	83%	94%	86%	86%	81%		
NGMK640		57	74	44	22	68	20	14	10	15	15	26	19	27	57	46	35	60	42	83	59	1	2	7	24	15
NGMQ5	**BOOROOMOOKA QUALITY Q5** SV	+188	+3.5	+7.4	-6.4	+3.7	+56	+104	+145	+137	+18	+2.3	-4.7	+79	-3.1	+1.0	+2.2	-1.8	+6.0	+0.07	+35	+0.82	+0.92	+1.10	$208	$392
NORL519	HBR	76%	76%	67%	92%	90%	89%	87%	88%	85%	79%	81%	56%	79%	78%	79%	79%	73%	80%	80%	86%	83%	83%	79%		
NGMK720		2	39	9	21	43	28	17	9	9	41	43	48	19	99	25	13	99	2	34	8	45	37	72	45	18
NGMR49	**BOOROOMOOKA RAUDONIKIS**	+39	+2.9	+4.8	-5.4	+3.6	+62	+103	+128	+96	+20	+3.8	-2.4	+72	+11.0	-0.6	-1.9	+1.3	+0.9	+0.20	+30	+0.90	+0.80	+0.90	$228	$371
USA17960722	HBR	73%	71%	63%	92%	93%	91%	88%	87%	84%	77%	83%	51%	78%	72%	73%	74%	66%	76%	66%	88%	76%	76%	72%		
NGMP361		76	45	31	34	41	8	20	30	59	28	8	91	36	9	60	76	10	83	48	16	61	14	14	23	32
BOWK2	**BOWMAN AUSTRALIA K2** PV	+62	+7.2	+3.1	-6.4	+3.6	+49	+97	+122	+96	+22	+5.0	-8.1	+69	+7.9	-0.2	-1.7	+1.0	+1.3	-0.64	+14	+0.86	+1.02	+0.98	$234	$403
VTME343	HBR	88%	80%	75%	94%	91%	91%	91%	91%	87%	86%	84%	68%	88%	88%	87%	88%	83%	90%	83%	88%	84%	85%	81%		
NAQZ31		59	10	51	21	41	60	33	42	60	14	2	3	46	31	51	73	20	74	2	77	53	61	34	18	12
SRKK306	**BOWMONT KING K306** PV	+157	-1.8	-9.0	-4.8	+4.5	+49	+78	+103	+89	+2	-0.4	-5.0	+64	+15.1	-0.4	-2.0	+1.7	+4.7	+0.49	+25	+0.54	+0.92	+0.70	$234	$347
NJWG279	HBR	92%	87%	79%	97%	98%	97%	97%	97%	95%	94%	96%	69%	93%	93%	92%	93%	90%	93%	87%	96%	92%	92%	90%		
TFAD58		6	80	99	43	62	60	86	81	71	99	99	40	59	1	55	77	4	6	78	31	5	37	1	17	52
BON21S004	**BRIDGEWATER HOMETOWN**	+71	+9.2	+7.8	-9.3	+1.1	+60	+99	+129	+94	+17	+2.9	-7.3	+83	+8.4	+1.6	+0.1	-0.1	+2.8	+0.40	+37	+1.38	+1.10	+0.90	$269	$441
USA19266718	HBR	71%	69%	60%	91%	89%	88%	85%	85%	82%	76%	80%	44%	75%	71%	71%	72%	64%	75%	63%	85%	71%	71%	68%		
BONQ008		52	3	7	3	6	15	29	28	63	51	24	6	12	26	16	41	81	34	70	6	99	78	14	3	2
BONQ007	**BRIDGEWATER QUANTUM Q007**	+45	-2.2	-4.0	-5.2	+5.5	+64	+100	+132	+106	+21	+0.5	-5.4	+86	+6.8	+0.0	-1.7	+0.2	+2.1	+0.15	+22	+1.02	+0.84	+1.04	$222	$355
QMUM13	HBR	90%	69%	63%	93%	93%	91%	91%	92%	86%	79%	86%	57%	90%	89%	88%	89%	79%	91%	84%	86%	79%	80%	77%		
HIOL28		72	82	95	37	81	7	27	24	43	22	94	31	9	43	46	73	66	52	43	45	82	20	53	29	45
GTNM6	**CHILTERN PARK MOE M6** PV	+23	+5.0	+4.5	-1.3	+3.1	+50	+99	+133	+79	+29	+1.5	-6.3	+79	+5.3	-0.6	+0.9	+0.1	+1.9	+0.26	+37	+0.70	+1.04	+1.08	$243	$389
VTMF734	HBR	91%	91%	80%	99%	99%	99%	99%	99%	97%	96%	98%	68%	95%	93%	93%	93%	88%	93%	85%	99%	99%	99%	98%		
VSNF15		86	25	35	90	30	53	30	22	83	2	72	16	19	62	60	28	72	58	55	5	21	66	66	12	19
	Breed Average EBVs	+75.	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.84	+0.97	+1.02	+200	+345

Angus Australia -   MSA Marbling Research Breeding Values

Ident / Sire / Dam	Name / Reg.	MSA MBL RBV	Calv-Ease Dir	Dtrs	Birth GL	BW	Growth 200	400	600	Maternal MCW	Milk	Fert SS	DC	Carcase CW	EMA	Rib	P8	RBY	IMF	Feed NFI-F	Temp Doc	Structural Claw	Angle	Leg	Selection Index $A	$A-L
GTNP9 / HKFJ5 / GTNK26	CHILTERN PARK PICASSO P9 PV / HBR	+116	+8.0	+8.2	-3.3	+1.4	+55	+104	+135	+94	+25	+3.6	-7.6	+94	+6.7	-0.9	+0.8	-0.4	+4.2	-0.70	+29	+0.66	+0.70	+0.88	$274	$453
		85%	79%	68%	98%	98%	96%	96%	95%	90%	82%	93%	62%	88%	86%	86%	87%	80%	88%	77%	93%	90%	91%	85%		
		21	6	6	68	8	29	19	18	63	7	10	5	3	45	67	30	90	11	91	18	15	4	11	2	2
GTNQ322 / USA18636106 / GTNL198	CHILTERN PARK QUADRANT / HBR	+114	+6.3	+3.3	-2.6	+3.2	+62	+116	+145	+107	+19	+4.4	-5.5	+85	+11.5	-0.5	-0.7	+0.2	+4.2	+0.99	+6	+1.16	+1.14	+1.00	$282	$460
		75%	79%	65%	97%	97%	93%	95%	93%	87%	78%	83%	50%	81%	79%	80%	79%	73%	80%	81%	87%	82%	82%	78%		
		22	16	48	77	32	10	4	9	41	30	4	29	10	7	58	56	66	11	98	95	95	84	40	1	1
QMUM13 / USA16295688 / QMUG1	CLUNES CROSSING DUSTY M13 / HBR	+53	+1.0	+3.9	-7.0	+5.3	+64	+101	+119	+63	+15	+1.0	-6.8	+71	+12.9	-2.6	-3.3	+1.2	+1.8	+0.21	+10	+0.90	+0.88	+1.00	$292	$421
		93%	85%	81%	99%	99%	98%	98%	98%	97%	97%	98%	75%	95%	94%	94%	95%	91%	94%	87%	98%	98%	98%	96%		
		66	62	42	15	78	6	24	49	94	62	86	10	38	4	93	91	13	61	49	89	61	28	40	1	6
NBHK330 / NJWG279 / NBHH381	CLUNIE RANGE KALUHA K330 PV / HBR	+92	-1.1	-11.7	-4.9	+5.6	+55	+97	+127	+101	+15	+1.6	-7.0	+92	+9.5	+0.0	-1.3	+1.2	+2.9	+0.26	+5	+0.68	+0.94	+1.16	$242	$375
		91%	84%	74%	97%	97%	96%	96%	96%	93%	90%	96%	67%	92%	91%	91%	92%	90%	93%	86%	94%	88%	88%	85%		
		36	76	99	42	82	31	36	33	52	69	69	9	4	17	46	67	13	32	55	95	18	41	85	12	30
NBHL348 / NZE14647008839 / AHWJ81	CLUNIE RANGE LEGEND L348 PV / HBR	+80	-6.6	+4.6	-7.8	+5.8	+57	+103	+125	+153	+0	+2.9	-6.9	+61	+0.1	+3.6	+1.2	-0.8	+2.4	+0.05	+24	+0.52	+0.80	+1.24	$163	$338
		92%	95%	87%	99%	99%	98%	98%	98%	98%	97%	98%	78%	95%	94%	94%	94%	92%	94%	87%	97%	97%	97%	96%		
		45	95	34	9	85	21	20	37	3	99	24	9	67	97	3	24	97	44	32	35	4	14	95	85	59
NBHP392 / USA17960722 / NBHM516	CLUNIE RANGE PLANTATION / HBR	+125	+4.0	+3.2	-5.2	+4.2	+67	+116	+141	+106	+21	+5.4	-3.9	+70	-1.1	-0.2	-0.8	-1.5	+3.8	+0.24	+24	+0.70	+0.86	+0.90	$219	$381
		87%	86%	73%	99%	99%	98%	98%	98%	93%	86%	97%	58%	90%	89%	88%	89%	81%	90%	81%	98%	96%	96%	94%		
		16	34	50	37	55	4	4	12	44	21	1	67	41	99	51	58	99	16	53	35	21	23	14	32	25
WDCH249 / USA14885809 / WDCE9	COONAMBLE HECTOR H249 SV / HBR	+9	+0.7	+0.7	-8.3	+4.5	+44	+79	+99	+90	+5	+1.2	-4.9	+44	+9.2	+4.1	+4.5	+0.6	+0.1	-0.51	+40	+0.42	+0.48	+0.78	$182	$312
		93%	96%	87%	99%	99%	98%	98%	98%	97%	98%	98%	77%	96%	95%	95%	95%	93%	95%	88%	98%	96%	96%	94%		
		92	64	74	6	62	79	85	87	68	99	81	43	96	19	2	3	41	94	3	4	1	1	3	72	77
WDCK314 / NAQA241 / WDCD94	COONAMBLE KEVIN K314 PV / HBR	+2	-0.8	+4.1	-2.2	+4.4	+50	+100	+131	+110	+25	+4.4	-7.0	+82	+7.5	+0.2	+0.7	+0.2	+1.6	+0.60	+41	+0.52	+1.12	+1.22	$209	$370
		89%	86%	75%	95%	98%	97%	95%	96%	93%	94%	93%	68%	92%	90%	90%	91%	86%	91%	83%	86%	85%	86%	82%		
		94	75	39	82	59	56	27	25	36	6	4	9	14	35	41	31	66	66	86	3	4	82	93	43	33
USA19611994 / USA18467508 / USA18974126	DB ICONIC G95 PV / HBR	+143	+3.5	+8.0	-3.0	+2.9	+65	+122	+151	+144	+17	+3.3	-3.6	+86	+7.1	+0.3	-0.7	-0.4	+4.4	+0.21	+42	+1.20	+1.00	+0.86	$240	$437
		80%	76%	63%	96%	95%	93%	92%	93%	88%	84%	86%	52%	86%	85%	84%	81%	78%	86%	81%	86%	97%	96%	83%		
		10	39	6	72	26	5	2	5	4	53	15	74	9	40	39	56	90	9	49	2	97	57	9	14	3
NJS21S15 / USA18636106 / QHEJ100	DEVANAH SATURN S15 PV / HBR	+70	+5.7	+0.9	-7.4	+3.6	+64	+107	+143	+102	+25	+4.2	-7.5	+84	+7.6	-1.5	-2.8	+0.2	+2.7	+0.41	+17	+0.92	+0.96	+0.84	$266	$434
		72%	73%	61%	92%	92%	90%	87%	86%	83%	77%	83%	47%	77%	73%	74%	74%	67%	76%	66%	86%	71%	72%	68%		
		52	20	72	12	41	6	12	10	49	7	5	5	11	34	79	87	66	37	71	63	65	47	7	3	4
WKGQ202 / WKGN129 / WKGL21	DIAMOND ONE ALL IN Q202 SV / HBR	-6	-10.1	-8.2	-5.4	+8.2	+71	+121	+165	+154	+23	+2.8	-3.9	+98	+10.5	-6.0	-6.2	+2.0	-0.6	-0.80	+34	+0.96	+0.60	+0.88	$184	$329
		68%	70%	55%	93%	90%	89%	85%	85%	81%	74%	78%	39%	74%	67%	69%	70%	60%	73%	58%	85%	59%	59%	53%		
		96	98	99	34	99	2	2	1	3	12	26	67	2	11	99	99	2	99	1	9	73	1	11	71	66
NGCM028 / QHEJ134 / NGCK204	DULVERTON MEDAGLIA M028 PV / HBR	+81	-9.4	-1.5	-4.7	+7.4	+72	+121	+159	+152	+11	+1.2	-4.0	+85	+5.5	-1.3	-4.4	+0.5	+2.5	-0.84	+17	+1.12	+1.10	+1.08	$203	$357
		86%	73%	62%	93%	90%	94%	94%	94%	88%	88%	91%	54%	88%	86%	86%	87%	78%	88%	78%	82%	78%	79%	75%		
		44	98	87	45	97	1	2	2	3	90	81	65	9	60	75	96	48	42	1	66	92	78	66	50	44
NGCN208 / WWEL3 / NGCG037	DULVERTON NEW APPROACH / HBR	+40	-1.8	+1.2	-5.7	+4.3	+52	+88	+113	+116	+10	+1.4	-5.3	+73	+11.4	-1.8	-1.6	+2.1	+0.9	+0.04	+24	+1.02	+1.10	+1.02	$206	$351
		88%	70%	65%	95%	94%	96%	96%	95%	90%	89%	93%	62%	90%	89%	88%	89%	81%	90%	82%	87%	85%	85%	82%		
		76	80	70	30	57	46	62	63	29	92	75	34	33	7	84	71	1	83	31	35	82	78	47	47	49
Breed Average EBVs		+75.	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.84	+0.97	+1.02	+200	+345

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Ident / Sire / Dam	Name / Reg.	MSA MBL RBV	Calv-Ease Dir	Dtrs	Birth GL	BW	Growth 200	400	600	Maternal MCW	Milk	Fert SS	DC	Carcase CW	EMA	Rib	P8	RBY	IMF	Feed NFI-F	Temp Doc	Structural Claw	Angle	Leg	Sel. Index $A	$A-L
BHRH744	**DUNOON HIGHPOINT H744** SV	+46	-12.4	-13.1	-3.9	+7.0	+56	+97	+129	+133	+16	+2.7	-5.6	+88	+5.6	-1.9	-1.3	+1.5	+1.0	-0.48	+19	+0.66	+0.82	+1.08	$156	$276
BNAD145	HBR	91%	86%	77%	97%	97%	96%	96%	96%	94%	94%	95%	70%	93%	91%	91%	92%	88%	92%	86%	94%	90%	90%	87%		
BHRD202		72	99	99	58	96	25	34	28	11	55	29	27	6	59	85	67	6	81	3	55	15	16	66	89	91
CYIR18	**EBONY BEEF BILLIE RAY R18** PV	+59	+3.6	+8.0	-4.1	+5.1	+66	+108	+128	+71	+23	+2.6	-5.9	+80	+12.6	-1.7	-0.9	+0.9	+2.0	+0.17	-1	+1.06	+0.90	+1.16	$302	$449
QMUM13	APR	75%	70%	63%	93%	91%	89%	85%	85%	83%	78%	81%	53%	78%	74%	75%	75%	67%	78%	68%	86%	76%	77%	73%		
CYIM611		61	38	6	55	74	4	12	30	90	13	32	22	16	4	82	60	25	55	45	99	87	32	85	1	2
USA16198796	**EF COMPLEMENT 8088** PV	+40	+4.6	+7.1	-4.7	+2.9	+53	+98	+130	+98	+21	+1.4	-6.8	+75	+7.8	+1.1	+0.5	+0.8	+1.5	+0.54	+20	+0.94	+1.28	+1.16	$252	$416
USA14686137	HBR	96%	99%	95%	99%	99%	99%	99%	99%	99%	99%	99%	91%	98%	97%	98%	98%	97%	97%	94%	99%	99%	99%	98%		
USA15452880		76	29	11	45	26	41	32	27	56	20	75	10	28	32	23	35	30	69	82	53	69	96	85	7	7
WWEQ15	**ESSLEMONT GARTH Q15** PV	+137	-2.5	+2.3	-8.3	+5.6	+63	+111	+151	+143	+28	+2.4	-6.5	+69	+5.9	-3.7	-3.9	+0.4	+4.0	-0.47	+44	+0.88	+1.14	+1.04	$232	$406
VTMG67	HBR	88%	75%	67%	93%	91%	90%	90%	90%	86%	79%	83%	61%	87%	87%	86%	87%	78%	89%	82%	86%	80%	80%	77%		
WWEN17		12	83	59	6	82	7	8	5	6	2	39	13	43	55	98	94	54	13	3	2	57	84	53	19	11
WWEL3	**ESSLEMONT LOTTO L3** PV	+117	-6.3	-1.9	-5.4	+4.6	+60	+110	+139	+134	+16	+3.6	-8.8	+91	+14.3	-0.4	+0.4	+1.7	+3.2	+0.37	+15	+1.12	+1.00	+1.14	$277	$449
HIOG18	HBR	95%	87%	86%	99%	99%	99%	99%	99%	98%	98%	98%	82%	97%	96%	96%	96%	95%	96%	92%	98%	98%	98%	97%		
WWEJ8		21	94	89	34	64	14	8	13	11	56	10	2	5	2	55	36	4	26	67	74	92	57	81	2	2
WWEQ24	**ESSLEMONT QUOKKA Q24** PV	+57	+5.4	+0.6	-4.6	+1.6	+43	+84	+98	+52	+21	+4.2	-6.3	+65	+16.8	+1.4	-0.1	+2.3	+2.1	+1.21	+30	+0.76	+0.90	+0.94	$269	$394
WWEN12	HBR	89%	74%	63%	95%	95%	93%	93%	92%	87%	78%	89%	57%	89%	88%	88%	89%	79%	91%	83%	87%	73%	73%	70%		
WWEN7		63	22	75	47	9	85	73	88	98	19	5	16	55	1	19	45	1	52	99	17	32	32	23	2	17
WWE21S6	**ESSLEMONT SEAN S6** PV	+110	+4.9	+6.9	-5.7	+3.0	+55	+97	+113	+86	+16	+4.4	-5.5	+78	+17.3	+2.3	+0.5	+1.4	+3.6	+1.02	+26	+1.06	+1.22	+1.10	$285	$444
NGMN418	HBR	76%	69%	62%	94%	91%	90%	86%	86%	84%	78%	82%	51%	79%	75%	75%	76%	68%	79%	70%	88%	65%	65%	63%		
WWEN7		24	26	12	30	28	28	33	63	74	56	4	29	21	1	9	35	8	19	98	26	87	93	72	1	2
NFSM99	**FARRER MAXWELL M99** PV	+113	-4.6	+1.8	-0.2	+7.6	+67	+114	+151	+146	+12	+4.2	-6.2	+89	+13.8	-3.1	-5.1	+2.0	+2.6	-0.27	+41	+0.78	+0.76	+0.84	$254	$429
BHRH240	HBR	85%	77%	63%	95%	95%	94%	94%	93%	91%	87%	89%	56%	87%	86%	86%	87%	78%	88%	76%	93%	87%	86%	83%		
NFSH124		23	91	64	95	98	3	5	5	5	83	5	17	6	2	96	98	2	39	9	3	36	9	7	6	4
USA18217198	**G A R ASHLAND** PV	+90	+1.5	+1.7	-6.0	+3.2	+67	+116	+146	+121	+14	+1.4	-2.7	+79	+11.9	-3.0	-2.3	+1.0	+3.1	+0.13	+11	+1.24	+1.12	+0.86	$257	$419
USA17354178	HBR	92%	96%	86%	99%	99%	99%	99%	99%	98%	98%	98%	72%	96%	95%	95%	95%	93%	94%	88%	99%	99%	99%	98%		
USA16934264		37	58	65	26	32	4	4	7	22	73	75	88	18	6	95	81	20	28	40	87	98	82	9	5	7
USA16295688	**G A R PROPHET** SV	+121	+3.3	+5.1	-0.7	+3.7	+67	+107	+134	+85	+23	+0.7	-5.0	+71	+3.6	-1.2	-1.3	-0.7	+4.7	+0.81	+26	+1.02	+0.82	+0.92	$270	$416
USA13009379	HBR	97%	98%	94%	99%	99%	99%	99%	99%	99%	99%	99%	90%	98%	97%	97%	98%	97%	97%	94%	99%	99%	99%	98%		
USA15129456		19	41	28	93	43	3	12	21	76	12	91	40	39	81	73	67	96	6	94	27	82	16	18	2	8
USA17328461	**G A R SURE FIRE** SV	+144	+6.4	+1.7	-3.0	+2.3	+50	+91	+113	+84	+20	+4.1	-7.3	+63	+7.8	-0.5	-0.5	+0.9	+3.6	-0.12	+26	+1.18	+0.94	+0.60	$258	$412
USA16205036	HBR	94%	95%	86%	99%	99%	98%	98%	98%	97%	98%	98%	80%	96%	96%	96%	96%	94%	96%	89%	96%	99%	99%	92%		
USA16431932		10	15	65	72	17	56	54	63	77	30	5	6	63	32	58	52	25	19	17	29	96	41	1	5	9
USA18690054	**GB FIREBALL 672** PV	+174	+2.2	+6.4	-4.8	+2.6	+62	+98	+131	+122	+16	+2.8	-6.9	+79	+14.4	-2.9	-3.9	+0.9	+5.5	+0.47	+11	+1.06	+0.94	+0.84	$278	$454
USA17965471	HBR	91%	93%	81%	99%	99%	98%	99%	98%	97%	96%	98%	63%	94%	93%	92%	92%	87%	93%	83%	98%	99%	99%	97%		
USA18054344		4	52	16	43	21	10	31	26	21	55	26	9	18	2	95	94	25	3	76	86	87	41	7	2	1
QBGH221	**GLENOCH HINMAN H221** SV	+152	+5.4	-2.7	-2.9	+3.0	+53	+93	+125	+115	+20	-0.9	-3.7	+84	+7.5	-1.9	-5.0	+0.9	+5.2	-0.37	+10	+0.88	+0.80	+1.04	$217	$366
BNAD145	HBR	90%	84%	75%	97%	97%	96%	96%	96%	92%	93%	95%	69%	92%	91%	91%	91%	87%	92%	85%	86%	88%	89%	85%		
QBGD80		7	22	92	73	28	39	45	37	29	26	88	72	11	35	85	98	25	4	5	89	57	14	53	35	37
Breed Average EBVs		+75.	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.84	+0.97	+1.02	+200	+345

Angus Australia -   MSA Marbling Research Breeding Values

Sire / Dam / Name / Reg.	MSA MBL RBV	Calv-Ease Dir	Calv-Ease Dtrs	Birth GL	Birth BW	Growth 200	Growth 400	Growth 600	Maternal MCW	Maternal Milk	Fert SS	Fert DC	Carcase CW	Carcase EMA	Carcase Rib	Carcase P8	Carcase RBY	Carcase IMF	Feed NFI-F	Temp Doc	Struct Claw	Struct Angle	Struct Leg	Sel Index $A	Sel Index $A-L
QBGK112 GLENOCH KALLANGUR K112 PV — NAQA241 / HBR / QBGG72	+58	-8.6	-2.9	-3.5	+6.4	+56	+99	+126	+104	+15	+1.6	-7.7	+90	+12.4	+0.9	+3.3	+0.6	+2.6	+0.47	+22	+0.72	+0.78	+0.70	$244	$378
	89%	80%	71%	93%	96%	94%	95%	94%	89%	89%	92%	65%	90%	89%	89%	90%	82%	91%	84%	85%	91%	92%	88%		
	62	97	92	65	92	27	30	35	46	65	69	4	5	4	27	6	41	39	76	42	24	11	1	11	27
EETN1 GVA NEWSWORTHY N1 PV — USA17031465 / HBR / VSNL24	+60	+8.2	+4.5	-9.5	+1.6	+51	+89	+115	+92	+23	+2.2	-6.9	+70	+5.5	-0.2	-3.1	+0.5	+1.9	+0.24	+19	+1.04	+0.88	+0.94	$217	$372
	86%	74%	63%	92%	90%	89%	88%	88%	85%	79%	81%	56%	86%	86%	85%	86%	77%	88%	79%	86%	85%	85%	80%		
	60	6	35	3	9	47	58	58	66	13	47	9	41	60	51	89	48	58	53	58	85	28	23	34	31
DKKM41 HARDHAT H708 MAIMURU J51 — NORH708 / APR / DKKJ51	+190	-1.2	+3.7	-1.7	+2.1	+43	+91	+118	+96	+11	+1.4	-3.6	+61	+2.2	+1.0	-2.1	-0.4	+6.3	+0.08	+23	+1.04	+1.00	+1.10	$189	$322
	89%	70%	62%	95%	93%	91%	91%	91%	87%	82%	82%	64%	89%	89%	88%	89%	80%	91%	84%	88%	88%	88%	85%		
	2	77	44	87	14	84	54	52	60	88	75	74	67	90	25	79	90	1	35	40	85	57	72	66	70
DKKQ110 HARDHAT K522 KODAK M33 — NORK522 / HBR / DKKM33	+112	+3.1	+8.7	-6.6	+2.4	+48	+84	+112	+104	+16	+2.8	-7.6	+50	+9.6	-0.7	-2.8	+1.1	+3.5	+0.02	+8	+0.66	+0.70	+0.68	$236	$400
	75%	74%	62%	91%	91%	88%	87%	88%	84%	76%	80%	52%	78%	78%	79%	79%	73%	80%	82%	84%	85%	85%	81%		
	23	43	4	19	18	65	74	65	46	55	26	5	90	16	63	87	16	21	29	92	15	4	1	17	14
DKKN43 HARDHAT K522 NEBRASKA — NORK522 / HBR / NKLF143	+12	+7.7	+6.6	-9.8	+2.1	+60	+100	+138	+134	+12	+5.2	-6.4	+73	+2.9	+0.2	+0.2	-0.3	+0.2	+0.17	+14	+0.76	+0.84	+0.88	$194	$387
	88%	77%	67%	94%	95%	93%	92%	91%	87%	82%	88%	58%	89%	87%	86%	88%	79%	89%	81%	91%	90%	90%	85%		
	91	8	15	2	14	14	26	14	11	84	1	15	32	86	41	40	87	93	45	77	32	20	11	61	21
NHZF1023 HAZELDEAN F1023 SV — VTMB1 / APR / NHZB723	+200	+3.8	+0.4	-2.6	+3.2	+39	+75	+88	+70	+14	+3.6	-5.2	+49	+7.8	+2.3	-0.2	+0.2	+5.9	+1.35	+12	+0.46	+0.98	+1.06	$211	$335
	93%	92%	81%	98%	98%	98%	98%	98%	97%	97%	97%	77%	95%	94%	94%	94%	90%	94%	88%	98%	97%	97%	94%		
	2	36	76	77	32	92	91	95	90	76	10	36	92	32	9	47	66	2	99	82	2	52	60	41	61
NHZM586 HAZELDEAN M586 SV — NHZJ140 / APR / NHZH356	+136	+6.6	+9.1	-8.3	+2.5	+48	+86	+116	+103	+18	+4.0	-11.4	+69	+5.0	-0.1	+0.2	+0.1	+4.3	+0.89	+37	+0.56	+1.02	+1.18	$268	$457
	92%	87%	71%	98%	98%	97%	97%	97%	96%	94%	96%	71%	94%	92%	92%	93%	87%	94%	88%	96%	95%	94%	91%		
	12	14	3	6	20	62	68	56	49	42	6	1	46	66	48	40	72	10	96	5	6	61	89	3	1
NHZP434 HAZELDEAN P434 SV — NHZJ140 / APR / NHZL527	+40	+8.8	+6.5	-7.3	+1.9	+46	+87	+113	+97	+20	+2.8	-7.3	+70	+2.2	+0.3	-3.7	+0.9	+1.7	+0.66	+47	+0.58	+0.98	+1.06	$203	$365
	88%	77%	64%	97%	96%	95%	95%	95%	90%	84%	93%	61%	90%	88%	88%	89%	80%	90%	82%	92%	88%	88%	84%		
	76	4	16	12	12	73	66	63	58	28	26	6	42	90	39	93	25	63	89	1	7	52	60	51	37
NHZQ1229 HAZELDEAN Q1229 PV — NHZF1023 / APR / NHZJ823	+149	+0.8	+4.2	-3.7	+3.8	+56	+102	+124	+76	+21	+4.6	-6.9	+77	+9.3	-1.5	-1.9	+0.4	+4.5	+0.93	+28	+0.66	+0.96	+0.98	$273	$416
	77%	78%	63%	98%	97%	97%	94%	95%	87%	80%	93%	56%	82%	81%	81%	82%	76%	82%	83%	97%	91%	91%	86%		
	8	64	38	61	45	28	23	38	85	23	9	9	23	19	79	76	54	8	97	22	15	47	34	2	7
NHZQ319 HAZELDEAN Q319 PV — NHZM586 / APR / NHZL1175	+119	+4.9	+9.3	-8.8	+2.7	+54	+104	+142	+139	+18	+3.2	-11.5	+77	+5.6	+1.7	+0.4	-0.6	+4.3	+0.53	+32	+0.82	+1.04	+1.14	$269	$487
	79%	76%	60%	97%	97%	96%	95%	95%	88%	80%	94%	56%	83%	83%	83%	83%	76%	84%	82%	96%	89%	88%	84%		
	20	26	2	5	23	36	17	11	8	41	17	1	22	59	15	36	94	10	81	12	45	66	81	2	1
NHZR1561 HAZELDEAN RONALDO R1561 PV — NORL519 / HBR / NHZJ115	+113	-6.8	+4.2	-5.7	+5.9	+66	+108	+143	+144	+6	+0.7	-4.0	+73	+3.9	-1.1	-1.4	-0.1	+3.5	+0.43	+14	+0.70	+0.76	+1.00	$200	$357
	76%	78%	67%	97%	96%	95%	91%	91%	86%	79%	90%	57%	81%	77%	78%	78%	72%	80%	69%	94%	82%	82%	75%		
	22	95	38	30	86	4	11	10	6	99	91	65	32	78	71	68	81	21	73	76	21	9	40	54	44
DYFN6 INGLEBRAE FARMS NOBLEMAN — NZE14647008839 / HBR / DYFL18	+83	+8.6	+10.3	-7.1	+2.0	+56	+89	+109	+100	+11	+3.4	-2.4	+61	+10.0	+0.8	+1.2	+0.2	+2.2	-0.30	+24	+0.86	+1.12	+1.18	$208	$367
	87%	80%	69%	95%	96%	95%	95%	95%	90%	86%	93%	64%	89%	88%	88%	88%	81%	90%	81%	93%	89%	89%	86%		
	42	4	1	14	13	26	57	72	52	88	13	91	68	14	29	24	66	50	8	33	53	82	89	45	35
NZE13300018 KAKAHU PIVOTAL 18004 PV — WWEL3 / HBR / NZE13300116373	+159	+3.8	+2.0	-7.3	+4.0	+55	+102	+118	+66	+27	+3.6	-7.2	+78	+8.8	+0.5	+0.4	+0.5	+4.2	+0.71	+0	+0.74	+0.90	+1.06	$291	$432
	79%	73%	65%	95%	96%	94%	94%	95%	88%	82%	92%	57%	82%	84%	83%	83%	78%	84%	80%	91%	88%	88%	83%		
	6	36	62	12	50	31	23	51	93	3	10	7	20	23	35	36	48	11	91	99	28	32	60	1	4
Breed Average EBVs	+75.	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.84	+0.97	+1.02	+200	+345

Angus Australia - MSA Marbling Research Breeding Values

Ident / Sire / Dam	Name / Reg.	MSA MBL RBV	Calv-Ease Dir	Dtrs	Birth GL	BW	Growth 200	400	600	Maternal MCW	Milk	Fert SS	DC	Carcase CW	EMA	Rib	P8	RBY	IMF	Feed NFI-F	Temp Doc	Structural Claw	Angle	Leg	Selection Index $A	$A-L
GXNQ209 / USA18463791 / VLYL1327	**KELLY ANGUS QUINN Q209** SV / HBR	+62 / 74% / 58	+7.6 / 74% / 8	+9.8 / 60% / 2	-6.9 / 95% / 16	+1.9 / 94% / 12	+65 / 92% / 5	+115 / 91% / 5	+143 / 89% / 10	+117 / 85% / 27	+27 / 77% / 3	+0.6 / 81% / 93	-9.3 / 48% / 1	+88 / 78% / 7	+6.6 / 78% / 46	-1.5 / 78% / 79	-2.9 / 79% / 88	+0.4 / 72% / 54	+2.7 / 79% / 37	-0.10 / 65% / 18	+34 / 85% / 9	+1.32 / 73% / 99	+1.28 / 73% / 96	+1.30 / 69% / 98	$299 / 1	$499 / 1
NDIP481 / USA17354145 / NDIL236	**KENNY'S CREEK PINNACLE P481** / HBR	+160 / 88% / 6	+2.4 / 79% / 50	-0.1 / 68% / 80	-3.9 / 98% / 58	+3.1 / 97% / 30	+49 / 96% / 61	+87 / 96% / 66	+115 / 96% / 59	+67 / 91% / 92	+21 / 84% / 19	+0.1 / 93% / 97	-2.7 / 61% / 88	+77 / 90% / 23	+3.7 / 89% / 80	+1.2 / 88% / 22	+1.1 / 89% / 25	-1.4 / 81% / 99	+6.3 / 91% / 1	+1.24 / 83% / 99	+18 / 90% / 62	+0.96 / 89% / 73	+0.92 / 89% / 37	+0.88 / 85% / 11	$209 / 44	$320 / 72
KILP1 / USA18578965 / KILM9	**KILLAIN RAINMAN P1** PV / HBR	-24 / 86% / 99	-3.3 / 74% / 87	-4.7 / 61% / 96	-6.9 / 95% / 16	+4.2 / 93% / 55	+60 / 92% / 13	+106 / 90% / 15	+131 / 91% / 24	+125 / 86% / 18	+13 / 79% / 78	+3.3 / 81% / 15	-2.8 / 51% / 87	+72 / 87% / 35	+14.3 / 86% / 2	-2.7 / 85% / 93	-1.8 / 86% / 74	+2.2 / 77% / 1	-1.5 / 88% / 99	+0.33 / 77% / 63	+4 / 86% / 97	+0.92 / 76% / 65	+0.98 / 76% / 52	+1.12 / 64% / 77	$185 / 69	$327 / 67
BLAP130 / SRKK306 / BLAK113	**KNOWLA PACKER P130** PV / HBR	+58 / 85% / 62	+2.2 / 73% / 52	+0.8 / 63% / 73	-3.0 / 93% / 72	+4.6 / 91% / 64	+55 / 89% / 30	+101 / 89% / 25	+133 / 89% / 22	+114 / 85% / 31	+11 / 78% / 89	+1.0 / 85% / 86	-5.8 / 54% / 24	+76 / 85% / 25	+7.9 / 84% / 31	+0.3 / 84% / 39	-0.9 / 85% / 60	+0.8 / 77% / 30	+2.0 / 87% / 55	+0.12 / 77% / 39	+26 / 84% / 29	+0.82 / 78% / 45	+1.22 / 78% / 93	+0.94 / 74% / 23	$232 / 20	$392 / 18
BLAP91 / HIOG18 / BLAL06	**KNOWLA PEPPER P91** PV / HBR	+60 / 89% / 60	+5.0 / 78% / 25	+2.5 / 70% / 57	-5.7 / 95% / 30	+3.7 / 95% / 43	+61 / 93% / 12	+115 / 93% / 5	+143 / 94% / 10	+166 / 88% / 2	+9 / 83% / 96	+1.6 / 90% / 69	-8.2 / 62% / 3	+67 / 90% / 49	+8.6 / 89% / 24	+1.6 / 88% / 16	-1.2 / 89% / 65	+1.1 / 81% / 16	+2.5 / 90% / 42	+0.39 / 85% / 69	-3 / 90% / 99	+0.98 / 91% / 76	+1.04 / 91% / 66	+1.02 / 88% / 47	$259 / 5	$479 / 1
BLAR190 / BLAN127 / BLAP172	**KNOWLA REVOLUTION R190** PV / HBR	+176 / 72% / 3	+9.5 / 72% / 2	+6.2 / 57% / 18	-10.7 / 95% / 1	+1.0 / 93% / 5	+39 / 90% / 92	+76 / 88% / 90	+101 / 86% / 84	+70 / 83% / 90	+24 / 75% / 7	+2.6 / 84% / 32	-3.7 / 44% / 72	+50 / 76% / 90	+14.5 / 74% / 2	+4.5 / 75% / 1	+3.2 / 75% / 7	+0.1 / 67% / 72	+4.9 / 77% / 5	+0.71 / 63% / 91	+41 / 87% / 3	+0.80 / 79% / 40	+1.04 / 80% / 66	+1.04 / 76% / 53	$224 / 27	$359 / 42
BLA21S48 / USA18837398 / BLAL21	**KNOWLA SO RIGHT S48** PV / HBR	+145 / 72% / 9	+2.7 / 78% / 47	-3.3 / 59% / 93	-4.7 / 98% / 45	+3.8 / 98% / 45	+57 / 96% / 22	+102 / 89% / 22	+130 / 87% / 27	+108 / 83% / 40	+17 / 77% / 46	+3.2 / 83% / 17	-6.0 / 44% / 20	+80 / 78% / 17	+9.9 / 73% / 14	+0.9 / 73% / 27	+1.3 / 74% / 23	+0.1 / 66% / 72	+4.1 / 76% / 12	+0.22 / 63% / 51	+27 / 96% / 23	+0.84 / 76% / 49	+0.94 / 76% / 41	+0.86 / 71% / 9	$250 / 8	$408 / 10
NZCP117 / USA17960722 / NZCM67	**KO B074 BEAST MODE P117** PV / HBR	+143 / 78% / 10	+2.0 / 74% / 53	+6.2 / 65% / 18	-5.5 / 98% / 33	+1.6 / 97% / 9	+60 / 95% / 15	+100 / 96% / 27	+124 / 94% / 38	+125 / 88% / 18	+11 / 80% / 91	+2.1 / 91% / 50	-4.6 / 56% / 50	+61 / 81% / 68	+1.3 / 85% / 94	+0.4 / 83% / 37	-0.4 / 83% / 50	-0.8 / 78% / 97	+4.0 / 84% / 13	+0.62 / 69% / 87	+13 / 90% / 81	+0.64 / 89% / 13	+0.52 / 89% / 1	+0.76 / 85% / 2	$203 / 50	$372 / 31
VLYR1549 / USA18217198 / VLYP251	**LAWSONS ASHLAND R1549** SV / HBR	+118 / 75% / 20	-3.2 / 76% / 86	-3.3 / 66% / 93	-6.7 / 91% / 18	+3.6 / 91% / 41	+60 / 90% / 14	+105 / 88% / 16	+137 / 90% / 16	+118 / 86% / 26	+15 / 78% / 68	+0.3 / 81% / 96	+0.1 / 52% / 99	+82 / 79% / 13	+15.6 / 79% / 1	-1.6 / 80% / 81	-1.1 / 80% / 63	+1.1 / 74% / 16	+3.9 / 80% / 15	+0.48 / 81% / 77	+21 / 85% / 47	+1.16 / 84% / 95	+1.06 / 84% / 70	+0.76 / 79% / 2	$214 / 37	$344 / 55
VLYN131 / USA16295688 / VLYL710	**LAWSONS CHARLIE N131** SV / HBR	+3 / 86% / 94	-2.9 / 80% / 85	-1.0 / 72% / 85	-3.9 / 95% / 58	+5.5 / 96% / 81	+72 / 95% / 1	+128 / 94% / 1	+159 / 92% / 2	+128 / 88% / 15	+17 / 85% / 46	+2.9 / 91% / 24	-4.8 / 65% / 45	+78 / 87% / 21	+5.2 / 86% / 63	-2.0 / 86% / 87	-1.6 / 87% / 71	-0.1 / 79% / 81	+1.0 / 88% / 81	+0.35 / 80% / 65	+33 / 94% / 10	+0.88 / 92% / 57	+0.74 / 92% / 7	+0.88 / 88% / 11	$231 / 21	$394 / 17
VLYL483 / HKFJ5 / VLYH221	**LAWSONS LINKEDIN L483** SV / HBR	+54 / 90% / 65	+4.1 / 87% / 33	-6.0 / 78% / 98	-1.2 / 98% / 90	+4.0 / 98% / 50	+58 / 97% / 20	+108 / 97% / 11	+152 / 97% / 4	+141 / 95% / 7	+25 / 95% / 6	+4.0 / 94% / 6	-4.2 / 67% / 60	+103 / 92% / 1	+8.8 / 89% / 23	-1.1 / 88% / 71	+1.9 / 91% / 16	+0.3 / 84% / 60	+1.8 / 91% / 61	-0.23 / 82% / 10	+20 / 89% / 53	+1.02 / 85% / 82	+0.76 / 85% / 9	+0.86 / 81% / 9	$206 / 47	$380 / 26
VLYQ44 / VLYM518 / VLYK914	**LAWSONS MIRACULOUS Q44** PV / HBR	+147 / 77% / 9	+4.3 / 76% / 32	-2.5 / 65% / 91	-7.3 / 97% / 12	+3.6 / 96% / 41	+49 / 93% / 60	+89 / 93% / 57	+111 / 92% / 68	+103 / 89% / 47	+9 / 82% / 94	+3.1 / 90% / 19	-3.1 / 54% / 83	+47 / 81% / 94	+21.0 / 81% / 1	+0.4 / 81% / 37	+0.5 / 81% / 35	+2.0 / 75% / 2	+2.5 / 82% / 42	+0.26 / 80% / 55	+37 / 84% / 5	+0.96 / 81% / 73	+0.92 / 81% / 37	+0.98 / 77% / 34	$232 / 20	$377 / 28
VLYM518 / USA17354145 / VLYH229	**LAWSONS MOMENTOUS M518** / HBR	+196 / 94% / 2	-3.4 / 97% / 87	-3.1 / 90% / 93	-5.2 / 99% / 37	+4.0 / 99% / 50	+50 / 99% / 55	+92 / 99% / 50	+112 / 99% / 65	+83 / 98% / 78	+22 / 98% / 16	+2.6 / 99% / 32	-3.0 / 79% / 84	+49 / 97% / 91	+12.2 / 95% / 5	-0.6 / 96% / 60	+0.3 / 96% / 38	+0.3 / 94% / 60	+5.6 / 95% / 2	+0.80 / 90% / 94	+37 / 99% / 6	+0.90 / 99% / 61	+1.02 / 99% / 61	+1.14 / 98% / 81	$217 / 34	$331 / 65
Breed Average EBVs		+75.	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.84	+0.97	+1.02	+200	+345

Angus Australia - MSA Marbling Research Breeding Values

Ident / Sire / Dam / Reg.	Name	MSA MBL RBV	Calv-Ease Dir	Dtrs	Birth GL	BW	Growth 200	400	600	Maternal MCW	Milk	Fert SS	DC	Carcase CW	EMA	Rib	P8	RBY	IMF	Feed NFI-F	Temp Doc	Structural Claw	Angle	Leg	Sel Index $A	$A-L
VLYP316 USA16295688 VLYM527	LAWSONS PROPHET P316 [PV] HBR	+150	+5.7	+5.5	-2.4	+3.3	+58	+89	+106	+62	+18	+0.3	-4.2	+69	+10.5	-4.1	-3.9	+1.6	+3.9	+0.39	+30	+0.62	+0.70	+0.80	$279	$404
		78%	78%	69%	93%	96%	94%	94%	91%	87%	79%	90%	58%	81%	81%	81%	82%	76%	82%	78%	93%	90%	90%	85%		
		8	20	24	80	34	20	59	77	95	45	96	60	45	11	99	94	5	15	69	16	11	4	4	1	12
VLYR4010 USA17354145 VLYP4005	LAWSONS ROCKY R4010 [PV] HBR	+134	+6.7	+5.5	-4.6	+2.4	+53	+93	+123	+98	+23	+2.4	-4.3	+71	+11.1	+1.7	+1.6	+0.2	+4.5	+1.34	+21	+1.00	+1.08	+1.04	$248	$408
		79%	85%	68%	99%	99%	98%	97%	95%	88%	80%	96%	57%	82%	85%	84%	84%	78%	84%	71%	98%	93%	93%	91%		
		13	13	24	47	18	38	47	41	56	13	39	58	37	8	15	19	66	8	99	46	79	74	53	9	10
VLYR1217 USA18217198 VLYN976	LAWSONS ROMULUS R1217 [PV] HBR	+139	+2.8	+6.3	-5.8	+3.7	+63	+107	+147	+114	+18	+1.3	-2.3	+81	+9.9	-4.2	-4.0	+1.2	+4.1	+0.57	+12	+1.16	+1.10	+0.94	$255	$411
		72%	75%	65%	93%	90%	89%	85%	85%	82%	77%	80%	50%	76%	72%	72%	73%	66%	75%	67%	85%	71%	71%	68%		
		11	46	17	28	43	7	12	7	31	42	78	92	15	14	99	95	13	12	84	83	95	78	23	6	9
NMMD78 USA14237157 NMMY119	MILLAH MURRAH EQUATOR D78 HBR	+2	-0.9	+6.4	-9.1	+5.0	+62	+111	+158	+185	+18	+2.1	-4.1	+90	+1.9	-1.8	-3.5	+1.0	+0.1	-0.99	+22	+0.82	+0.94	+1.06	$157	$356
		93%	96%	89%	99%	99%	98%	98%	98%	97%	98%	98%	80%	96%	95%	96%	96%	94%	95%	89%	98%	95%	95%	92%		
		94	75	16	4	72	9	8	3	1	41	50	63	5	92	84	92	20	94	1	43	45	41	60	89	45
NMMH250 NMME78 NMME120	MILLAH MURRAH HERCULES HBR	+70	-3.1	+3.1	-2.9	+6.0	+42	+76	+107	+95	+12	+2.5	-4.7	+61	+3.1	-1.4	-0.6	+0.4	+2.4	+0.15	+18	+0.92	+1.14	+1.08	$153	$273
		90%	86%	73%	98%	98%	97%	97%	97%	94%	94%	95%	65%	92%	91%	90%	91%	87%	92%	84%	91%	89%	89%	84%		
		52	86	51	73	87	85	90	75	61	85	36	48	69	85	77	54	54	44	43	59	65	84	66	90	91
NMMG18 NZE12170004408 NMMD85	MILLAH MURRAH HIGHLANDER HBR	+16	-1.4	-3.8	-3.2	+4.4	+49	+87	+110	+88	+20	+4.1	-2.8	+77	+10.4	-3.3	-1.7	+2.1	-0.2	-0.11	+12	+0.80	+0.94	+1.02	$173	$286
		90%	84%	73%	97%	96%	94%	94%	93%	91%	87%	90%	65%	91%	90%	90%	91%	84%	92%	84%	91%	84%	84%	80%		
		89	78	95	69	59	60	64	68	71	27	5	87	22	12	97	73	1	97	18	83	40	41	47	79	87
NMMK35 NZE469 NMMG41	MILLAH MURRAH KINGDOM K35 HBR	-42	-12.2	-7.4	-2.1	+8.8	+54	+99	+137	+148	+12	-0.9	-5.1	+62	+7.6	-0.0	+0.1	+1.1	-1.1	-0.74	+27	+0.82	+1.28	+1.20	$128	$260
		93%	96%	89%	99%	99%	98%	98%	98%	98%	98%	98%	81%	96%	95%	95%	95%	93%	95%	89%	98%	96%	96%	94%		
		99	99	99	83	99	33	29	16	4	87	88	38	65	34	46	41	16	99	1	26	45	96	91	97	94
NMMK42 NGMT30 NMMH4	MILLAH MURRAH KLOONEY K42 HBR	+73	+4.1	+1.5	-6.1	+5.6	+47	+86	+107	+89	+23	+2.2	-5.5	+64	+6.3	-1.3	-3.1	+1.3	+1.8	-0.05	+17	+0.84	+0.90	+1.06	$202	$338
		94%	97%	90%	99%	99%	98%	99%	98%	98%	98%	98%	82%	97%	95%	96%	96%	94%	95%	89%	99%	97%	97%	95%		
		49	33	67	24	82	67	68	74	70	12	47	29	58	50	75	89	10	61	22	64	49	32	60	52	59
NMML133 USA17091363 NMMH49	MILLAH MURRAH LOCH UP L133 HBR	+38	+4.8	+4.4	-5.5	+4.9	+59	+100	+132	+101	+26	+2.1	-1.8	+79	+1.5	-2.2	-4.1	-0.6	+1.8	-0.14	+32	+0.70	+1.08	+1.16	$167	$307
		94%	81%	81%	99%	99%	98%	98%	98%	98%	98%	98%	81%	96%	95%	96%	96%	94%	95%	89%	98%	97%	97%	96%		
		77	27	36	33	70	17	27	24	52	5	50	95	19	94	89	95	94	61	15	12	21	74	85	83	79
NMMM308 NZE14647008839 NMMH331	MILLAH MURRAH MILESTONE HBR	+61	+6.5	+5.4	-7.5	+4.6	+43	+79	+92	+80	+18	+2.5	-5.8	+44	+4.4	+2.4	+5.1	-0.3	+2.1	+0.11	+20	+0.84	+1.00	+1.22	$200	$344
		87%	83%	73%	97%	97%	96%	96%	96%	94%	91%	95%	68%	90%	89%	89%	89%	84%	90%	80%	95%	84%	84%	81%		
		59	14	25	11	64	82	85	93	82	43	36	24	96	73	8	2	87	52	38	50	49	57	93	54	54
NJWH283 NJWF189 NJWE51	MILWILLAH ELSOM H283 [PV] HBR	+57	+1.1	-5.7	-2.3	+3.9	+47	+83	+122	+110	+22	+1.8	-1.6	+75	+9.3	-2.4	-2.6	+1.6	+1.5	+0.40	+19	+0.76	+0.86	+1.04	$155	$276
		90%	83%	71%	97%	97%	96%	96%	95%	92%	93%	94%	63%	92%	91%	91%	91%	86%	92%	85%	88%	89%	90%	85%		
		62	61	97	81	48	69	76	42	37	17	62	96	26	19	91	85	5	69	70	57	32	23	53	90	91
BWFQ33 USA18181757 BWFN9	MOOGENILLA QUINELLA Q33 [PV] HBR	+141	+3.1	+9.8	-6.4	+3.7	+59	+115	+145	+83	+26	+3.0	-2.5	+98	+10.1	-1.5	-0.5	+0.1	+4.4	+0.67	+30	+0.80	+0.96	+0.88	$269	$417
		79%	81%	65%	99%	99%	98%	98%	97%	89%	80%	97%	54%	82%	86%	84%	85%	79%	85%	75%	97%	94%	94%	91%		
		10	43	2	21	43	17	5	8	79	5	21	90	2	13	79	52	72	9	89	17	40	47	11	3	7
EGRM39 HIOG18 EGRD9	MOSQUITO CREEK MAXIMUS HBR	+49	+3.5	+4.1	-6.1	+5.2	+60	+107	+140	+138	+16	+2.0	-7.6	+72	+6.5	+0.6	+0.1	+0.4	+2.3	+0.04	+12	+0.84	+0.84	+0.98	$248	$440
		84%	78%	68%	92%	95%	93%	94%	93%	88%	84%	92%	57%	86%	86%	85%	86%	79%	87%	76%	83%	76%	77%	72%		
		69	39	39	24	76	12	13	13	9	57	54	5	36	47	33	41	54	47	31	82	49	20	34	9	3
Breed Average EBVs		+75.	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.84	+0.97	+1.02	+200	+345

Angus Australia - MSA Marbling Research Breeding Values

Ident / Sire / Dam	Name / Reg.	MSA MBL RBV	Calv-Ease Dir	Dtrs	Birth GL	BW	Growth 200	400	600	Maternal MCW	Milk	Fert SS	DC	Carcase CW	EMA	Rib	P8	RBY	IMF	Feed NFI-F	Temp Doc	Structural Claw	Angle	Leg	Selection Index $A	$A-L
EGRQ53	**MOSQUITO CREEK QUALITY Q53**	+18	+8.1	+9.4	-6.3	+0.4	+59	+105	+135	+109	+28	+1.5	-5.5	+79	+0.0	-0.5	-1.9	-0.4	+1.8	-0.29	+31	+1.10	+1.20	+1.14	$217	$392
USA18463791	HBR	74%	74%	59%	93%	93%	91%	90%	91%	86%	77%	85%	49%	79%	79%	79%	79%	73%	80%	81%	85%	81%	82%	76%		
EGRG2		88	6	2	22	3	17	16	18	39	2	72	29	18	98	58	76	90	61	8	14	91	91	81	34	18
CSWP036	**MURDEDUKE BLACK PEARL**	+200	+2.0	+3.9	-8.6	+4.7	+50	+93	+135	+120	+20	+3.3	-6.9	+59	+1.2	+0.5	-1.0	-1.1	+6.3	+0.67	+14	+0.86	+1.18	+1.22	$212	$380
USA17236055	HBR	91%	79%	70%	96%	96%	94%	94%	93%	90%	83%	89%	67%	91%	90%	90%	91%	82%	92%	85%	93%	92%	93%	89%		
CSWL123		2	53	42	5	66	56	47	19	24	30	15	9	72	95	35	61	99	1	89	77	53	89	93	39	26
CSWH211	**MURDEDUKE HUSSAR H211** PV	-3	+1.1	+4.9	-8.7	+6.1	+60	+118	+152	+166	+12	+4.0	-5.3	+82	+1.8	-2.0	-5.5	+0.9	-0.6	-0.72	+29	+0.54	+0.86	+1.02	$162	$361
VTME343	HBR	90%	83%	75%	97%	96%	95%	95%	95%	93%	91%	94%	67%	91%	90%	90%	91%	85%	92%	84%	95%	95%	95%	93%		
CSWE175		95	61	30	5	89	14	3	4	2	83	6	34	14	92	87	99	25	99	1	18	5	23	47	86	40
CSWK428	**MURDEDUKE KICKING K428** PV	+31	+7.4	+8.9	-7.7	+1.9	+48	+93	+115	+88	+24	+3.4	-5.6	+66	+2.0	-0.4	-2.9	+0.4	+0.7	-0.11	+42	+0.88	+1.00	+1.20	$189	$345
VTME343	HBR	91%	87%	76%	98%	98%	97%	97%	97%	95%	94%	97%	69%	93%	92%	89%	92%	87%	93%	86%	97%	97%	97%	95%		
CSWE175		82	9	3	10	12	65	47	59	72	8	13	27	55	91	55	88	54	87	18	3	57	57	91	66	54
CSWQ011	**MURDEDUKE QUARTERBACK**	+178	+4.6	+0.0	-9.5	+3.0	+53	+98	+130	+114	+22	+4.1	-5.3	+74	+4.3	+1.7	+2.4	-1.0	+5.2	+0.62	+25	+0.74	+1.14	+1.08	$219	$384
VLYM518	HBR	86%	89%	78%	99%	99%	99%	99%	98%	96%	91%	98%	63%	90%	90%	89%	89%	82%	90%	79%	99%	98%	98%	97%		
CSWN026		3	29	79	3	28	41	31	27	32	14	5	34	30	74	15	12	98	4	87	31	28	84	66	32	23
NURM208	**MURRAY GENESIS M208** PV	+29	+1.0	+5.8	-5.9	+4.7	+50	+96	+129	+109	+20	+3.8	-6.1	+82	+16.4	-0.6	-2.7	+2.1	+0.9	+1.38	+6	+0.92	+1.02	+0.70	$232	$392
SMPG357	HBR	88%	79%	69%	93%	94%	93%	92%	93%	88%	87%	86%	64%	89%	88%	86%	89%	83%	90%	82%	88%	91%	90%	87%		
NURK45		83	62	21	27	66	52	39	29	38	30	8	19	14	1	60	86	1	83	99	94	65	61	1	19	18
NURN70	**MURRAY KODAK N70** PV	+135	+1.5	+3.8	-6.7	+4.4	+57	+102	+137	+140	+15	+5.2	-6.3	+79	+9.4	-1.2	-1.4	+0.9	+3.7	-0.34	+14	+0.94	+0.88	+0.92	$234	$420
NORK522	HBR	89%	80%	68%	98%	97%	96%	96%	96%	90%	87%	96%	62%	90%	89%	89%	90%	82%	91%	84%	96%	94%	94%	90%		
NURJ53		13	58	43	18	59	22	21	16	8	66	1	16	18	18	73	68	25	17	6	77	69	28	18	17	6
NURM204	**MURRAY PROCEED M204** PV	+246	-5.6	+7.2	-4.5	+4.3	+62	+106	+143	+132	+18	+2.2	-3.0	+90	+13.4	-4.8	-5.7	+0.8	+6.7	+0.09	+24	+0.94	+0.76	+0.88	$233	$385
USA16956101	HBR	90%	81%	70%	96%	96%	94%	94%	94%	90%	85%	90%	63%	91%	90%	87%	91%	86%	91%	85%	93%	90%	90%	87%		
NURJ43		1	93	11	48	57	10	14	10	12	39	47	84	6	3	99	99	30	1	36	34	69	9	11	19	22
NURP54	**MURRAY TWINHEARTS P54** PV	+108	-0.2	+4.1	-5.9	+6.7	+70	+126	+166	+159	+23	+1.8	-4.2	+102	+8.0	-2.3	-4.0	+1.0	+3.0	+0.19	+18	+0.86	+1.20	+0.88	$248	$440
USA16350631	HBR	85%	75%	64%	93%	91%	90%	89%	89%	86%	80%	82%	59%	86%	85%	85%	86%	77%	88%	78%	86%	87%	87%	83%		
NURM13		26	71	39	27	94	2	1	1	2	12	62	60	1	30	90	95	20	30	47	60	53	91	11	9	3
SFNL21	**NAMPARA LIBERTY L21** SV	-75	-5.3	-3.3	-6.4	+8.6	+67	+111	+147	+165	+18	+2.9	-0.8	+78	+8.1	-2.0	-0.7	+1.9	-2.5	-0.63	+24	+0.86	+0.88	+1.00	$140	$294
NZE10322010609	HBR	91%	87%	73%	98%	98%	97%	97%	97%	95%	94%	96%	63%	93%	92%	89%	92%	87%	93%	86%	94%	92%	92%	88%		
SFNH65		99	92	93	21	99	4	8	7	2	41	24	98	20	29	87	56	2	99	2	35	53	28	40	95	85
WLGP5	**NARANDA PIMP P5** SV	+109	+10.8	+9.3	-11.5	+1.6	+53	+99	+128	+97	+21	+1.6	-3.2	+82	+6.7	+1.4	+2.7	-0.3	+3.3	+0.34	-1	+0.70	+0.76	+1.04	$232	$394
USA18229425	APR	88%	76%	62%	97%	95%	94%	94%	93%	88%	79%	87%	54%	89%	87%	86%	87%	78%	89%	82%	90%	87%	87%	82%		
WLGM24		25	1	2	1	9	41	28	30	57	21	69	81	14	45	19	10	87	24	64	99	21	9	53	19	17
SKOJ6	**NEWLYN PARK EMPEROR J6** PV	+20	-7.4	-4.4	-7.2	+7.5	+64	+111	+143	+160	+10	+1.4	-4.4	+80	+7.8	-1.1	-1.2	+1.4	+0.3	-0.71	+16	+1.06	+0.80	+0.78	$182	$342
VTME343	HBR	86%	78%	70%	93%	92%	91%	90%	91%	88%	83%	85%	64%	87%	86%	86%	87%	80%	88%	79%	85%	85%	85%	81%		
NZCE115		88	96	96	13	98	6	8	10	2	93	75	55	16	32	71	65	8	92	1	69	87	14	3	72	56
NZE21095018	**NGAPUTAHI P206** PV	+144	+9.7	+5.1	-1.5	+0.0	+42	+84	+97	+73	+28	+2.6	-7.4	+52	+5.9	-0.4	-2.8	+1.2	+4.2	+0.19	+18	+0.96	+1.04	+1.12	$243	$389
HIOE7	HBR	89%	79%	70%	93%	96%	95%	95%	94%	89%	82%	93%	67%	89%	89%	88%	89%	81%	90%	82%	87%	80%	81%	78%		
NZE21095112H49		10	2	28	88	2	87	74	89	88	2	32	6	87	55	55	87	13	11	47	62	73	66	77	12	20
	Breed Average EBVs	+75.	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.84	+0.97	+1.02	+200	+345

Angus Australia - MSA Marbling Research Breeding Values

Ident / Sire / Dam	Name / Reg.	MSA MBL RBV	Calv-Ease Dir	Dtrs	Birth GL	BW	Growth 200	400	600	Maternal MCW	Milk	Fert SS	DC	Carcase CW	EMA	Rib	P8	RBY	IMF	Feed NFI-F	Temp Doc	Struct Claw	Angle	Leg	$A	$A-L
USA16981588	PA FULL POWER 1208 PV	+118	-5.6	-4.5	-4.9	+3.8	+53	+99	+120	+76	+13	+2.1	-2.7	+70	+13.0	-1.9	+0.1	+1.2	+3.2	-0.92	+21	+1.22	+0.94	+0.68	$228	$332
USA16381311	HBR	93%	95%	86%	99%	98%	98%	98%	98%	98%	98%	98%	73%	96%	94%	94%	94%	92%	95%	87%	98%	98%	98%	91%		
USA16408070		20	93	96	42	45	41	29	47	86	78	50	88	43	3	85	41	13	26	97	46	97	41	1	23	64
HKFE27	PARINGA IRON ORE E27 PV	+107	+6.4	+0.7	-7.0	+2.0	+35	+67	+90	+96	+13	+1.9	-7.2	+66	+6.9	+1.5	+2.5	+1.2	+1.7	+0.32	+31	+0.88	+0.90	+0.98	$186	$335
VTMA149	HBR	90%	71%	66%	97%	96%	95%	95%	94%	91%	92%	92%	65%	91%	90%	90%	91%	84%	92%	84%	89%	84%	84%	79%		
FAFC1		26	15	74	15	13	97	97	94	59	81	58	7	52	42	17	11	13	63	62	14	57	32	34	68	62
SMPG357	PATHFINDER GENESIS G357 PV	-1	+0.1	+4.2	-7.2	+6.7	+61	+108	+148	+138	+25	+4.4	-5.8	+95	+13.4	+0.4	-0.8	+1.5	-0.1	+0.61	+27	+0.88	+1.04	+0.80	$226	$404
VTMB1	HBR	94%	97%	89%	99%	99%	99%	99%	99%	98%	98%	98%	85%	97%	96%	96%	96%	95%	95%	90%	98%	98%	98%	96%		
SMPD245		95	69	38	13	94	10	11	7	9	5	4	24	3	3	37	58	6	96	86	24	57	66	4	25	12
SMPK22	PATHFINDER KOMPLETE K22 SV	+65	+10.3	+9.0	-9.2	+0.9	+40	+74	+95	+47	+27	+3.0	-5.6	+52	+6.3	+3.5	+5.3	+0.3	+2.1	+0.51	+26	+0.50	+0.82	+0.66	$232	$358
SMPG357	HBR	93%	93%	79%	99%	98%	98%	98%	98%	97%	97%	98%	74%	95%	94%	94%	94%	93%	94%	87%	97%	96%	96%	94%		
SMPH756		56	1	3	3	5	90	92	91	99	3	21	27	88	50	3	2	60	52	80	26	3	16	1	20	43
SMPM651	PATHFINDER MASTERPIECE	+79	+3.0	+4.5	-6.0	+5.2	+57	+106	+131	+138	+21	+3.7	-7.7	+54	+9.3	-1.9	-3.8	+1.7	+1.4	-0.27	+33	+0.96	+1.24	+1.20	$235	$426
VTMG67	HBR	86%	80%	71%	92%	95%	93%	92%	92%	88%	87%	88%	63%	88%	86%	86%	87%	80%	88%	80%	82%	77%	77%	74%		
SMPH66		45	44	35	26	76	22	15	24	9	23	9	4	83	19	85	94	4	72	9	11	73	94	91	17	5
SMPM558	PATHFINDER MAXIMUS M558 PV	+129	-1.9	+2.6	-6.7	+6.0	+60	+99	+129	+139	+20	+4.7	-8.4	+53	+10.8	-2.6	-2.5	+0.9	+3.6	-0.35	+49	+0.92	+1.08	+0.84	$240	$420
VTMG67	HBR	90%	84%	74%	96%	97%	95%	95%	95%	92%	92%	93%	66%	91%	90%	89%	91%	87%	91%	84%	86%	78%	79%	76%		
SMPH458		15	81	56	18	87	13	30	29	8	25	2	2	86	10	93	84	25	19	6	1	65	74	7	13	6
SMPN56	PATHFINDER NUCLEUS N56 SV	+53	+3.5	+2.0	-3.3	+5.3	+60	+106	+139	+137	+16	+4.6	-7.3	+76	+13.5	+0.6	+0.7	+1.2	+1.5	+0.39	+8	+0.76	+0.78	+0.84	$256	$448
HIOG18	HBR	90%	80%	69%	96%	97%	95%	95%	95%	90%	89%	93%	63%	91%	90%	90%	91%	82%	92%	85%	89%	86%	87%	81%		
SMPL179		66	39	62	68	78	14	14	13	9	60	3	6	25	3	33	31	13	69	69	91	32	11	7	6	2
SMPP516	PATHFINDER PHAT CAT P516 SV	+221	+5.8	+2.8	-7.6	+4.3	+52	+89	+117	+85	+25	+5.4	-9.5	+49	+12.0	-3.2	-2.7	+0.8	+6.1	+0.16	+39	+0.78	+1.14	+0.94	$294	$457
SMPM558	HBR	84%	74%	63%	96%	96%	94%	94%	94%	88%	82%	92%	57%	86%	84%	84%	85%	78%	87%	79%	92%	85%	85%	80%		
SMPJ282		1	19	54	10	57	44	60	54	76	7	1	1	92	6	96	86	30	1	44	4	36	84	23	1	1
SMPQ1357	PATHFINDER QUEST Q1357 PV	+127	-3.1	-0.3	-6.4	+5.4	+63	+116	+162	+175	+16	+1.7	-4.9	+83	+5.5	-1.9	-3.2	+1.0	+3.4	+0.16	+28	+0.88	+0.66	+1.10	$213	$403
NORL519	HBR	76%	76%	67%	94%	95%	93%	92%	92%	87%	79%	86%	57%	80%	80%	81%	81%	75%	81%	81%	88%	83%	84%	80%		
SMPM18		16	86	81	21	79	7	4	2	1	61	65	43	13	60	85	90	20	22	44	21	57	3	72	38	12
NZE41-97	PINEBANK WAIGROUP 41/97 #	+12	+3.6	-3.6	-3.5	+3.6	+37	+64	+77	+52	+19	+1.0	-3.8	+18	+5.3	+1.0	+0.1	+0.9	+1.1	-0.06	+33	+0.32	+0.94	+1.00	$155	$245
NZE53195	HBR	95%	96%	90%	98%	99%	98%	98%	98%	98%	98%	97%	88%	97%	96%	96%	96%	95%	96%	90%	93%	87%	87%	82%		
NZE63988		91	38	94	65	41	95	98	99	98	37	86	70	99	62	25	41	25	79	21	11	41	40		89	96
WQCQ47	QUANDEN SPRINGS	+125	+9.4	+7.2	-9.2	-0.7	+50	+97	+130	+117	+29	+5.0	-5.0	+47	+11.1	+1.6	+1.5	+0.3	+2.8	-0.21	+27	+1.06	+1.06	+1.08	$221	$403
VLYM518	HBR	77%	76%	66%	91%	92%	91%	90%	90%	86%	79%	85%	54%	80%	80%	80%	81%	74%	81%	78%	88%	82%	84%	78%		
VLYM1690		17	2	11	3	1	53	34	26	27	1	2	40	93	8	16	20	60	34	11	24	87	70	66	30	12
NORE11	RENNYLEA EDMUND E11 PV	+106	+8.7	+1.3	-6.8	+1.2	+34	+64	+84	+55	+16	+1.9	-7.5	+52	+3.9	+3.3	+1.4	-0.1	+4.0	+0.77	+23	+0.56	+1.04	+1.10	$202	$324
NGMY145	HBR	97%	99%	97%	99%	99%	99%	99%	99%	99%	99%	99%	94%	98%	98%	98%	98%	98%	98%	96%	99%	99%	99%	99%		
VLYY5		27	4	69	17	6	98	98	97	97	55	58	5	88	78	4	21	81	13	93	38	6	66	72	51	70
NORG255	RENNYLEA G255 PV	+143	-10.5	-5.9	-3.0	+4.6	+49	+94	+128	+126	+21	+0.7	-3.4	+89	+7.1	-0.7	-3.8	+0.8	+5.0	-0.02	+9	+1.18	+0.90	+0.84	$161	$277
BNAD145	APR	95%	81%	79%	98%	98%	98%	98%	98%	98%	98%	97%	82%	96%	95%	95%	96%	93%	95%	90%	97%	95%	95%	93%		
NORC490		10	99	98	72	64	57	45	31	17	23	91	78	6	40	63	94	30	5	25	89	96	32	7	87	90
Breed Average EBVs		**+75.**	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.84	+0.97	+1.02	+200	+345

Angus Australia -   MSA Marbling Research Breeding Values

Sire / Dam	Name / Reg.	MSA MBL RBV	Dir	Dtrs	GL	BW	200	400	600	MCW	Milk	SS	DC	CW	EMA	Rib	P8	RBY	IMF	NFI-F	Doc	Claw	Angle	Leg	$A	$A-L
			Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
NORH708	RENNYLEA H708 PV	+272	-7.4	+2.8	+1.2	+4.7	+47	+101	+129	+130	+12	+2.5	-3.2	+72	+12.4	-3.8	-6.5	+2.2	+7.1	+0.69	+21	+0.72	+0.68	+0.90	$217	$361
NORC511	APR	94%	93%	84%	98%	98%	98%	98%	98%	97%	97%	97%	80%	96%	95%	95%	95%	93%	95%	92%	98%	98%	98%	97%		
NORE176	1		96	54	99	66	68	23	29	14	83	36	81	35	4	98	99	1	1	90	48	24	3	14	34	41
NORK163	RENNYLEA K163 PV	+84	+5.1	-7.7	-3.7	+2.5	+39	+73	+94	+65	+10	+0.7	-4.7	+61	+18.5	-0.1	-1.0	+2.6	+2.4	+0.17	+18	+0.66	+0.70	+1.00	$233	$342
NORH106	APR	93%	89%	79%	98%	98%	98%	98%	97%	97%	96%	95%	77%	94%	94%	94%	94%	91%	94%	88%	91%	90%	90%	87%		
NORE176	42		25	99	61	20	92	93	92	93	94	91	48	69	1	48	61	1	44	45	58	15	4	40	19	56
NORK835	RENNYLEA K835 PV	+126	-3.9	-4.3	-2.0	+6.3	+47	+87	+111	+95	+11	+3.1	-3.8	+53	+10.1	+1.0	-1.1	+0.4	+4.2	-0.13	+10	+0.64	+1.08	+1.12	$184	$302
NORG420	APR	88%	83%	70%	98%	95%	96%	95%	95%	91%	89%	90%	65%	90%	89%	89%	89%	86%	90%	81%	92%	89%	89%	86%		
NORH514	16		89	96	84	91	67	66	66	62	89	19	70	85	13	25	63	54	11	16	88	13	74	77	70	81
NORK522	RENNYLEA KODAK K522 SV	+141	+8.8	+9.0	-4.8	+1.4	+45	+83	+109	+111	+10	+4.6	-6.9	+51	+3.2	+3.0	+1.4	-0.3	+3.9	+0.24	+7	+0.62	+0.82	+0.96	$205	$385
NORE11	HBR	92%	94%	83%	99%	99%	98%	98%	98%	97%	97%	98%	74%	95%	93%	94%	94%	92%	94%	88%	96%	97%	97%	95%		
NORF810	11		4	3	43	8	75	75	70	35	91	3	9	89	84	5	21	87	15	53	94	11	16	28	48	22
NORL508	RENNYLEA L508 PV	+164	+1.0	+8.0	-5.9	+2.6	+46	+85	+117	+92	+26	+1.4	-7.0	+56	+5.0	+1.0	+0.0	-0.1	+5.1	+0.67	+16	+0.68	+0.84	+0.88	$232	$379
USA17366506	HBR	93%	84%	78%	99%	99%	98%	98%	98%	98%	98%	98%	81%	96%	95%	95%	95%	93%	95%	89%	99%	98%	98%	97%		
NORH414	5		62	6	27	21	74	70	54	65	4	75	9	81	66	25	43	81	4	89	69	18	20	11	19	26
NORL683	RENNYLEA L683 PV	+57	+1.9	+1.7	-4.4	+5.0	+55	+95	+119	+107	+5	+2.3	-5.9	+79	+4.7	+0.7	-1.2	+0.8	+2.3	+0.61	+24	+0.70	+0.88	+1.00	$223	$378
NORE11	APR	89%	84%	74%	98%	97%	96%	96%	96%	94%	92%	95%	69%	91%	90%	88%	91%	85%	91%	85%	95%	92%	92%	89%		
NORJ631	63		54	65	50	72	31	40	49	42	99	43	22	18	70	31	65	30	47	86	35	21	28	40	27	27
NORM1078	RENNYLEA M1078 SV	+263	-5.6	-0.1	-1.8	+3.3	+41	+82	+102	+101	+11	+1.8	-4.6	+59	+10.3	-2.0	-5.3	+1.0	+7.8	+0.74	+11	+0.92	+1.02	+1.14	$199	$322
NORH708	APR	91%	79%	68%	97%	96%	95%	95%	95%	93%	89%	93%	65%	92%	90%	90%	91%	83%	92%	85%	94%	91%	92%	89%		
NORF563	1		93	80	86	34	89	77	83	51	89	62	50	74	12	87	98	20	1	92	86	65	61	81	55	71
NORP987	RENNYLEA P987 PV	+215	+10.2	+9.5	-7.9	+1.4	+50	+97	+123	+128	+9	+0.3	-2.7	+73	+5.7	+3.2	+2.1	-1.0	+7.7	+0.96	+6	+0.90	+0.92	+1.06	$224	$408
NORM763	APR	87%	74%	64%	97%	97%	96%	95%	95%	92%	86%	92%	61%	89%	88%	88%	88%	80%	90%	80%	95%	91%	91%	86%		
NORM1184	1		1	2	8	8	53	34	40	15	94	96	88	34	57	4	14	98	1	98	95	61	37	60	27	10
NORQ1081	RENNYLEA Q1081 PV	+233	-2.7	+5.0	-3.6	+4.0	+50	+90	+117	+104	+12	+3.4	-5.6	+50	+10.0	+0.2	-1.2	+0.7	+6.4	+0.78	+13	+0.86	+0.88	+0.88	$241	$387
NORH708	APR	78%	76%	66%	92%	93%	92%	91%	92%	87%	80%	87%	58%	81%	82%	82%	82%	77%	83%	80%	89%	86%	87%	82%		
NORL841	1		84	29	63	50	52	55	54	46	84	13	27	91	14	41	65	35	1	94	80	53	28	11	13	21
NORQ213	RENNYLEA Q213 PV	+38	+9.4	+6.9	-7.1	+1.2	+66	+120	+152	+96	+24	+0.7	-9.7	+103	+8.7	+0.4	+0.0	+0.2	+3.1	+0.70	+27	+0.54	+0.68	+0.84	$339	$529
NORK907	APR	86%	78%	67%	97%	97%	97%	96%	96%	92%	85%	94%	58%	89%	87%	86%	87%	79%	89%	80%	96%	92%	92%	88%		
NORL110	77		2	12	14	6	4	2	4	59	7	91	1	1	23	37	43	66	28	91	24	5	3	7	1	1
NORR992	RENNYLEA R992 PV	+185	+5.0	+6.3	+2.0	+1.4	+44	+84	+116	+86	+27	+1.7	-5.8	+69	+10.9	+1.6	+2.0	-0.1	+6.2	+1.16	+25	+0.60	+0.78	+0.82	$252	$403
NORN542	APR	76%	68%	59%	95%	95%	93%	92%	92%	87%	79%	90%	51%	80%	79%	80%	80%	74%	81%	67%	92%	74%	75%	72%		
NORM1034	3		25	17	99	8	81	74	56	75	3	65	24	44	9	16	15	81	1	99	30	9	11	5	7	13
TRHP52	RICHMOND HILL PLAY P52 SV	+138	+5.2	+3.6	+0.1	+4.0	+52	+93	+116	+123	+11	+4.2	-6.3	+74	+11.0	-5.0	-3.0	+1.6	+3.0	-0.34	+31	+1.04	+1.02	+0.98	$231	$408
TRHL9	HBR	90%	72%	58%	93%	94%	92%	91%	92%	86%	76%	80%	53%	90%	89%	88%	89%	78%	91%	84%	87%	86%	86%	81%		
TRHH92	11		24	45	96	50	42	46	57	20	89	5	16	29	9	99	88	5	30	6	14	85	61	34	20	10
NZE14572019	RISSINGTON SOVEREIGN Q485	+171	+10.6	+9.0	-7.0	+0.8	+63	+115	+151	+124	+21	+3.0	-3.7	+88	+8.2	-2.1	-4.2	+0.0	+6.0	+0.24	-8	+0.98	+1.02	+1.08	$262	$451
HKFM103	HBR	71%	82%	61%	98%	97%	96%	87%	87%	83%	76%	80%	43%	77%	70%	71%	72%	63%	75%	62%	95%	65%	65%	63%		
NZE14572117009	4		1	3	15	4	7	5	5	19	23	21	72	7	28	88	95	76	2	53	99	76	61	66	4	2
Breed Average EBVs		**+75.**	**+1.7**	**+2.7**	**-4.4**	**+4.0**	**+51**	**+92**	**+119**	**+102**	**+17**	**+2.2**	**-4.6**	**+67**	**+6.4**	**-0.1**	**-0.3**	**+0.5**	**+2.3**	**+0.22**	**+21**	**+0.84**	**+0.97**	**+1.02**	**+200**	**+345**

Angus Australia -   MSA Marbling Research Breeding Values

Ident / Sire / Dam	Name / Reg.	MSA MBL RBV	Calv-Ease Dir	Dtrs	Birth GL	BW	Growth 200	400	600	Maternal MCW	Milk	Fert SS	DC	Carcase CW	EMA	Rib	P8	RBY	IMF	Feed NFI-F	Temp Doc	Structural Claw	Angle	Leg	Selection Index $A	$A-L
USA16396573	S A V CAMARO 9272 SV	+72	+3.8	+0.6	-6.7	+3.6	+49	+79	+99	+103	+9	+1.2	-6.1	+42	+0.4	-0.5	-2.4	+0.9	+1.6	+1.09	+20	+1.08	+0.84	+0.80	$179	$322
USA0035	HBR	91%	86%	73%	97%	97%	96%	96%	96%	92%	94%	91%	62%	93%	91%	91%	91%	84%	92%	84%	86%	86%	86%	78%		
USA15688516		50	36	75	18	41	59	84	87	48	96	81	19	97	97	58	82	25	66	99	53	89	20	4	75	71
NZE21159019	SEVEN HILLS 312/19 PV	+84	+1.9	+4.6	-7.5	+3.4	+52	+94	+120	+92	+20	-0.9	-1.9	+70	+7.9	-4.3	-5.2	+1.0	+3.9	+1.28	+5	+1.04	+0.96	+1.06	$209	$337
USA18217198	HBR	75%	76%	65%	93%	92%	90%	89%	91%	86%	78%	81%	50%	79%	79%	80%	80%	74%	80%	81%	86%	86%	86%	81%		
NZE21159117053		41	54	34	11	36	46	43	47	66	26	99	94	42	31	99	98	20	15	99	96	85	47	60	43	60
APBK11	SHACORRAHDALU KINETIC K11	+95	+10.0	+10.1	-9.1	+0.4	+49	+88	+103	+95	+11	+4.5	-6.6	+64	+10.3	+3.4	+2.2	+0.8	+2.0	+0.84	+1	+0.96	+1.16	+1.10	$241	$415
VTMB1	HBR	84%	78%	70%	93%	92%	91%	90%	91%	87%	83%	84%	64%	86%	84%	84%	85%	77%	86%	78%	86%	82%	81%	78%		
APBF2		34	2	1	4	3	58	61	81	61	91	3	12	59	12	3	13	30	55	95	99	73	87	72	13	8
APB21S24	SHACORRAHDALU PHOENIX	+47	+8.2	+5.2	-8.1	-0.5	+55	+101	+134	+87	+26	+2.7	-7.9	+88	+4.2	+2.1	+4.1	-0.1	+2.0	+0.89	+13	+0.94	+1.14	+1.12	$272	$441
USA18636106	HBR	74%	75%	64%	93%	90%	89%	87%	86%	83%	78%	84%	51%	78%	74%	74%	75%	67%	77%	69%	86%	74%	74%	69%		
APBJ23		71	6	27	7	1	29	24	20	73	5	29	4	6	75	11	4	81	55	96	78	69	84	77	2	3
APBR5	SHACORRAHDALU ROYALE R5	+129	+7.7	+7.0	-6.6	+2.1	+48	+92	+113	+66	+23	+2.4	-6.8	+68	+9.3	+3.3	+4.1	+0.3	+3.3	+1.03	+11	+0.84	+1.04	+0.74	$277	$428
TFAK132	HBR	75%	76%	65%	93%	93%	91%	90%	90%	85%	78%	85%	53%	79%	79%	79%	79%	73%	79%	79%	87%	88%	87%	83%		
HBUP80		15	8	12	19	14	64	49	63	93	10	39	10	47	19	4	4	60	24	98	86	49	66	2	2	5
SYAN340	STONEY POINT NOLTE N340 SV	+87	-1.1	-7.0	-6.0	+6.2	+71	+128	+165	+161	+17	+3.5	-2.5	+107	+5.5	-3.3	-5.3	+0.8	+2.8	-0.15	+5	+0.96	+0.92	+1.22	$208	$383
SYAL178	HBR	86%	77%	66%	96%	96%	95%	96%	96%	93%	87%	93%	59%	88%	87%	87%	87%	79%	89%	77%	88%	89%	90%	84%		
SGMK250		39	76	99	26	90	1	1	1	2	49	12	90	1	60	97	98	30	34	15	96	73	37	93	45	24
SYAP147	STONEY POINT PERRY P147 PV	+126	+4.5	+1.5	-4.7	+4.7	+57	+104	+134	+113	+22	+1.8	-7.2	+96	+9.8	-1.2	-0.6	+0.4	+3.8	-0.16	+5	+0.86	+0.80	+0.66	$266	$438
USA17936442	HBR	88%	74%	61%	93%	93%	92%	91%	91%	87%	79%	86%	56%	88%	87%	87%	88%	78%	90%	80%	88%	84%	84%	76%		
SWAH233		16	30	67	45	66	23	19	19	32	17	62	7	2	15	73	54	54	16	14	96	53	14	1	3	3
NZE19507018	STORTH OAKS FULLY LOADED	+101	+7.9	+6.6	-11.5	+1.2	+45	+88	+134	+133	+20	+3.3	-7.0	+65	+2.5	+0.8	+0.2	-0.5	+3.5	+0.83	+32	+0.52	+0.76	+1.04	$189	$379
NORL508	HBR	88%	76%	65%	97%	97%	95%	95%	95%	88%	82%	93%	59%	89%	88%	88%	89%	80%	90%	83%	93%	86%	86%	83%		
NZE19507113J320		30	7	15	1	6	76	63	20	12	28	15	9	56	89	29	40	92	21	95	12	4	9	53	66	26
NZE19507013	STORTH OAKS JACK J7 SV	+58	+4.9	+7.6	-4.8	+4.5	+61	+113	+152	+145	+17	+3.5	-0.9	+80	+8.1	-0.2	-2.9	-0.3	+2.4	-0.01	+19	+0.98	+0.98	+0.90	$178	$359
VTME343	HBR	92%	89%	79%	98%	98%	97%	97%	97%	95%	94%	96%	70%	93%	92%	92%	93%	90%	93%	86%	96%	93%	93%	89%		
NZE19507111G183		61	26	8	43	62	12	6	4	6	48	12	98	16	29	51	88	87	44	26	55	76	52	14	76	42
VSNG34	STRATHEWEN BERKLEY G34 PV	+69	+7.0	+7.6	-6.4	+3.6	+57	+108	+142	+148	+19	+2.3	-7.2	+82	+5.6	+0.9	+0.0	+0.3	+1.7	-0.09	+30	+1.12	+1.28	+1.10	$229	$439
VTMB1	HBR	90%	84%	75%	95%	94%	93%	92%	93%	91%	89%	87%	68%	91%	90%	89%	90%	86%	91%	85%	89%	88%	88%	84%		
VSNE22		53	11	8	21	41	24	12	10	5	33	43	7	13	59	27	43	60	63	19	16	92	96	72	22	3
USA17236055	SYDGEN BLACK PEARL 2006 PV	+108	+2.0	+7.8	-7.0	+3.2	+51	+85	+123	+87	+21	+1.6	-3.5	+73	+8.4	+0.4	+0.0	+0.4	+2.6	+0.27	+15	+1.02	+1.20	+1.14	$211	$343
USA15354674	HBR	96%	98%	93%	99%	99%	99%	99%	99%	98%	99%	99%	89%	98%	97%	97%	97%	96%	97%	92%	99%	99%	99%	98%		
USA16214508		26	53	7	15	32	47	69	40	73	19	69	76	33	26	37	43	54	39	56	72	82	91	81	41	55
VTMA149	TE MANIA ADA A149 PV	+13	-6.9	-1.7	-3.2	+6.6	+53	+97	+130	+171	+10	+2.0	-2.0	+82	+3.0	-3.3	-2.0	+1.4	-0.4	-0.68	+27	+0.88	+0.74	+0.78	$95	$250
VTMX60	HBR	95%	97%	91%	99%	99%	99%	99%	99%	98%	98%	98%	86%	97%	96%	97%	97%	96%	96%	91%	97%	97%	97%	96%		
VTMU338		91	95	88	69	93	38	34	27	1	93	54	94	13	85	97	77	8	98	1	25	57	7	3	99	96
VTMK52	TE MANIA KALIBROOK K52 PV	+133	+7.8	+5.2	-3.0	+1.5	+52	+104	+128	+102	+30	+1.7	-5.9	+71	+3.2	+0.4	+2.2	-0.6	+5.4	+1.49	+10	+1.18	+1.08	+1.12	$253	$425
USA16295688	HBR	87%	78%	69%	94%	95%	92%	92%	91%	87%	83%	87%	65%	87%	86%	84%	87%	82%	88%	79%	87%	89%	89%	86%		
VTMH423		13	7	27	72	8	45	19	30	49	1	65	22	37	84	37	13	94	3	99	89	96	74	77	7	5
	Breed Average EBVs	+75.	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.84	+0.97	+1.02	+200	+345

Angus Australia - MSA Marbling Research Breeding Values

Ident / Sire / Dam	Name / Reg.	MSA MBL RBV	Calv-Ease Dir	Calv-Ease Dtrs	Birth GL	Birth BW	Growth 200	Growth 400	Growth 600	Maternal MCW	Maternal Milk	Fert SS	Fert DC	Carcase CW	Carcase EMA	Carcase Rib	Carcase P8	Carcase RBY	Carcase IMF	Feed NFI-F	Temp Doc	Struct Claw	Struct Angle	Struct Leg	Sel Index $A	Sel Index $A-L
VTMK138	TE MANIA KIRBY K138 PV	+254	+0.2	+7.7	-1.3	+4.6	+52	+90	+118	+97	+18	+2.5	-9.5	+66	+5.6	+1.3	+3.2	-1.6	+8.4	+1.03	+14	+0.78	+0.74	+0.94	$276	$441
USA16295688	HBR	95%	88%	79%	99%	99%	98%	98%	98%	98%	97%	98%	81%	97%	96%	96%	97%	94%	96%	88%	99%	99%	99%	98%		
VTMH17		1	68	8	90	64	43	57	53	58	41	36	1	54	59	20	7	99	1	98	78	36	7	23	2	3
VTML64	TE MANIA LANCASTER L64 PV	+164	+3.8	+7.2	-9.5	+3.1	+49	+91	+119	+108	+20	+1.0	-7.2	+66	+0.2	+1.6	-2.7	+0.0	+4.9	-0.38	+14	+0.78	+0.98	+1.06	$224	$389
VTMJ131	HBR	94%	80%	74%	98%	98%	97%	97%	97%	96%	95%	96%	74%	95%	94%	92%	95%	90%	95%	90%	96%	97%	97%	96%		
VTMJ1139		5	36	11	3	30	58	54	50	39	25	86	7	52	97	16	86	76	5	5	77	36	52	60	26	20
VTMN424	TE MANIA NEBO N424 PV	+161	+9.3	+0.3	-6.6	+4.2	+54	+101	+131	+103	+29	+4.4	-4.0	+57	+6.9	-1.1	-4.1	+0.4	+3.9	-0.15	+46	+0.94	+0.88	+0.96	$212	$365
VTMJ89	HBR	95%	89%	82%	98%	98%	98%	98%	98%	97%	96%	97%	66%	96%	96%	94%	96%	88%	94%	83%	98%	98%	98%	97%		
VTMJ214		6	3	77	19	55	36	24	25	48	2	4	65	77	42	71	95	54	15	15	1	69	28	28	40	37
VTMN1387	TE MANIA NEON N1387 SV	+266	-0.2	+4.3	-6.0	+3.6	+48	+87	+106	+96	+18	+1.4	-8.4	+49	+2.2	-0.1	-1.6	-1.6	+9.0	-0.04	+25	+0.74	+0.82	+1.00	$233	$384
VTMK138	HBR	87%	81%	70%	98%	98%	97%	97%	96%	94%	87%	95%	58%	89%	89%	87%	89%	81%	88%	83%	97%	96%	96%	95%		
VTML452		1	71	37	26	41	64	66	76	60	38	75	2	92	90	48	71	99	1	23	31	28	16	40	19	23
VTMP888	TE MANIA PESO P888 PV	+36	+8.3	+6.2	-5.2	+1.9	+56	+113	+143	+118	+26	+2.1	-6.0	+90	+5.3	-0.5	+1.1	+0.6	+1.4	-0.02	+23	+0.84	+1.12	+0.98	$249	$436
VTMK226	HBR	91%	85%	75%	98%	97%	97%	97%	97%	95%	92%	92%	62%	93%	92%	91%	92%	84%	92%	82%	95%	94%	94%	91%		
VTMH423		78	5	18	37	12	26	6	10	26	4	50	20	5	62	58	25	41	72	25	38	49	82	34	8	3
VTMQ854	TE MANIA QUEBEC Q854 SV	+110	+8.3	+3.5	-2.7	+1.3	+53	+93	+120	+78	+26	+1.3	-3.2	+60	+4.5	+0.6	+2.2	-0.4	+4.0	+0.66	+28	+0.58	+0.74	+0.70	$230	$367
USA18229488	HBR	77%	85%	67%	98%	98%	97%	97%	96%	91%	82%	95%	51%	82%	85%	83%	83%	77%	83%	84%	97%	96%	96%	94%		
VTML1244		24	5	46	76	7	41	48	48	84	4	78	81	71	72	33	13	90	13	89	20	7	7	1	21	35
VTMR970	TE MANIA RESOLUTION R970 PV	+80	+1.3	+4.6	-4.4	+3.4	+58	+107	+136	+100	+23	+2.2	-6.6	+78	+10.4	-0.3	-0.1	+0.9	+2.6	-0.07	+22	+0.74	+0.92	+1.20	$273	$433
VTMP149	HBR	70%	74%	60%	94%	94%	89%	85%	85%	82%	76%	80%	43%	75%	70%	70%	72%	62%	74%	62%	84%	76%	77%	73%		
VTMP287		45	59	34	50	36	18	12	17	53	11	47	12	20	12	53	45	25	39	21	43	28	37	91	2	4
DXTR725	TEXAS ICEMAN R725 PV	+78	-1.0	+1.8	-4.2	+3.7	+54	+100	+124	+99	+12	+2.4	-3.8	+74	+12.7	+3.0	+4.6	+0.4	+2.0	+0.22	+39	+1.30	+0.98	+0.60	$231	$374
USA18962396	HBR	77%	80%	60%	98%	98%	97%	97%	94%	87%	79%	95%	51%	82%	83%	82%	82%	77%	83%	66%	95%	87%	86%	83%		
DXTH647		46	76	64	53	43	37	27	39	55	87	39	70	30	4	5	3	54	55	51	4	99	52	1	20	30
USA18704096	THOMAS EDISON 6764 PV	+62	-2.5	+7.8	-0.3	+4.2	+63	+105	+139	+140	+14	+0.5	-4.5	+82	+11.4	-5.5	-8.2	+1.7	+2.2	-0.20	+20	+0.86	+1.02	+0.92	$213	$378
USA16933958	HBR	87%	74%	61%	94%	93%	91%	91%	91%	87%	85%	86%	53%	88%	87%	86%	86%	78%	89%	78%	82%	89%	88%	75%		
USA18048451		59	83	7	95	55	8	17	14	7	74	94	53	13	7	99	99	4	50	12	50	53	61	18	39	27
DBLL292	TOPBOS LEADING EDGE L292 PV	+41	+1.6	+7.4	-5.7	+6.6	+73	+126	+164	+147	+22	+1.4	-3.9	+83	+4.1	-2.8	-5.2	+0.2	+1.4	+0.06	+21	+0.94	+0.76	+0.78	$225	$410
USA16295688	HBR	90%	88%	74%	98%	98%	97%	97%	97%	95%	95%	97%	69%	93%	92%	90%	92%	87%	92%	86%	97%	92%	92%	88%		
VSNF04		75	57	9	30	93	1	1	1	5	14	75	67	12	76	94	98	66	72	33	49	69	9	3	26	9
NZE17691009	TURIHAUA CRUMP E5 SV	+23	-1.8	-1.8	-5.8	+3.3	+28	+59	+84	+94	+14	+1.3	-9.8	+16	-0.1	+5.2	+3.4	-0.2	+1.4	+0.48	+29	+0.62	+1.20	+1.18	$131	$261
NZE17691003Y167	HBR	93%	93%	86%	97%	98%	98%	98%	98%	97%	97%	97%	89%	95%	95%	95%	95%	94%	95%	88%	90%	84%	84%	79%		
NZE17691195Q263		86	80	88	28	34	99	99	97	63	71	78	1	99	98	1	6	84	72	77	18	11	91	89	97	94
USA18066037	V A R LEGEND 5019 SV	+82	-4.3	+4.9	-6.2	+5.3	+69	+122	+148	+158	+7	+2.8	-3.5	+88	+9.8	-4.2	-6.2	+1.4	+2.1	-0.29	+18	+1.04	+0.68	+0.88	$213	$392
USA17262835	HBR	87%	80%	68%	96%	96%	94%	94%	93%	90%	88%	90%	61%	90%	88%	87%	87%	80%	90%	80%	89%	97%	96%	81%		
USA16924432		42	90	30	23	78	2	2	7	2	98	26	76	7	15	99	99	8	52	8	60	85	3	11	39	18
NZE18954020	WAITANGI R257 PV	+183	+0.4	-1.4	-6.3	+3.6	+53	+93	+124	+105	+26	+3.2	-7.6	+67	+8.5	-0.5	-1.5	+0.0	+5.5	+1.39	+17	+0.84	+0.72	+0.96	$243	$395
NZE21159016327	HBR	73%	68%	58%	95%	95%	94%	90%	90%	85%	77%	84%	47%	79%	76%	77%	77%	70%	78%	64%	89%	76%	78%	69%		
NZE18954118P105		3	67	87	22	41	41	47	38	44	4	17	5	50	25	58	70	76	3	99	67	49	6	28	12	16
Breed Average EBVs		+75.	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.84	+0.97	+1.02	+200	+345

Angus Australia -   MSA Marbling Research Breeding Values

Ident	Name			Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
Sire / Dam	Reg.	MSA MBL RBV	Dir	Dtrs	GL	BW	200	400	600	MCW	Milk	SS	DC	CW	EMA	Rib	P8	RBY	IMF	NFI-F	Doc	Claw	Angle	Leg	$A	$A-L
BSCF73 WAITARA PIO FEDERAL F73 SV	HBR	+24	+4.6	+5.0	-4.3	+1.6	+56	+104	+135	+93	+25	+2.6	-2.8	+88	+5.7	-0.3	+0.1	+0.2	+1.5	+0.30	+12	+1.36	+1.20	+0.96	$215	$362
USA15688392		93%	90%	77%	98%	98%	97%	98%	97%	96%	96%	97%	70%	95%	94%	94%	94%	89%	94%	88%	96%	95%	95%	92%		
BSCZ66		86	29	29	52	9	25	18	18	65	6	32	87	7	57	53	41	66	69	60	84	99	91	28	36	39
BSCP90 WAITARA PRINCETON P90 PV	HBR	+108	+0.4	+5.1	-2.1	+3.7	+48	+93	+124	+77	+24	+2.4	-3.9	+80	+7.1	-0.1	+0.1	-0.2	+3.8	+0.63	+34	+0.60	+0.82	+1.08	$214	$340
GTNM6		88%	73%	62%	96%	95%	95%	95%	94%	91%	84%	92%	56%	89%	88%	87%	88%	80%	90%	81%	92%	92%	92%	89%		
BSCJ2		26	67	28	83	43	64	46	39	85	8	39	67	18	40	48	41	84	16	87	9	9	16	66	38	57
LEJ21S102 WALLAWONG SAFE & SOUND	HBR	+136	+6.0	+3.8	-6.2	+4.6	+49	+87	+111	+93	+18	+2.0	-2.9	+64	+6.8	-1.3	-1.3	+0.7	+4.0	+0.40	+15	+0.58	+0.76	+1.14	$211	$351
NJWN498		70%	72%	60%	92%	90%	89%	85%	85%	82%	76%	80%	44%	75%	70%	71%	72%	63%	74%	62%	84%	68%	68%	66%		
ASHL24		12	18	43	23	64	61	64	68	64	40	54	86	61	43	75	67	35	13	70	74	7	9	81	41	49
QKBP29 WARRAWEE PATROL P29 PV	HBR	+44	+6.7	+10.9	-12.0	+3.0	+55	+104	+139	+132	+19	+2.2	-9.3	+99	+9.1	+3.4	+1.8	+0.4	+1.8	+0.74	+28	+0.84	+1.22	+1.00	$267	$477
SMPG357		84%	79%	70%	96%	94%	93%	91%	90%	88%	82%	87%	64%	86%	84%	84%	85%	78%	86%	78%	88%	77%	78%	73%		
QKBM01		73	13	1	1	28	31	18	13	13	34	47	1	2	20	3	17	54	61	92	21	49	93	40	3	1
NWPG188 WATTLETOP FRANKLIN G188 SV	HBR	+10	+4.0	+5.9	-4.4	+2.3	+64	+109	+141	+116	+25	+3.8	-3.4	+82	+1.3	-1.5	-2.2	-0.1	+0.5	-1.20	+33	+1.10	+0.96	+0.94	$192	$355
USA15462648		93%	96%	87%	99%	99%	98%	98%	98%	98%	97%	98%	77%	96%	95%	95%	95%	93%	94%	88%	97%	96%	96%	94%		
NWPE295		92	34	20	50	17	6	10	12	28	7	8	78	13	94	79	80	81	90	1	10	91	47	23	63	45
CWDJ17 WEATHERLY JAMES J17 SV	HBR	+124	-3.9	-3.5	-3.3	+6.0	+49	+83	+109	+117	+2	+1.5	-4.3	+65	+8.5	+1.2	+2.3	+1.1	+3.4	-0.02	+5	+0.86	+1.24	+1.04	$197	$331
BNAD145		90%	79%	72%	93%	93%	92%	92%	93%	89%	87%	86%	67%	90%	89%	89%	90%	85%	91%	84%	87%	87%	87%	81%		
CWDF14		17	89	94	68	87	60	76	71	27	99	72	58	57	25	22	13	16	22	25	96	53	94	53	57	64
CWDM5 WEATHERLY MOXY M5 SV	HBR	+52	+3.6	+7.6	-4.7	+4.0	+56	+98	+131	+113	+28	+2.6	-5.6	+89	+7.2	+2.3	-0.6	+0.6	+2.4	+0.19	+20	+0.98	+1.06	+0.94	$232	$399
SMPG357		80%	79%	69%	93%	95%	94%	93%	94%	92%	89%	89%	60%	85%	83%	84%	84%	79%	84%	72%	91%	91%	91%	82%		
CWDJ15		66	38	8	45	50	28	33	26	33	3	32	27	6	39	9	54	41	44	47	50	76	70	23	19	14
Breed Average EBVs		+75.	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.84	+0.97	+1.02	+200	+345