TACE

TransTasman Angus Cattle Evaluation

ANGUS ImmuneDEX

RESEARCH BREEDING VALUES

DECEMBER 2022

BACKGROUND

Angus Australia has partnered with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to undertake research into the genetics of traits related to immune competence and resilience. An animal's resilience is defined as their capacity to cope with environmental challenges, especially those leading to disease, and to subsequently return to being productive.

This has involved collecting and analysing immune competence phenotypes on ~4000 Angus steers and heifers at weaning, primarily from the Angus Sire Benchmarking Program (ASBP). This information, combined with genotypes (i.e. DNA profiles), was analysed to determine genetic parameter estimates (heritabilities and correlations) and to produce Research Breeding Values for immune competence.

More specifically, immune competence was assessed by combining measures of antibody-mediated immune responses (Ab_IR), through a blood test, and cell-mediated immune responses (Cell_IR), through a skin reaction test. Pathogens, like the bacteria and viruses associated with Bovine Respiratory Disease (BRD), differ in the way they infect the host animal. For instance, many bacteria live outside host cells while viruses replicate within host cells. The immune system tailors how it responds to different pathogens with extra-cellular pathogens most effectively controlled by Ab_IR and intracellular pathogens most effectively controlled by Cell_IR.

Individuals identified as having a balanced ability to mount both a Cell_IR and Ab_IR response are expected to exhibit broad-based disease resistance against a wide range of pathogens. For this reason, an index value (ImmuneDEX) has been developed which combines research breeding values for the Cell_IR and Ab_IR traits into a single value. The process by which the ImmuneDEX value is generated ensures appropriate weightings are given to component traits so that high ImmuneDEX animals have a balanced response, and genetic gains in both traits are driven at similar rates.

The ImmuneDEX value is moderately heritable and negatively correlated with some of the production traits (e.g. carcase weight and eye muscle area), while being favourably correlated with the stress and temperament related traits.

Additionally, on a subset 1149 steers from this study, disease incidence during the feedlot feeding period was examined. Prior vaccination and minimal mixing with unfamiliar animals at feedlot entry provided a low disease risk environment in the study. Nonetheless, animals with superior immune competence phenotypes had significantly fewer health-related mortalities, and incurred substantially lower health related costs during feedlot finishing.

UNDERSTANDING THE ImmuneDEX RBV

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

The ImmuneDEX RBV provides an estimate of genetic differences between animals for overall immune competence, a key component of resilience.

Higher ImmuneDEX RBVs indicate an animal is expected to produce progeny with an enhanced ability to resist disease challenges and therefore have lower disease incidence. Lower ImmuneDEX RBVs indicate an animal is expected to produce progeny with a higher incidence of disease and associated production losses.

USING THE RESEARCH BREEDING VALUES IN SELECTION

The ImmuneDEX RBVs in this publication will enable Angus breeders to place selection emphasis on immune competence and resilience traits, while continuing selection for other traits of importance within their breeding objective.

It is important to note that the RBVs for AB_IR and Cell_IR that underpin the ImmuneDex values are subject to greater potential change than EBVs routinely reported as part of the TransTasman Angus Cattle Evaluation (TACE), and ImmuneDEX RBVs should be used with caution in animal selection decisions.

ImmuneDEX RBVs, and the component Research Breeding Values for AB_IR and Cell_IR, may change as improvements are made to the analytical models that are used, and as additional performance information is collected and methodologies for assessing resilience traits continue to evolve.

ACKNOWLEDGEMENTS

DISCLAIMER

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX IMD	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
NXOL172	**AJC L172** SV	+46	+6.8	+7.4	-8.2	+2.9	+60	+107	+148	+136	+15	+1.9	-4.8	+77	+5.9	-0.7	-0.3	+0.1	+1.2	-1.09	+26	+1.40	+1.32	+1.26	$220	$409
NXOF43	APR	69%	72%	54%	93%	95%	93%	93%	93%	85%	82%	78%	51%	90%	87%	82%	88%	80%	89%	80%	82%	85%	85%	81%		
NXOJ432		51	15	8	7	23	9	10	5	7	65	54	43	19	52	64	48	69	71	1	22	99	98	96	23	6
DGJG10	**ALLOURA GET CRACKING G10** SV	+53	+9.6	+8.7	-3.5	+2.5	+43	+75	+87	+75	+13	-0.2	-8.0	+48	+16.7	+1.5	-0.3	+1.0	+5.5	+0.44	+1	+0.46	+1.02	+0.92	$282	$436
VTMB1	HBR	69%	91%	78%	99%	98%	98%	98%	98%	97%	96%	97%	72%	95%	93%	93%	93%	89%	92%	87%	96%	95%	95%	93%		
DGJZ15		39	3	3	67	16	78	87	94	86	80	99	1	92	1	16	48	15	1	91	99	2	60	16	1	2
DGJL94	**ALLOURA LOCK STOCK &**	+44	+6.3	+5.5	-4.7	+3.0	+54	+88	+114	+107	+12	+0.9	-4.8	+60	+0.8	+1.2	-1.8	+0.3	+2.1	-0.47	+21	+0.96	+0.84	+0.92	$199	$355
USA15832750	HBR	64%	73%	58%	93%	94%	92%	92%	93%	87%	76%	85%	49%	86%	81%	77%	82%	74%	84%	73%	86%	84%	82%	76%		
DGJH24		55	18	22	47	24	28	54	54	37	87	88	43	65	96	21	75	56	42	4	40	72	19	16	44	36
WJMF96	**ARDCAIRNIE F96** SV	+21	+6.3	+4.2	-4.9	+3.0	+50	+91	+123	+94	+17	+1.9	-4.8	+69	+8.0	-1.5	-1.0	+1.1	+0.5	-0.42	+10	+0.52	+0.84	+0.88	$214	$363
WJMB59	HBR	55%	87%	75%	98%	98%	97%	97%	97%	95%	95%	96%	62%	92%	90%	90%	91%	86%	91%	79%	88%	87%	87%	82%		
WJMD25		90	18	35	43	24	46	44	35	61	53	54	43	38	27	80	61	12	88	6	90	4	19	9	29	30
WJMJ27	**ARDCAIRNIE J27** SV	+16	+7.8	+9.8	-8.7	+2.7	+57	+101	+142	+131	+11	+0.4	-4.7	+99	+2.2	+2.2	+1.1	-0.1	+0.9	+0.18	+1	+0.86	+1.06	+1.18	$208	$395
USA15354674	HBR	74%	80%	68%	96%	96%	95%	96%	96%	91%	89%	92%	63%	92%	91%	90%	91%	87%	92%	85%	83%	87%	87%	82%		
WJMG96		95	9	1	5	19	16	19	8	10	94	95	46	1	91	9	23	80	79	69	99	52	69	88	34	11
NAQA241	**ARDROSSAN EQUATOR A241** PV	+49	-1.1	+2.3	-4.9	+4.1	+50	+91	+121	+108	+20	+3.1	-7.1	+85	+8.8	-1.7	-0.6	+1.2	+1.2	+0.39	+26	+0.46	+0.86	+1.00	$215	$366
USA2928	HBR	80%	99%	97%	99%	99%	99%	99%	99%	99%	99%	99%	95%	98%	98%	98%	98%	98%	98%	96%	99%	99%	99%	999%		
NAQW38		46	76	54	43	48	49	44	38	36	23	15	4	8	20	83	54	9	71	88	22	2	22	38	27	27
NAQN329	**ARDROSSAN HOLBROOK N329**	+21	-0.7	-2.4	-3.6	+3.1	+50	+92	+118	+88	+23	+2.8	-6.6	+73	+6.6	+1.9	+2.2	-1.1	+4.6	+0.91	+14	+0.80	+0.98	+1.29	$220	$355
NAQH318	HBR	54%	71%	57%	96%	94%	93%	92%	91%	84%	70%	77%	50%	88%	87%	86%	87%	78%	89%	79%	79%	81%	87%	83%		
NAQK30		90	74	88	66	26	48	39	45	71	10	21	8	29	43	11	11	99	3	99	79	39	50	45	23	35
NAQH255	**ARDROSSAN HONOUR H255** PV	+27	-0.5	-1.1	-3.1	+4.6	+44	+74	+99	+89	+13	+2.1	-6.7	+60	+5.8	+1.0	-0.8	+0.4	+2.3	+0.82	+5	+0.46	+1.02	+1.24	$182	$307
NORE11	HBR	81%	95%	86%	99%	99%	98%	98%	98%	98%	98%	98%	82%	96%	95%	96%	96%	94%	95%	91%	97%	97%	97%	95%		
NAQD17		82	72	82	73	60	76	88	83	68	81	46	7	66	53	24	57	49	37	99	97	2	60	95	64	71
QQFH147	**ASCOT HALLMARK H147** PV	+47	-5.0	+3.2	-5.2	+7.3	+60	+109	+153	+136	+15	+3.5	-5.9	+85	-2.3	+0.7	+0.5	-0.9	+2.5	+0.38	+15	+0.44	+0.80	+1.00	$188	$350
VTME343	HBR	72%	94%	82%	98%	99%	98%	98%	98%	97%	97%	98%	75%	95%	94%	94%	94%	92%	94%	87%	97%	94%	94%	92%		
NMMF123		49	91	45	38	96	10	8	3	7	67	17	7	99	30	33	98	32	88	73	1	13	38	58	39
HIOE7	**AYRVALE BARTEL E7** PV	+41	+10.3	+10.9	-5.1	+1.7	+49	+86	+112	+73	+26	+2.4	-8.1	+67	+8.4	-0.3	+1.1	+1.0	+3.6	+0.32	+3	+1.00	+0.98	+1.10	$290	$449
VTMB219	HBR	85%	99%	96%	99%	99%	99%	99%	99%	99%	99%	99%	92%	98%	98%	98%	98%	98%	98%	95%	99%	99%	99%	98%		
BVVB32		60	2	1	40	8	51	58	58	88	3	34	1	45	23	54	23	15	11	83	98	79	50	71	1	1
HIOG11	**AYRVALE GENETIC G11** PV	+24	-4.1	-16.4	-5.7	+5.1	+65	+118	+162	+142	+19	+1.9	-5.7	+82	-0.1	-3.5	-2.2	-0.5	+2.3	-0.34	+35	+1.12	+1.04	+1.16	$190	$341
SEWD138	HBR	67%	86%	75%	98%	98%	97%	97%	97%	96%	95%	94%	59%	92%	89%	90%	91%	85%	91%	80%	87%	87%	88%	82%		
HIOE2		86	88	99	31	71	3	2	2	5	29	54	21	11	98	98	81	93	37	9	6	92	65	85	56	46
NBBN47	**BALD BLAIR NELSON N47** PV	+25	+5.1	-0.6	-5.5	+4.4	+58	+108	+158	+160	+20	+1.1	-3.7	+89	+5.2	-1.2	-1.7	+0.7	+0.6	-0.43	+33	+1.08	+1.14	+1.14	$183	$369
HIOG18	HBR	50%	73%	59%	95%	94%	92%	92%	91%	86%	74%	88%	52%	86%	85%	85%	86%	78%	87%	78%	84%	85%	85%	81%		
NBBL83		85	28	79	34	55	14	8	2	1	25	83	73	5	61	74	73	30	86	5	8	88	84	81	63	25
ECMM114	**BANNABY BERKLEY M114** SV	+14	+4.1	+5.7	-10.6	+4.4	+61	+100	+145	+170	+5	+4.7	-8.2	+73	+2.7	-0.8	-3.6	+0.2	+1.7	-0.30	+25	+0.94	+0.84	+1.18	$196	$410
VTMB1	HBR	52%	74%	65%	95%	93%	90%	91%	91%	84%	73%	84%	63%	84%	83%	83%	84%	77%	85%	75%	78%	85%	85%	81%		
BBAZ107		97	36	20	1	55	8	20	6	1	99	1	1	29	88	66	94	63	55	11	25	69	19	88	49	6
	Breed Average EBVs	+47	+1.9	+2.3	-4.6	+4.2	+49	+89	+116	+100	+17	+2.1	-4.6	+65	+6.2	-0.1	-0.4	+0.4	+2.0	+0.05	+20	+0.85	+0.98	+1.03	+191	+331

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Ident / Sire / Dam	Name / Reg.	ImmuneDEX IMD	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
ECMK63	**BANNABY REALITY K63** PV	+74	+4.6	+4.0	-3.3	+3.6	+45	+78	+100	+98	+12	+1.8	-1.4	+52	+6.2	-0.7	-1.4	+0.6	+0.9	-0.29	+40	+0.54	+1.06	+1.18	$139	$267
NZE14647008839	HBR	68%	77%	65%	96%	96%	92%	91%	92%	85%	75%	81%	59%	89%	87%	87%	88%	83%	90%	82%	83%	84%	84%	80%		
ECMH45		11	32	37	70	37	73	80	80	52	88	58	97	85	48	64	68	36	79	12	3	4	69	88	92	89
ECMN187	**BANNABY REALITY N187** SV	+58	+8.6	+7.7	-7.2	+3.7	+47	+75	+90	+78	+10	+3.9	-6.5	+54	+8.8	+2.6	+3.4	+0.1	+2.9	+0.29	+8	+0.86	+1.14	+1.38	$231	$381
NZE14647008839	HBR	50%	73%	64%	94%	92%	90%	91%	91%	84%	73%	86%	60%	86%	86%	85%	86%	78%	87%	78%	82%	86%	86%	83%		
ECMF113		32	6	7	13	39	60	86	92	84	95	5	9	82	20	6	4	69	22	81	94	52	84	99	14	18
NUIF32	**BONNY BROOKE FALCO F32** SV	+49	-8.0	-5.8	-0.1	+6.4	+53	+81	+113	+99	+19	+0.0	-3.3	+67	-1.6	+3.8	+4.0	-1.3	+2.0	-0.58	+7	+1.06	+0.94	+1.10	$132	$229
NGMC196	HBR	53%	63%	48%	90%	88%	89%	88%	89%	81%	71%	66%	50%	83%	80%	81%	82%	72%	79%	70%	77%	79%	79%	74%		
NUID96		46	96	97	97	90	34	73	57	52	34	98	82	47	99	2	3	99	45	2	96	86	40	71	94	96
HCAG013	**BOONAROO GRAVITY G013** PV	+86	+5.5	+0.9	-5.8	+3.6	+50	+88	+116	+105	+26	+3.8	-6.6	+56	+5.0	-3.0	-3.1	+1.1	+2.7	-0.61	+11	+0.44	+0.88	+1.08	$216	$371
VTMA217	HBR	70%	87%	78%	98%	98%	97%	97%	97%	93%	93%	96%	69%	92%	90%	90%	91%	85%	89%	83%	93%	93%	93%	91%		
VTMZ618		2	24	68	29	37	49	53	50	40	3	5	8	77	64	96	90	12	27	2	87	1	26	65	27	24
NGME124	**BOOROOMOOKA INSPIRED E124**	+16	-5.4	+0.4	-6.6	+3.7	+46	+82	+108	+99	+14	+0.9	-7.4	+77	+3.5	-0.3	+3.3	-0.5	+2.3	+0.59	+24	+0.82	+0.84	+0.78	$183	$313
NAQA241	HBR	73%	96%	90%	99%	99%	98%	98%	98%	98%	98%	98%	82%	96%	95%	96%	96%	94%	95%	88%	98%	97%	97%	96%		
NGMB325		95	92	72	19	39	67	71	67	51	73	88	3	19	81	54	5	93	37	97	28	43	19	2	62	67
NGMN418	**BOOROOMOOKA JACKPOT N418**	+24	+2.5	+4.5	-8.7	+5.8	+62	+112	+141	+127	+14	+3.1	-7.3	+88	+11.3	+0.4	+0.9	+0.9	+1.7	+0.02	+28	+1.36	+1.06	+0.98	$274	$460
WWEL3	HBR	50%	73%	60%	94%	95%	94%	94%	93%	87%	74%	89%	52%	84%	83%	83%	83%	76%	85%	75%	94%	90%	89%	84%		
NGML471		86	50	32	5	83	6	5	9	12	73	15	3	6	7	37	26	19	55	47	16	99	69	32	1	1
NGMK9	**BOOROOMOOKA KINGY K9** PV	+25	-5.6	-6.9	-2.2	+6.6	+49	+85	+122	+115	+19	+2.8	-7.5	+67	+8.6	+1.0	-0.3	+0.3	+4.4	+0.41	+13	+0.70	+0.90	+0.86	$206	$341
BNAD145	HBR	68%	87%	78%	97%	98%	97%	97%	97%	96%	94%	95%	68%	92%	90%	90%	90%	88%	90%	82%	97%	95%	95%	90%		
NGMA281		85	92	98	84	92	52	61	37	26	35	21	2	45	22	24	48	56	4	89	83	20	31	7	37	46
NGML173	**BOOROOMOOKA LEROY L173** SV	+78	+0.9	+6.5	-5.6	+5.2	+58	+103	+130	+125	+7	+2.0	-4.5	+61	+0.0	-1.4	-1.9	-0.1	+2.5	+0.23	+18	+0.90	+0.90	+1.08	$196	$360
VTME343	HBR	68%	77%	68%	96%	95%	94%	94%	94%	92%	84%	91%	63%	89%	88%	84%	88%	83%	89%	81%	94%	93%	92%	87%		
NGME389		7	63	14	32	73	15	15	21	15	99	50	52	64	98	78	77	80	32	74	55	61	31	65	49	31
NGMP96	**BOOROOMOOKA PARAGON P96**	+15	+0.0	+2.9	-7.1	+3.4	+58	+114	+156	+129	+28	+3.1	-8.0	+104	+12.7	-1.3	-0.2	+1.1	+2.9	+0.42	+40	+0.92	+1.00	+1.12	$283	$468
WWEL3	HBR	52%	79%	62%	97%	98%	96%	94%	92%	83%	71%	88%	53%	79%	74%	76%	76%	71%	76%	64%	95%	84%	84%	78%		
NGMM566		96	69	48	14	32	14	4	2	11	1	15	1	1	3	76	46	12	22	90	3	65	56	76	1	1
BOWK2	**BOWMAN AUSTRALIA K2** PV	+42	+5.3	+2.5	-6.8	+4.0	+48	+94	+121	+97	+19	+4.6	-7.8	+68	+7.1	+0.3	-1.4	+0.8	+1.1	-0.61	+31	+0.82	+0.98	+0.92	$222	$383
VTME343	HBR	74%	75%	70%	92%	89%	88%	88%	88%	83%	78%	76%	65%	86%	86%	86%	86%	81%	88%	79%	81%	84%	84%	81%		
NAQZ31		58	26	53	17	46	56	34	39	54	31	2	2	44	37	39	68	24	74	2	10	43	50	16	21	17
SRKK306	**BOWMONT KING K306** PV	+31	-0.6	-9.1	-5.6	+4.6	+51	+81	+106	+84	-2	-0.3	-5.2	+68	+15.8	-0.5	-1.8	+1.6	+5.1	+0.47	+28	+0.52	+0.92	+0.82	$258	$375
NJWG279	HBR	69%	84%	72%	97%	97%	96%	97%	96%	93%	91%	95%	65%	92%	91%	91%	92%	89%	92%	84%	94%	89%	89%	85%		
TFAD58		76	73	99	32	60	41	73	71	76	99	99	32	41	1	59	75	3	2	92	17	4	35	4	3	21
QBUG49	**BURENDA GEIGER COUNTER**	+11	+9.5	+10.2	-7.7	+2.2	+38	+78	+101	+83	+18	+2.1	-8.1	+58	+2.8	+0.9	-1.5	+0.0	+3.9	+0.01	+33	+1.04	+1.22	+0.96	$214	$373
VTMB1	HBR	69%	85%	74%	96%	97%	95%	96%	94%	94%	93%	94%	67%	91%	90%	90%	91%	85%	89%	83%	95%	85%	85%	82%		
QBUE5		98	3	1	10	13	93	81	79	78	41	46	1	72	87	26	70	75	8	45	8	84	92	26	28	22
WLHD19	**CHERYLTON STEWIE D19** PV	+26	+2.8	+1.5	-5.1	+3.2	+45	+91	+114	+99	+20	+2.1	-5.2	+60	+3.7	-1.5	+1.5	-0.3	+3.5	+0.24	+16	+1.02	+1.00	+1.04	$199	$346
USA13058662	HBR	73%	93%	85%	98%	98%	98%	98%	98%	97%	97%	97%	73%	95%	94%	94%	95%	91%	94%	87%	96%	95%	95%	92%		
USA14311946		83	47	62	40	28	69	42	54	52	23	46	32	67	79	80	18	88	12	76	66	81	56	52	45	42
	Breed Average EBVs	+47	+1.9	+2.3	-4.6	+4.2	+49	+89	+116	+100	+17	+2.1	-4.6	+65	+6.2	-0.1	-0.4	+0.4	+2.0	+0.05	+20	+0.85	+0.98	+1.03	+191	+331

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX IMD	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	Structural Claw	Structural Angle	Structural Leg	Sel Index $A	Sel Index $A-L
GTNM3	**CHILTERN PARK MARBLES M3**	+18	+3.8	-3.2	-6.0	+2.4	+41	+76	+95	+60	+28	+3.2	-7.0	+56	+4.1	-0.1	-3.0	+0.1	+3.5	-0.23	+11	+0.54	+1.08	+1.16	$196	$310
NORE11	HBR	81%	80%	70%	96%	96%	95%	95%	95%	89%	84%	89%	65%	90%	89%	85%	89%	82%	91%	82%	88%	92%	92%	89%		
GTNJ4		93	39	91	27	15	85	84	87	96	1	13	5	78	75	49	89	69	12	16	88	4	73	85	49	69
GTNP9	**CHILTERN PARK PICASSO P9** PV	+37	+9.9	+6.7	-4.0	+1.3	+58	+105	+136	+101	+23	+3.5	-7.4	+98	+7.5	-0.7	+0.9	-0.5	+4.5	+0.35	+36	+0.78	+0.70	+0.86	$279	$460
HKFJ5	HBR	53%	75%	62%	97%	96%	91%	92%	91%	84%	71%	87%	54%	84%	82%	82%	83%	76%	85%	71%	75%	78%	79%	76%		
GTNK26		66	3	12	59	6	16	12	14	48	9	8	3	2	32	64	26	93	4	85	5	35	4	7	1	1
THCL61	**CLUDEN NEWRY ELEVATOR L61**	+19	-3.0	-2.1	-3.9	+6.3	+63	+125	+158	+161	+19	+1.5	-3.3	+103	+10.1	-3.6	-1.1	+1.4	-1.3	+0.03	+40	+0.68	+0.92	+0.96	$190	$367
WDCE11	HBR	71%	76%	65%	93%	95%	93%	94%	94%	89%	82%	88%	60%	89%	88%	84%	88%	82%	89%	80%	91%	92%	92%	89%		
THCF92		92	85	87	61	89	5	1	2	1	31	70	82	1	12	98	63	5	99	48	3	17	35	26	56	26
QMUM13	**CLUNES CROSSING DUSTY M13**	+35	+1.3	+3.3	-7.9	+5.4	+66	+103	+121	+76	+15	+1.1	-8.0	+70	+14.1	-2.3	-4.3	+1.6	+1.6	-0.02	+11	+0.94	+0.86	+1.00	$305	$447
USA16295688	HBR	50%	90%	78%	99%	99%	98%	98%	98%	96%	93%	98%	64%	93%	92%	91%	92%	86%	92%	83%	97%	96%	96%	94%		
QMUG1		70	60	44	8	76	3	15	38	86	64	83	1	35	2	91	97	3	58	41	87	69	22	38	1	1
NBHK330	**CLUNIE RANGE KALUHA K330** PV	+3	-0.6	-9.9	-5.9	+5.1	+53	+95	+124	+107	+18	+1.1	-7.3	+92	+10.4	+0.9	-0.4	+1.1	+3.1	+0.18	+3	+0.74	+0.98	+1.16	$244	$386
NJWG279	HBR	71%	81%	69%	97%	97%	96%	96%	96%	91%	85%	95%	64%	92%	90%	90%	91%	88%	92%	84%	93%	87%	87%	85%		
NBHH381		99	73	99	28	71	31	32	32	38	45	83	3	3	10	26	50	12	19	69	98	27	50	85	7	15
NBHL348	**CLUNIE RANGE LEGEND L348** PV	+17	-5.8	+4.2	-8.2	+6.1	+59	+103	+129	+154	+0	+3.0	-5.4	+64	+0.8	+3.6	+1.2	-0.9	+2.2	-0.04	+25	+0.48	+0.78	+1.28	$158	$330
NZE14647008839	HBR	68%	92%	81%	99%	99%	98%	98%	98%	97%	96%	98%	69%	94%	92%	92%	92%	89%	92%	83%	97%	96%	97%	95%		
AHWJ81		94	93	35	7	87	11	15	24	2	99	17	27	56	96	2	22	98	39	38	26	2	10	98	83	55
WDCH249	**COONAMBLE HECTOR H249** SV	+33	+0.4	-2.3	-8.7	+4.5	+45	+81	+102	+88	+4	+1.2	-4.1	+48	+11.5	+3.4	+4.2	+0.9	-0.1	-0.59	+42	+0.44	+0.52	+0.82	$188	$312
USA14885809	HBR	70%	94%	82%	99%	99%	98%	98%	98%	97%	97%	98%	72%	95%	93%	94%	94%	91%	94%	85%	98%	95%	96%	92%		
WDCE9		73	66	88	5	58	69	74	78	70	99	80	63	92	6	3	2	19	96	2	2	1	1	4	57	68
WDCJ266	**COONAMBLE JUNIOR J266** PV	+71	-8.3	-6.6	-0.6	+5.6	+58	+104	+143	+129	+17	+2.3	-5.3	+103	+11.0	-4.8	-4.8	+1.5	+2.2	-0.44	+9	+0.92	+0.78	+1.08	$201	$337
BNAD145	HBR	76%	88%	77%	98%	98%	97%	97%	97%	94%	95%	96%	70%	92%	91%	91%	91%	87%	91%	85%	93%	94%	94%	90%		
WHHA61		14	97	98	95	80	14	13	8	11	50	38	29	1	8	99	98	4	39	5	92	65	10	65	43	49
WDCK314	**COONAMBLE KEVIN K314** PV	+99	-1.9	+1.9	-2.1	+5.2	+55	+105	+135	+115	+23	+4.1	-5.9	+90	+6.6	+0.4	+1.1	+0.0	+1.3	+0.19	+24	+0.46	+1.08	+1.22	$206	$362
NAQA241	HBR	65%	84%	71%	95%	97%	96%	94%	96%	91%	90%	92%	65%	90%	88%	89%	89%	85%	90%	80%	81%	85%	85%	81%		
WDCD94		1	80	58	85	73	23	12	15	25	9	3	17	4	43	37	23	75	67	70	27	2	73	93	37	30
BHRE614	**DUNOON EVIDENT E614** PV	+19	-11.8	-17.7	+0.0	+5.9	+52	+90	+111	+109	+14	+3.6	-6.0	+58	+11.2	-2.7	-1.4	+1.6	+1.6	+0.28	+44	+0.90	+1.10	+0.88	$171	$274
VTMB219	HBR	70%	97%	90%	99%	99%	99%	99%	99%	98%	98%	98%	83%	97%	96%	97%	97%	95%	96%	90%	98%	96%	96%	94%		
BHRB681		92	99	99	97	84	38	46	60	34	77	7	15	73	7	94	68	3	58	80	2	61	77	9	74	87
USA16198796	**EF COMPLEMENT 8088** PV	+15	+5.7	+9.4	-5.2	+2.9	+53	+97	+129	+96	+21	+1.3	-6.7	+76	+7.5	+1.2	+1.8	+0.3	+1.7	+0.43	+22	+0.96	+1.30	+1.14	$255	$420
USA14686137	HBR	85%	98%	92%	99%	99%	99%	99%	99%	99%	99%	99%	89%	98%	97%	97%	97%	97%	97%	92%	99%	99%	99%	98%		
USA15452880		96	23	2	38	23	34	26	23	57	17	77	7	22	32	21	14	56	55	90	37	72	97	81	3	4
WWEQ15	**ESSLEMONT GARTH Q15** PV	+36	-1.5	+3.6	-10.0	+5.9	+62	+106	+147	+133	+28	+2.5	-6.6	+69	+7.8	-3.6	-3.6	+0.7	+3.0	-0.51	+40	+0.94	+1.12	+1.04	$237	$406
VTMG67	HBR	52%	70%	59%	91%	89%	86%	80%	80%	77%	69%	74%	52%	72%	67%	69%	69%	64%	70%	62%	82%	69%	69%	68%		
WWEN17		68	78	41	2	84	8	10	6	8	1	31	8	39	29	98	94	30	20	3	3	69	81	52	10	7
WWEL3	**ESSLEMONT LOTTO L3** PV	+8	-5.3	-3.0	-5.7	+4.4	+59	+108	+139	+135	+20	+3.4	-9.5	+90	+14.5	+0.4	+1.0	+1.2	+3.7	+0.16	+16	+1.14	+1.04	+1.14	$281	$458
HIOG18	HBR	77%	95%	86%	99%	99%	98%	99%	99%	98%	97%	98%	76%	96%	95%	95%	95%	93%	95%	90%	98%	98%	98%	97%		
WWEJ8		99	92	91	31	55	11	8	11	7	23	10	1	4	1	37	25	9	10	66	70	93	65	81	1	1
Breed Average EBVs		+47	+1.9	+2.3	-4.6	+4.2	+49	+89	+116	+100	+17	+2.1	-4.6	+65	+6.2	-0.1	-0.4	+0.4	+2.0	+0.05	+20	+0.85	+0.98	+1.03	+191	+331

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX IMD	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
WWEQ24	**ESSLEMONT QUOKKA Q24** PV	+53	+5.9	+1.4	-3.3	+2.4	+45	+84	+108	+67	+22	+4.2	-6.2	+64	+20.5	+0.8	+0.1	+2.2	+2.8	-0.90	+34	+0.78	+0.92	+0.96	$280	$418
WWEN12	HBR	52%	68%	53%	93%	92%	89%	85%	83%	79%	65%	80%	45%	73%	70%	73%	73%	67%	73%	58%	84%	60%	60%	60%		
WWEN7		39	21	63	70	15	72	66	66	93	12	3	12	56	1	28	40	1	24	99	6	35	35	26	1	4
USA16295688	**G A R PROPHET** SV	+43	+3.4	+4.8	-1.0	+3.6	+66	+106	+132	+85	+25	+0.7	-6.7	+70	+3.7	-0.7	-1.3	-0.8	+4.6	+0.51	+27	+1.00	+0.82	+0.90	$279	$429
USA13009379	HBR	88%	98%	92%	99%	99%	99%	99%	99%	98%	98%	99%	88%	98%	97%	97%	97%	96%	97%	93%	99%	99%	99%	98%		
USA15129456		56	42	28	94	37	3	10	19	74	5	92	7	36	79	64	67	97	3	94	18	79	16	12	1	2
USA17328461	**G A R SURE FIRE** SV	+96	+7.4	+2.6	-3.1	+2.5	+51	+91	+110	+80	+18	+4.1	-6.8	+63	+7.6	-0.5	-0.3	+0.7	+3.1	-0.34	+27	+1.16	+0.92	+0.64	$254	$406
USA16205036	HBR	79%	94%	81%	99%	99%	98%	98%	98%	97%	98%	98%	75%	96%	95%	95%	95%	94%	95%	87%	95%	99%	99%	91%		
USA16431932		1	12	52	73	16	43	44	63	82	42	3	6	59	31	59	48	30	19	9	18	94	35	1	4	7
ASRM9	**GATES MENTOR M9** SV	+40	+2.0	+4.7	-3.0	+6.2	+63	+112	+148	+134	+20	+4.1	-7.0	+88	+11.5	-5.0	-5.8	+1.8	+3.0	+0.29	+9	+1.00	+1.16	+1.18	$272	$458
HIOE7	HBR	54%	74%	63%	95%	93%	90%	90%	90%	84%	79%	81%	57%	85%	82%	82%	83%	75%	85%	76%	79%	81%	82%	78%		
ASRK93		61	54	29	75	88	6	5	5	8	26	3	5	5	6	99	99	2	20	81	93	79	86	88	1	1
QBGH221	**GLENOCH HINMAN H221** SV	+69	+4.8	-2.8	-3.3	+3.2	+54	+92	+127	+113	+21	+1.1	-3.9	+86	+6.4	-2.5	-5.2	+0.4	+5.3	-0.54	+16	+0.88	+0.80	+1.04	$211	$358
BNAD145	HBR	70%	82%	71%	97%	97%	96%	96%	96%	90%	91%	95%	67%	91%	90%	90%	90%	86%	91%	82%	82%	88%	88%	84%		
QBGD80		16	30	90	70	28	27	41	27	28	19	83	69	7	45	93	99	49	2	3	66	57	13	52	31	33
DKKM41	**HARDHAT H708 MAIMURU J51**	+86	+3.8	+3.3	-2.5	+2.3	+45	+89	+116	+96	+12	+1.2	-3.5	+61	+3.0	+0.9	-2.7	-0.5	+6.5	+0.02	+23	+1.02	+1.02	+1.12	$201	$342
NORH708	APR	50%	69%	54%	94%	92%	89%	89%	90%	83%	69%	77%	56%	87%	87%	86%	87%	78%	89%	81%	84%	88%	88%	85%		
DKKJ51		2	39	44	81	14	70	51	49	57	90	80	78	63	86	26	87	93	1	47	31	81	60	76	43	45
NHZF1023	**HAZELDEAN F1023** SV	+42	+6.0	+3.2	-3.3	+3.2	+42	+79	+92	+75	+12	+3.9	-6.0	+52	+9.5	+3.2	+0.0	-0.1	+6.1	+1.20	+7	+0.54	+1.00	+1.04	$232	$373
VTMB1	APR	68%	88%	75%	98%	98%	97%	98%	97%	94%	92%	97%	71%	94%	92%	92%	92%	87%	93%	85%	96%	96%	96%	93%		
NHZB723		58	21	45	70	28	82	79	91	87	89	5	15	86	15	3	42	80	1	99	95	4	56	52	13	23
NHZJ140	**HAZELDEAN JAIPUR J140** SV	+86	+8.7	+8.2	-4.9	+1.9	+39	+74	+105	+82	+27	+3.2	-5.6	+70	+5.0	-1.1	-1.5	+0.9	+2.5	+1.00	+55	+0.28	+0.82	+1.02	$195	$339
NAQA241	HBR	73%	91%	76%	98%	98%	98%	98%	98%	95%	96%	98%	80%	95%	93%	93%	94%	91%	93%	86%	98%	97%	97%	95%		
NHZC33		2	6	5	43	10	89	87	73	79	2	13	23	36	64	73	70	19	32	99	1	1	16	45	50	48
NHZK416	**HAZELDEAN KATZEN K416** SV	+19	+9.9	+3.5	-11.5	+2.2	+56	+95	+124	+112	+20	+3.7	-9.6	+74	+0.9	+4.3	+2.7	-0.8	+0.8	+0.17	+53	+1.06	+1.04	+1.06	$223	$407
NORE11	APR	73%	86%	73%	98%	98%	97%	97%	97%	93%	92%	97%	68%	93%	91%	89%	92%	86%	93%	86%	96%	95%	95%	92%		
NHZH342		92	3	42	1	13	21	33	33	29	92	7	1	24	96	1	7	97	81	67	1	86	65	58	20	7
NHZM586	**HAZELDEAN M586** SV	+71	+8.5	+9.3	-8.7	+2.5	+52	+89	+121	+99	+16	+4.2	-8.5	+74	+7.5	+0.4	+0.1	-0.3	+5.6	+0.82	+53	+0.52	+0.96	+1.12	$271	$451
NHZJ140	APR	51%	80%	61%	97%	97%	96%	96%	95%	89%	76%	95%	57%	91%	88%	88%	89%	80%	90%	81%	89%	91%	91%	87%		
NHZH356		14	6	2	5	16	39	48	39	51	60	3	1	25	32	37	40	88	1	99	1	4	45	76	1	1
NHZQ319	**HAZELDEAN Q319** PV	+70	+8.3	+9.6	-9.0	+2.8	+60	+114	+152	+139	+19	+3.4	-9.5	+94	+4.5	+1.4	+0.4	-1.0	+5.0	+0.10	+32	+0.86	+1.12	+1.08	$280	$501
NHZM586	APR	51%	59%	45%	84%	79%	77%	76%	76%	72%	62%	77%	41%	68%	65%	66%	67%	59%	69%	59%	55%	69%	64%	60%		
NHZL1175		15	7	2	4	21	10	4	3	6	29	10	1	2	70	17	34	99	2	58	10	52	81	65	1	1
CJMM8	**HIGH SPA M8** SV	+5	+2.5	+3.2	-7.0	+3.9	+50	+89	+124	+106	+14	+2.0	-4.3	+75	+5.2	-2.8	-2.8	+1.0	+0.3	+0.22	+18	+0.90	+1.10	+0.92	$176	$319
USA15354674	APR	69%	71%	60%	94%	91%	90%	88%	88%	82%	75%	78%	57%	86%	84%	80%	85%	78%	87%	77%	79%	81%	81%	77%		
CJMF9		99	50	45	15	43	47	50	32	38	76	50	58	23	61	95	88	15	91	73	58	61	77	16	70	63
BCHE11	**J & C EVIDENCE E11** SV	+13	-15.7	-11.8	-6.1	+8.9	+59	+107	+124	+116	+11	+2.6	-5.2	+94	+8.2	-3.8	-1.0	+1.4	+0.0	+0.47	+17	+1.10	+0.78	+1.06	$166	$272
BCHA10	HBR	62%	79%	66%	95%	97%	95%	95%	94%	90%	88%	89%	58%	90%	88%	88%	89%	82%	89%	79%	85%	81%	81%	73%		
BCHA2		97	99	99	25	99	12	10	32	24	93	27	32	2	25	99	61	5	95	92	63	90	10	58	78	88
Breed Average EBVs		+47	+1.9	+2.3	-4.6	+4.2	+49	+89	+116	+100	+17	+2.1	-4.6	+65	+6.2	-0.1	-0.4	+0.4	+2.0	+0.05	+20	+0.85	+0.98	+1.03	+191	+331

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX IMD	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
NKLL76 / NKLJ82 / NKLG225	KANSAS JUDD L76 SV / HBR	+28	+0.5	+2.5	-3.0	+6.6	+57	+103	+140	+118	+20	+3.0	-3.7	+87	+6.6	-2.5	-0.2	+0.8	+2.8	-0.23	+35	+1.24	+1.14	+0.88	$226	$379
		68%	64%	46%	91%	88%	86%	86%	88%	80%	63%	70%	46%	87%	87%	86%	87%	83%	89%	79%	78%	84%	84%	78%		
		81	66	53	75	92	18	15	10	21	22	17	73	6	43	93	46	24	24	16	6	98	84	9	18	19
KILK18 / USA16417285 / USA15107929	KILLAIN ALASKA K18 PV / HBR	+26	-10.1	-5.8	+0.2	+7.0	+65	+121	+163	+172	+16	+3.8	-2.4	+90	+4.9	-2.9	-4.6	+0.8	-1.4	-0.89	+24	+1.18	+0.88	+0.98	$114	$271
		53%	69%	55%	88%	86%	85%	85%	86%	80%	75%	76%	47%	82%	82%	82%	83%	80%	85%	72%	68%	76%	77%	66%		
		83	98	97	98	95	4	2	1	1	62	5	93	4	65	96	98	24	99	1	27	96	26	32	97	88
BLAP130 / SRKK306 / BLAK113	KNOWLA PACKER P130 PV / HBR	+16	+3.0	+0.4	-4.5	+5.0	+58	+105	+143	+119	+10	+0.9	-5.3	+87	+9.3	+0.4	+0.1	+0.6	+2.8	+0.20	+17	+0.82	+1.24	+1.06	$252	$418
		51%	67%	54%	90%	88%	82%	78%	80%	76%	68%	76%	45%	70%	66%	68%	68%	63%	69%	60%	72%	68%	68%	66%		
		95	46	72	50	69	15	12	7	20	96	88	29	6	16	37	40	36	24	71	61	43	94	58	4	4
BLAP91 / HIOG18 / BLAL06	KNOWLA PEPPER P91 PV / HBR	+22	+5.9	+4.3	-6.2	+3.9	+59	+115	+148	+155	+12	+1.5	-8.3	+78	+7.8	+1.8	+1.4	+0.6	+2.3	+0.28	-2	+1.02	+1.06	+0.78	$268	$485
		53%	72%	60%	94%	93%	90%	84%	83%	79%	71%	76%	52%	75%	68%	70%	70%	65%	71%	62%	84%	69%	73%	70%		
		89	21	34	24	43	12	4	5	2	89	70	1	16	29	12	19	36	37	80	99	81	69	2	1	1
VLYN131 / USA16295688 / VLYL710	LAWSONS CHARLIE N131 SV / HBR	+56	-5.1	-2.8	-4.4	+5.7	+74	+133	+165	+136	+25	+3.5	-5.6	+80	+6.0	-2.0	-2.5	+0.0	+1.2	+0.20	+31	+0.88	+0.76	+0.90	$237	$404
		56%	75%	65%	95%	96%	93%	91%	89%	84%	71%	86%	56%	85%	83%	84%	84%	77%	86%	76%	90%	89%	88%	84%		
		35	91	90	52	82	1	1	1	7	4	8	23	14	51	88	84	75	71	71	11	57	8	12	10	7
VLYL483 / HKFJ5 / VLYH221	LAWSONS LINKEDIN L483 SV / HBR	+55	+5.8	-7.7	-1.3	+3.8	+58	+108	+153	+138	+28	+4.1	-5.3	+105	+9.8	-0.5	+2.4	+0.3	+1.4	-0.42	+22	+0.96	+0.78	+0.86	$220	$396
		67%	84%	73%	98%	98%	97%	97%	96%	94%	93%	94%	65%	91%	88%	86%	90%	83%	90%	79%	87%	84%	84%	80%		
		36	22	99	92	41	15	8	3	6	2	3	29	1	13	59	9	56	64	6	36	72	10	7	23	10
VLYE398 / USA15464043 / VLYB887	LAWSONS NADAL E398 SV / HBR	+71	-7.5	-4.1	-1.6	+5.9	+56	+93	+108	+130	-7	+1.2	-5.9	+66	+12.6	-0.4	-1.4	+1.6	+0.5	+0.24	+1	+0.86	+0.82	+0.92	$187	$330
		64%	88%	76%	98%	98%	97%	97%	97%	95%	96%	95%	65%	93%	91%	91%	91%	87%	91%	82%	84%	82%	83%	77%		
		14	96	94	90	84	20	39	66	10	99	80	17	48	3	56	68	3	88	76	99	52	16	16	58	55
VLYP316 / USA16295688 / VLYM527	LAWSONS PROPHET P316 PV / HBR	+16	+4.8	+4.4	-1.5	+3.6	+59	+93	+115	+73	+18	+1.1	-5.9	+70	+11.7	-3.7	-4.0	+1.4	+3.5	+0.22	+29	+0.70	+0.68	+0.84	$285	$421
		58%	72%	60%	90%	94%	87%	81%	81%	78%	68%	73%	52%	73%	67%	69%	69%	65%	70%	62%	72%	70%	70%	68%		
		95	30	33	91	37	12	37	52	89	39	83	17	36	5	99	96	5	12	73	14	20	3	5	1	4
NZE14647010 / NZE14647008839 / NZE14647108860	MATAURI OUTLIER F031 SV / HBR	+70	-2.6	+4.3	-4.6	+6.7	+53	+101	+137	+142	+17	+2.2	-3.2	+70	-0.1	+3.0	+1.8	-0.8	+0.8	-0.05	+15	+0.78	+1.18	+1.30	$133	$292
		65%	95%	86%	98%	99%	98%	98%	98%	98%	98%	98%	84%	96%	95%	96%	96%	94%	95%	88%	92%	92%	92%	89%		
		15	83	34	49	93	31	18	12	5	54	42	83	37	98	4	14	97	81	36	75	35	89	98	94	79
NMMF159 / NMMD78 / NHZY275	MILLAH MURRAH DOC F159 PV / HBR	+55	-6.7	+3.2	-6.0	+6.9	+58	+108	+149	+130	+29	+2.5	-5.3	+96	+4.9	+1.2	+2.0	+0.3	+0.2	-0.28	+17	+0.96	+1.10	+1.09	$190	$341
		64%	89%	77%	98%	97%	97%	97%	96%	95%	95%	96%	68%	93%	91%	92%	92%	88%	92%	82%	94%	88%	88%	83%		
		36	95	45	27	94	14	9	5	10	1	31	29	2	65	21	12	56	92	13	61	72	77	65	55	46
NMMG18 / NZE12170004408 / NMMD85	MILLAH MURRAH HIGHLANDER / HBR	+16	+0.7	-5.0	-3.8	+4.5	+49	+88	+110	+85	+22	+4.5	-3.5	+77	+10.8	-3.2	-1.7	+1.9	-0.2	-0.05	+11	+0.78	+0.94	+1.06	$185	$302
		62%	82%	70%	97%	95%	93%	93%	93%	90%	83%	89%	62%	90%	89%	89%	90%	83%	91%	82%	90%	84%	84%	79%		
		95	64	96	62	58	50	52	62	74	15	2	78	19	8	97	73	1	96	36	86	35	40	58	61	74
NMMK35 / NZE469 / NMMG41	MILLAH MURRAH KINGDOM K35 / HBR	+37	-13.7	-7.3	-2.6	+9.0	+55	+100	+138	+144	+10	+0.8	-5.9	+64	+7.7	+0.2	-0.1	+0.9	-0.7	-0.80	+26	+0.80	+1.26	+1.16	$140	$270
		73%	94%	85%	99%	99%	98%	98%	98%	97%	98%	98%	78%	95%	94%	94%	94%	92%	94%	87%	97%	96%	96%	94%		
		66	99	99	80	99	24	21	12	4	94	90	17	56	30	41	44	19	99	1	21	39	95	85	92	88
NMMK42 / NGMT30 / NMMH4	MILLAH MURRAH KLOONEY K42 / HBR	+4	+5.9	+2.1	-6.7	+5.8	+47	+86	+107	+91	+24	+2.0	-6.8	+64	+5.9	-1.3	-3.4	+1.0	+2.4	+0.04	+0	+0.84	+0.92	+1.02	$216	$362
		75%	95%	86%	99%	99%	98%	98%	98%	97%	98%	98%	77%	96%	94%	95%	95%	92%	94%	87%	98%	96%	96%	94%		
		99	21	57	18	83	63	60	70	66	8	50	6	55	52	76	92	15	34	49	99	48	35	45	26	30
Breed Average EBVs		+47	+1.9	+2.3	-4.6	+4.2	+49	+89	+116	+100	+17	+2.1	-4.6	+65	+6.2	-0.1	-0.4	+0.4	+2.0	+0.05	+20	+0.85	+0.98	+1.03	+191	+331

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX IMD	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
NMML133	**MILLAH MURRAH LOCH UP L133**	+9	+5.2	+2.5	-6.1	+5.0	+59	+100	+134	+104	+25	+2.0	-1.7	+79	+2.0	-2.4	-4.2	-0.6	+1.6	-0.40	+36	+0.68	+1.06	+1.16	$164	$303
USA17091363	HBR	73%	93%	83%	99%	99%	98%	98%	98%	97%	97%	98%	73%	95%	94%	94%	94%	92%	94%	86%	98%	97%	97%	95%		
NMMH49		99	27	53	25	69	13	20	17	42	5	50	97	15	92	92	96	95	58	6	5	17	69	85	79	74
NJWH283	**MILWILLAH ELSOM H283** PV	+32	+1.5	-2.9	-2.2	+3.5	+44	+79	+116	+94	+19	+2.0	-1.7	+72	+10.8	-2.1	-2.7	+1.6	+1.0	+0.29	+27	+0.80	+0.82	+1.08	$158	$273
NJWF189	HBR	67%	79%	64%	97%	97%	96%	96%	95%	90%	91%	93%	60%	91%	89%	89%	90%	85%	91%	82%	83%	89%	89%	85%		
NJWE51		75	58	90	84	34	76	77	50	59	36	50	97	31	8	89	87	3	76	81	19	39	16	65	83	87
NJWE158	**MILWILLAH LAD E158** SV	+40	-2.5	-6.2	-7.7	+8.1	+44	+82	+109	+113	+7	+1.9	-5.5	+46	+9.3	-1.0	-4.5	+1.2	+2.6	+0.06	+12	+0.78	+0.82	+0.74	$164	$295
NZEE230	HBR	57%	81%	72%	95%	97%	96%	96%	96%	92%	94%	92%	61%	91%	90%	90%	90%	85%	91%	80%	85%	79%	79%	72%		
VTMX114		61	83	97	10	99	76	70	64	28	99	54	25	94	16	70	97	9	29	52	84	35	16	1	79	78
CSWP036	**MURDEDUKE BLACK PEARL**	+19	+2.1	+0.8	-8.7	+5.4	+49	+92	+131	+116	+19	+2.9	-5.4	+72	+4.2	-0.5	-1.3	-0.6	+5.5	+0.47	+13	+0.86	+1.16	+1.24	$204	$360
USA17236055	HBR	53%	73%	61%	95%	95%	93%	91%	89%	84%	72%	87%	57%	86%	85%	85%	86%	78%	87%	79%	93%	89%	90%	85%		
CSWL123		92	53	69	5	76	52	40	20	24	30	19	27	31	74	59	67	95	1	92	80	52	86	95	39	32
CSWH211	**MURDEDUKE HUSSAR H211** PV	+7	+1.5	+3.2	-9.4	+6.3	+62	+123	+162	+170	+13	+3.8	-4.2	+88	+1.5	-1.8	-5.0	+0.3	-0.1	-0.91	+31	+0.52	+0.84	+1.04	$161	$360
VTME343	HBR	65%	81%	72%	97%	96%	95%	95%	95%	91%	89%	93%	64%	90%	89%	89%	90%	84%	90%	82%	95%	95%	95%	92%		
CSWE175		99	58	45	3	89	6	1	1	1	80	5	61	5	94	85	99	56	96	1	10	4	19	52	82	32
CSWK428	**MURDEDUKE KICKING K428** PV	+31	+8.9	+8.2	-8.1	+1.8	+48	+94	+122	+94	+25	+3.7	-5.3	+66	+2.0	+0.0	-2.2	+0.2	+0.5	-0.18	+46	+0.90	+1.04	+1.22	$184	$343
VTME343	HBR	74%	83%	71%	98%	98%	97%	97%	96%	93%	91%	97%	66%	91%	90%	87%	91%	85%	92%	84%	97%	96%	96%	94%		
CSWE175		76	5	5	7	9	55	35	37	60	5	6	29	47	92	46	81	63	88	21	1	61	65	93	62	45
NURG20	**MURRAY EL GRANDO G20** SV	+25	-11.9	+2.5	-7.0	+7.8	+68	+113	+158	+144	+13	+3.5	-5.0	+93	+16.1	-5.7	-6.9	+1.9	+2.4	-0.55	+21	+0.86	+0.76	+0.88	$223	$370
USA13058662	HBR	70%	87%	77%	97%	97%	96%	96%	96%	94%	93%	92%	72%	92%	90%	90%	91%	86%	91%	82%	94%	93%	93%	91%		
VTMD113		85	99	53	15	98	2	4	2	4	84	8	37	3	1	99	99	1	34	3	39	52	8	9	20	24
NURM208	**MURRAY GENESIS M208** PV	+40	+2.4	+5.7	-6.5	+5.4	+54	+102	+131	+109	+19	+3.7	-6.3	+87	+15.4	-0.1	-2.8	+1.6	+0.9	+1.09	+6	+1.00	+1.06	+0.68	$242	$408
SMPG357	HBR	73%	74%	62%	92%	93%	91%	91%	91%	85%	81%	79%	59%	87%	86%	83%	86%	80%	87%	78%	86%	90%	90%	87%		
NURK45		61	51	20	20	76	28	16	21	34	36	6	11	6	1	49	88	3	79	99	96	79	69	1	7	7
NURN70	**MURRAY KODAK N70** PV	+56	+3.2	+6.1	-7.3	+4.7	+60	+102	+133	+131	+13	+5.0	-6.7	+79	+10.2	-1.4	-1.8	+0.7	+3.8	-0.50	+27	+0.98	+0.94	+0.92	$253	$439
NORK522	HBR	53%	73%	58%	95%	95%	92%	94%	89%	84%	71%	91%	52%	87%	86%	85%	86%	78%	88%	80%	86%	89%	89%	85%		
NURJ53		35	44	17	13	62	9	17	17	9	83	1	7	15	11	78	75	30	9	3	18	75	40	16	4	2
NURM204	**MURRAY PROCEED M204** PV	+46	-8.2	+6.7	-4.5	+4.5	+63	+110	+142	+125	+20	+3.3	-4.0	+90	+13.9	-4.6	-4.8	+0.5	+6.7	-0.01	+15	+1.00	+0.78	+0.92	$241	$388
USA16956101	HBR	77%	76%	62%	95%	95%	93%	92%	92%	86%	77%	85%	58%	89%	88%	84%	88%	83%	89%	81%	90%	89%	90%	86%		
NURJ43		51	97	12	50	58	6	6	8	14	26	11	66	4	2	99	98	42	1	42	75	79	10	16	8	14
NURP54	**MURRAY TWINHEARTS P54** PV	+16	-0.2	+3.9	-6.7	+7.4	+74	+128	+170	+161	+27	+2.4	-4.6	+108	+8.6	-1.9	-3.7	+0.5	+3.0	+0.13	+17	+0.86	+1.22	+0.88	$254	$448
USA16350631	HBR	51%	68%	56%	92%	89%	87%	86%	85%	80%	69%	77%	50%	82%	82%	82%	83%	75%	85%	74%	81%	87%	87%	82%		
NURM13		95	70	38	18	97	1	1	1	1	3	34	49	1	22	86	94	42	20	62	65	52	92	9	4	1
SFNL21	**NAMPARA LIBERTY L21** SV	+59	-5.2	-1.8	-6.5	+8.8	+67	+113	+150	+160	+19	+3.0	-1.8	+85	+7.4	-2.2	-2.0	+1.6	-2.7	-0.70	+17	+0.86	+0.84	+1.02	$144	$301
NZE10322010609	HBR	70%	83%	66%	98%	98%	96%	96%	96%	93%	89%	95%	55%	92%	90%	85%	90%	83%	91%	83%	93%	91%	92%	87%		
SFNH65		30	91	86	20	99	3	5	4	1	30	17	96	7	33	90	78	3	99	1	61	52	19	45	90	75
SKOJ6	**NEWLYN PARK EMPEROR J6** PV	+11	-10.8	-5.9	-7.9	+8.2	+68	+115	+152	+156	+11	+2.0	-5.3	+87	+7.5	-1.2	-1.5	+1.1	+0.1	-0.68	+28	+1.08	+0.76	+0.80	$190	$343
VTME343	HBR	64%	74%	65%	92%	90%	88%	88%	89%	83%	75%	77%	61%	84%	84%	84%	84%	78%	86%	76%	78%	83%	84%	80%		
NZCE115		98	99	97	8	99	2	3	3	2	93	50	29	6	32	74	70	12	93	1	18	88	8	3	55	45
Breed Average EBVs		+47	+1.9	+2.3	-4.6	+4.2	+49	+89	+116	+100	+17	+2.1	-4.6	+65	+6.2	-0.1	-0.4	+0.4	+2.0	+0.05	+20	+0.85	+0.98	+1.03	+191	+331

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX IMD	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
NZE21095018	NGAPUTAHI P206 SV	+81	+10.7	+7.7	-2.1	-0.2	+42	+87	+100	+68	+28	+2.9	-6.7	+63	+8.3	+1.0	+0.4	+0.9	+3.3	+0.54	+20	+0.96	+1.06	+1.12	$250	$399
HIOE7	HBR	55%	74%	64%	92%	95%	89%	87%	83%	80%	72%	84%	58%	76%	74%	76%	76%	71%	74%	66%	82%	69%	69%	68%		
NZE21095112H49		5	1	7	85	1	81	55	81	92	2	19	7	57	24	24	34	19	15	95	47	72	69	76	5	9
USA16981588	PA FULL POWER 1208 PV	+63	-5.9	-5.4	-5.6	+3.7	+52	+97	+119	+80	+15	+2.0	-3.9	+68	+12.8	-1.5	+0.5	+0.8	+3.4	+0.68	+25	+1.26	+0.96	+0.72	$228	$337
USA16381311	HBR	76%	93%	82%	99%	98%	98%	98%	98%	97%	97%	98%	69%	95%	94%	93%	94%	91%	94%	85%	98%	97%	97%	90%		
USA16408070		24	93	96	32	39	36	26	43	81	70	50	69	41	3	80	33	24	14	98	25	98	45	1	16	49
USA17585042	PA RANCH HOUSE 349 PV	+11	+6.8	+3.4	-5.9	+3.9	+51	+89	+115	+96	+26	+0.0	-2.7	+62	+6.3	-0.2	+2.1	+0.3	+1.7	+0.59	-2	+1.52	+1.44	+0.94	$201	$342
USA16651533	HBR	76%	86%	67%	98%	98%	97%	97%	97%	93%	94%	96%	60%	93%	92%	91%	92%	88%	93%	83%	86%	93%	93%	89%		
USA17193464		98	15	43	28	43	44	48	53	57	3	98	90	62	47	51	12	56	55	97	99	99	99	21	42	46
HKFE27	PARINGA IRON ORE E27 PV	+88	+8.3	+1.5	-8.0	+1.9	+37	+71	+94	+90	+16	+2.1	-7.0	+67	+8.5	+0.9	+1.4	+1.5	+1.6	+0.28	+40	+0.86	+0.94	+0.98	$205	$354
VTMA149	HBR	66%	81%	69%	97%	96%	94%	94%	94%	90%	91%	91%	63%	90%	89%	89%	90%	83%	90%	81%	85%	84%	84%	79%		
FAFC1		2	7	62	8	10	94	92	88	67	59	46	5	45	23	26	19	4	58	80	3	52	40	32	38	36
SMPG357	PATHFINDER GENESIS G357 PV	+41	+2.3	+5.4	-7.8	+6.7	+61	+109	+147	+138	+26	+4.3	-5.0	+96	+13.8	+0.9	-1.5	+1.2	+0.0	+0.52	+30	+0.88	+1.04	+0.76	$221	$402
VTMB1	HBR	65%	96%	85%	99%	99%	99%	99%	99%	98%	98%	98%	81%	96%	95%	96%	96%	94%	95%	88%	98%	97%	98%	96%		
SMPD245		60	52	23	9	93	8	8	6	6	3	3	37	2	2	26	70	9	95	95	13	65	65	2	21	8
SMPK22	PATHFINDER KOMPLETE K22 SV	+73	+11.1	+10.5	-9.7	+0.7	+39	+73	+90	+38	+27	+2.9	-5.0	+48	+6.9	+4.1	+4.8	+0.1	+1.9	+0.32	+28	+0.46	+0.86	+0.66	$225	$345
SMPG357	HBR	73%	90%	73%	99%	98%	98%	98%	98%	96%	96%	97%	68%	94%	92%	92%	93%	91%	93%	85%	96%	96%	96%	94%		
SMPH756		12	1	1	2	3	90	89	92	99	2	19	37	91	39	1	2	69	49	83	17	2	22	1	18	43
SMPM651	PATHFINDER MASTERPIECE	+31	+0.6	+3.9	-5.3	+5.6	+60	+106	+138	+145	+22	+3.3	-7.5	+64	+10.1	-2.1	-3.3	+1.3	+1.9	-0.35	+49	+1.00	+1.22	+1.14	$236	$423
VTMG67	HBR	60%	74%	64%	90%	94%	91%	91%	91%	85%	80%	85%	60%	86%	84%	84%	85%	78%	86%	76%	70%	77%	77%	74%		
SMPH66		76	65	38	37	80	10	11	12	4	15	11	2	56	12	89	92	7	49	9	1	79	92	81	11	3
SMPM558	PATHFINDER MAXIMUS M558 PV	+25	-2.5	+1.8	-6.7	+6.1	+61	+100	+134	+134	+25	+4.9	-8.4	+58	+9.5	-2.1	-0.5	+0.5	+2.7	-0.37	+48	+0.92	+1.04	+0.88	$238	$412
VTMG67	HBR	75%	80%	68%	96%	96%	94%	94%	95%	89%	89%	92%	62%	90%	88%	86%	89%	85%	89%	80%	77%	77%	78%	74%		
SMPH458		85	83	59	18	87	9	20	17	8	5	1	1	73	15	89	52	42	27	8	1	65	65	9	9	5
SMPN56	PATHFINDER NUCLEUS N56 SV	+35	+4.3	+2.0	-4.1	+5.6	+64	+109	+142	+127	+14	+4.4	-6.8	+82	+13.9	+0.8	+1.0	+0.8	+1.7	+0.23	+22	+0.70	+0.74	+0.76	$272	$457
HIOG18	HBR	50%	73%	59%	95%	96%	94%	94%	94%	87%	79%	91%	54%	90%	89%	88%	89%	80%	90%	83%	83%	85%	85%	81%		
SMPL179		70	34	57	57	80	5	7	9	12	78	2	6	11	2	28	25	24	55	74	34	20	7	2	1	1
SMPP41	PATHFINDER PREMIUM P41 SV	+45	+1.6	+6.8	-4.7	+4.9	+59	+104	+141	+128	+24	+4.0	-8.0	+55	+4.6	-0.3	+0.1	-0.2	+3.6	+0.01	+26	+0.88	+1.20	+1.20	$248	$432
VTMG67	APR	52%	72%	61%	93%	94%	91%	90%	90%	83%	72%	86%	56%	77%	76%	77%	77%	73%	77%	64%	81%	69%	69%	69%		
SMPM53		53	57	12	47	67	13	13	9	12	7	4	1	80	69	54	40	84	11	45	23	57	91	91	5	2
NZE41-97	PINEBANK WAIGROUP 41/97 #	+61	+4.8	-5.3	-4.1	+3.5	+37	+63	+74	+49	+19	+0.9	-3.0	+16	+4.7	+1.4	+0.6	+0.7	+1.0	-0.26	+25	+0.32	+0.94	+0.98	$149	$233
NZE53195	HBR	69%	95%	88%	98%	98%	98%	98%	98%	98%	98%	97%	87%	96%	95%	96%	96%	94%	95%	89%	90%	87%	87%	81%		
NZE63988		27	30	96	57	34	93	98	99	98	36	88	86	99	68	17	31	30	76	14	25	1	40	32	88	96
NORE11	RENNYLEA EDMUND E11 PV	+24	+10.0	+1.3	-7.3	+1.2	+35	+65	+85	+55	+16	+1.9	-8.1	+52	+5.1	+3.3	+1.5	-0.3	+4.3	+0.67	+25	+0.58	+1.02	+1.12	$214	$340
NGMY145	HBR	79%	98%	96%	99%	99%	99%	99%	99%	99%	99%	99%	94%	98%	98%	98%	98%	98%	98%	95%	99%	99%	99%	99%		
VLYY5		86	2	64	13	5	96	97	96	97	58	54	1	85	63	3	18	88	5	98	24	7	60	76	28	47
NORG255	RENNYLEA G255 PV	+63	-10.9	-7.5	-3.6	+4.7	+51	+96	+131	+127	+21	+0.8	-4.0	+91	+8.2	-0.4	-3.3	+0.6	+4.7	-0.23	+14	+1.24	+0.94	+0.84	$170	$290
BNAD145	APR	81%	93%	85%	98%	98%	98%	98%	98%	97%	97%	97%	82%	96%	95%	95%	96%	93%	94%	90%	97%	94%	94%	92%		
NORC490		24	99	99	66	62	40	31	21	13	18	90	66	4	25	56	92	36	3	16	79	98	40	5	75	80
	Breed Average EBVs	+47	+1.9	+2.3	-4.6	+4.2	+49	+89	+116	+100	+17	+2.1	-4.6	+65	+6.2	-0.1	-0.4	+0.4	+2.0	+0.05	+20	+0.85	+0.98	+1.03	+191	+331

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX IMD	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
NORH708	**RENNYLEA H708** PV	+96	-4.3	+0.0	+1.1	+4.8	+51	+103	+132	+129	+11	+2.7	-3.8	+72	+13.1	-3.5	-6.5	+1.8	+6.9	+0.58	+26	+0.74	+0.72	+1.02	$235	$387
NORC511	APR	86%	90%	79%	98%	98%	98%	98%	98%	96%	94%	97%	74%	95%	94%	94%	94%	91%	94%	91%	97%	95%	95%	93%		
NORE176		1	89	75	99	64	43	15	19	11	92	24	71	29	3	98	99	2	1	96	23	27	5	45	11	15
NORK835	**RENNYLEA K835** PV	+18	-3.1	-4.9	-2.0	+6.6	+51	+91	+118	+99	+14	+3.2	-5.3	+56	+8.7	+0.6	-1.1	+0.1	+4.0	-0.25	+14	+0.66	+1.14	+1.08	$203	$331
NORG420	APR	67%	83%	68%	98%	95%	95%	95%	95%	90%	85%	89%	60%	89%	88%	87%	88%	84%	89%	78%	90%	88%	88%	85%		
NORH514		93	85	95	86	92	41	44	46	51	74	13	29	76	21	32	63	69	7	15	76	14	84	65	40	54
NORK522	**RENNYLEA KODAK K522** SV	+46	+10.3	+10.8	-5.5	+1.2	+46	+85	+111	+111	+10	+4.6	-6.7	+57	+4.4	+3.2	+1.6	-0.5	+4.1	+0.24	+7	+0.68	+0.86	+0.52	$213	$395
NORE11	HBR	71%	92%	80%	99%	99%	98%	98%	98%	97%	96%	98%	70%	94%	92%	93%	93%	90%	93%	86%	95%	96%	96%	94%		
NORF810		51	2	1	34	5	64	62	60	31	95	2	7	75	71	3	17	93	6	76	95	17	22	32	30	11
NORL508	**RENNYLEA L508** PV	+75	+1.6	+9.6	-6.3	+2.6	+46	+87	+117	+92	+27	+1.3	-5.5	+57	+6.0	+1.5	-0.8	-0.5	+5.5	+0.45	+20	+0.74	+0.94	+0.92	$219	$363
USA17366506	HBR	55%	93%	79%	99%	99%	98%	98%	98%	97%	97%	98%	71%	95%	94%	94%	94%	91%	94%	86%	98%	97%	97%	95%		
NORH414		10	57	2	23	18	66	58	48	65	2	77	25	74	51	16	57	93	1	92	45	27	40	16	24	29
NORL683	**RENNYLEA L683** PV	+73	+2.2	+2.4	-5.2	+5.3	+55	+94	+121	+106	+7	+1.9	-5.9	+81	+5.8	+0.5	-1.5	+0.7	+1.9	+0.59	+20	+0.78	+0.92	+1.00	$222	$375
NORE11	APR	71%	81%	69%	98%	97%	96%	96%	96%	93%	88%	94%	65%	90%	89%	86%	89%	84%	90%	83%	95%	88%	88%	85%		
NORJ631		12	53	54	38	75	23	34	39	38	99	54	17	12	53	34	70	30	49	97	45	35	35	38	21	21
NORM1078	**RENNYLEA M1078** SV	+75	-2.4	-1.9	-2.4	+3.1	+41	+83	+106	+96	+16	+2.0	-5.0	+61	+11.3	-1.2	-4.6	+0.6	+8.0	+0.76	+13	+0.96	+1.00	+1.22	$214	$343
NORH708	APR	55%	73%	61%	97%	96%	94%	94%	94%	89%	79%	92%	54%	90%	89%	89%	90%	81%	91%	82%	93%	87%	87%	84%		
NORF563		10	82	86	82	26	85	69	71	56	60	50	37	63	7	74	98	36	1	99	82	72	56	93	28	45
NORP987	**RENNYLEA P987** PV	+60	+9.3	+9.6	-8.8	+1.9	+51	+99	+132	+116	+17	+1.2	-4.4	+80	+5.4	+4.0	+2.7	-2.0	+8.3	+0.86	+17	+0.98	+0.94	+1.06	$239	$421
NORM763	APR	52%	72%	55%	95%	95%	92%	91%	90%	83%	69%	89%	49%	77%	77%	78%	78%	72%	77%	61%	91%	61%	61%	60%		
NORM1184		28	4	2	5	10	39	21	19	24	52	80	55	14	59	2	7	99	1	99	62	75	40	58	9	4
NORQ1081	**RENNYLEA Q1081** PV	+82	+0.8	+3.4	-3.3	+3.3	+51	+91	+115	+91	+11	+3.0	-5.9	+53	+12.2	+0.2	-1.1	+0.6	+6.3	+0.49	+10	+0.84	+1.00	+0.92	$265	$411
NORH708	APR	57%	69%	57%	88%	87%	82%	81%	80%	78%	69%	81%	51%	73%	72%	73%	73%	69%	74%	64%	75%	69%	73%	69%		
NORL841		4	64	43	70	30	41	44	52	65	92	17	17	83	4	41	63	36	1	93	91	48	56	16	2	6
NORQ213	**RENNYLEA Q213** PV	+29	+10.8	+8.0	-7.8	+1.1	+64	+122	+158	+114	+29	+0.3	-7.9	+102	+10.7	-0.5	-0.9	+0.2	+3.7	+0.49	+28	+0.60	+0.78	+0.88	$319	$517
NORK907	APR	53%	73%	58%	96%	96%	92%	92%	89%	83%	70%	90%	50%	77%	77%	78%	78%	73%	77%	62%	90%	69%	70%	67%		
NORL110		79	1	6	9	5	4	1	2	26	1	96	1	1	9	59	59	63	10	93	17	8	10	9	1	1
APBK11	**SHACORRAHDALU KINETIC K11**	+20	+11.3	+11.4	-9.7	+0.9	+49	+92	+108	+99	+10	+5.0	-7.6	+61	+9.5	+2.3	+0.7	+0.8	+1.4	+0.57	+7	+1.00	+1.06	+0.98	$242	$425
VTMB1	HBR	51%	74%	65%	91%	90%	87%	83%	83%	81%	76%	78%	58%	75%	68%	71%	71%	66%	71%	64%	79%	72%	70%	69%		
APBF2		91	1	1	2	4	50	42	68	52	96	1	2	65	15	8	29	24	64	96	95	79	69	32	8	3
NZE19507013	**STORTH OAKS JACK J7** SV	+14	+6.9	+9.4	-5.2	+4.8	+61	+112	+153	+137	+20	+3.3	-2.9	+85	+8.3	-0.4	-3.0	-0.4	+2.3	+0.09	+26	+0.96	+0.98	+0.96	$202	$389
VTME343	HBR	69%	85%	73%	98%	98%	97%	97%	97%	93%	90%	96%	66%	92%	91%	91%	92%	88%	92%	84%	95%	92%	92%	89%		
NZE19507111G183		97	15	2	38	64	9	5	3	7	25	11	88	8	24	56	89	90	37	57	21	72	50	26	42	13
VSNG34	**STRATHEWEN BERKLEY G34** PV	+40	+7.7	+6.6	-7.2	+3.9	+56	+103	+138	+144	+17	+2.2	-6.7	+82	+6.2	+1.1	+0.3	+0.4	+1.2	-0.26	+16	+1.12	+1.22	+1.12	$220	$421
VTMB1	HBR	70%	78%	69%	94%	93%	91%	91%	91%	88%	85%	83%	65%	89%	88%	88%	89%	84%	90%	82%	86%	87%	88%	84%		
VSNE22		61	10	13	13	43	19	15	12	4	49	42	7	12	48	22	36	49	71	14	68	92	92	76	22	4
USA17236055	**SYDGEN BLACK PEARL 2006** PV	+9	+4.2	+7.7	-7.6	+3.2	+51	+85	+122	+82	+23	+1.7	-4.9	+80	+9.2	+0.0	-0.5	+0.6	+2.0	-0.07	+14	+1.06	+1.18	+1.14	$228	$366
USA15354674	HBR	76%	97%	90%	99%	99%	99%	99%	99%	98%	98%	99%	87%	97%	96%	97%	97%	96%	96%	90%	98%	99%	99%	97%		
USA16214508		99	35	7	10	28	41	62	37	79	11	62	40	14	17	46	52	36	45	34	78	86	89	81	16	27
Breed Average EBVs		+47	+1.9	+2.3	-4.6	+4.2	+49	+89	+116	+100	+17	+2.1	-4.6	+65	+6.2	-0.1	-0.4	+0.4	+2.0	+0.05	+20	+0.85	+0.98	+1.03	+191	+331

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX IMD	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
VTMA149	**TE MANIA ADA A149** PV	+39	-7.7	-5.3	-3.6	+6.5	+51	+95	+127	+168	+10	+1.8	-2.4	+81	+3.8	-3.5	-2.2	+1.4	-0.7	-0.81	+24	+0.86	+0.74	+0.78	$90	$238
VTMX60	HBR	64%	97%	91%	99%	99%	99%	99%	99%	98%	98%	98%	86%	97%	96%	97%	97%	96%	96%	91%	96%	97%	97%	96%		
VTMU338		63	96	96	66	91	39	33	27	1	95	58	93	12	78	98	81	5	99	1	27	52	7	2	99	95
VTMK52	**TE MANIA KALIBROOK K52** PV	+45	+8.6	+4.8	-2.7	+1.4	+50	+105	+127	+94	+29	+1.8	-7.5	+68	+1.8	+1.3	+2.6	-1.2	+5.6	+1.35	+17	+1.08	+1.04	+1.08	$261	$435
USA16295688	HBR	71%	73%	64%	93%	93%	89%	89%	88%	83%	73%	82%	61%	85%	84%	82%	85%	80%	86%	75%	83%	87%	87%	84%		
VTMH423		53	6	28	79	6	44	12	27	60	1	58	2	42	93	19	8	99	1	99	60	88	65	65	2	2
VTMK138	**TE MANIA KIRBY K138** PV	+18	+1.8	+6.5	-1.6	+4.2	+50	+90	+118	+95	+19	+2.4	-9.6	+66	+5.4	+1.7	+3.1	-2.0	+8.4	+1.03	+7	+0.84	+0.76	+0.98	$269	$435
USA16295688	HBR	68%	93%	80%	99%	98%	98%	98%	98%	97%	96%	97%	76%	96%	95%	93%	96%	92%	94%	85%	98%	98%	98%	97%		
VTMH17		93	56	14	90	51	45	47	45	59	33	34	1	48	59	14	5	99	1	99	95	48	8	32	1	2
VTMM13	**TE MANIA MAGNATE M13** PV	+32	-1.6	+8.3	-12.1	+4.4	+52	+92	+114	+85	+32	+2.3	-7.7	+60	+5.3	-2.0	-1.5	+0.5	+1.6	+0.14	+28	+1.02	+1.28	+1.20	$223	$360
HIOH9	HBR	57%	84%	70%	98%	98%	97%	97%	97%	93%	89%	96%	60%	95%	92%	89%	95%	84%	92%	79%	97%	91%	92%	87%		
VTMK200		75	78	4	1	55	38	41	54	76	1	38	2	68	60	88	70	42	58	63	17	81	96	91	20	31
VTMN424	**TE MANIA NEBO N424** PV	+51	+10.5	-1.6	-7.4	+3.8	+53	+102	+129	+104	+36	+4.4	-3.8	+61	+8.3	-1.2	-3.6	+0.3	+4.5	-0.15	+52	+0.72	+0.72	+1.02	$214	$365
VTMJ89	HBR	51%	86%	76%	98%	98%	98%	98%	97%	94%	85%	96%	55%	93%	92%	89%	92%	84%	91%	79%	97%	91%	91%	87%		
VTMJ214		43	2	85	12	41	32	16	23	42	1	2	71	64	24	74	94	56	4	24	1	23	5	45	28	28
VTMN1387	**TE MANIA NEON N1387** SV	+19	+0.7	+4.9	-6.3	+2.8	+47	+86	+104	+82	+21	+1.7	-7.9	+48	+2.9	-0.4	-1.1	-2.0	+9.5	+0.31	+37	+0.80	+0.84	+1.06	$237	$379
VTMK138	HBR	50%	77%	59%	98%	98%	95%	96%	88%	84%	71%	93%	53%	81%	84%	81%	83%	77%	82%	64%	94%	77%	77%	74%		
VTML452		92	64	27	23	21	62	58	75	79	22	62	1	92	86	56	63	99	1	82	4	39	19	58	10	19
VTMN181	**TE MANIA NERO N181** PV	+74	-13.0	-6.3	-2.7	+5.4	+61	+106	+140	+118	+29	+5.2	-6.4	+73	+6.8	-4.5	-5.1	+0.3	+6.1	+0.08	+29	+0.82	+0.94	+1.18	$212	$336
VTML135	HBR	52%	82%	69%	98%	97%	96%	97%	96%	88%	73%	92%	52%	92%	91%	87%	91%	81%	90%	75%	92%	84%	84%	80%		
VTML1251		11	99	98	79	76	8	10	10	21	1	1	10	28	40	99	99	56	1	55	13	43	40	88	31	50
VTMP888	**TE MANIA PESO P888** PV	+53	+9.4	+4.9	-5.9	+1.6	+57	+118	+150	+136	+25	+2.3	-6.2	+92	+2.8	-0.1	+0.9	+0.0	+1.6	+0.45	+37	+0.88	+1.06	+0.98	$235	$435
VTMK226	HBR	56%	81%	66%	98%	97%	96%	97%	93%	86%	74%	90%	53%	84%	86%	83%	85%	78%	84%	63%	94%	73%	73%	72%		
VTMH423		39	4	27	28	7	18	2	4	7	5	38	12	3	87	49	26	75	58	92	4	57	69	32	11	2
DBLF4	**TOPBOS AMBASSADOR F4** PV	+13	+1.8	-8.8	+0.0	+4.3	+50	+93	+126	+104	+27	+2.1	-4.6	+82	+8.2	-3.7	-4.3	+1.1	+5.7	-0.44	-11	+0.62	+0.98	+1.18	$226	$360
BNAD145	HBR	66%	93%	84%	98%	98%	98%	98%	98%	97%	97%	97%	74%	95%	93%	94%	94%	91%	93%	84%	91%	90%	90%	87%		
BNAC115		97	56	99	97	53	45	39	29	41	2	46	49	11	25	99	97	12	1	5	99	10	50	88	17	32
DBLL292	**TOPBOS LEADING EDGE L292** PV	+26	+0.8	+6.0	-5.6	+7.1	+74	+130	+171	+162	+21	+1.6	-5.7	+88	+4.0	-2.4	-5.0	+0.3	+0.9	-0.12	+27	+1.00	+0.76	+0.78	$233	$434
USA16295688	HBR	74%	84%	68%	97%	98%	97%	97%	96%	93%	93%	96%	65%	91%	90%	88%	90%	85%	91%	83%	95%	90%	90%	86%		
VSNF04		83	64	17	32	95	1	1	1	1	19	66	21	5	76	92	99	56	79	27	20	79	8	2	12	2
ELYH1	**TRIO DOCKLANDS H1** PV	+7	+8.7	+3.1	-8.9	+2.0	+42	+82	+112	+72	+29	+2.9	-7.3	+69	-0.8	+2.6	+4.6	-0.9	+1.3	-0.57	+17	+0.80	+1.26	+1.12	$197	$339
QHED62	HBR	64%	76%	64%	91%	94%	92%	92%	92%	88%	88%	87%	60%	87%	85%	85%	86%	83%	87%	77%	82%	83%	83%	78%		
NKLD15		99	6	46	4	11	82	70	60	89	1	19	3	40	99	6	2	98	67	2	61	39	95	76	48	48
NZE17691009	**TURIHAUA CRUMP E5** SV	+77	-3.3	-2.9	-5.9	+3.8	+30	+58	+83	+96	+14	+1.1	-10.1	+15	-0.7	+4.3	+2.6	-0.2	+1.1	+0.19	+29	+0.66	+1.20	+1.22	$126	$252
NZE17691003Y167	HBR	63%	91%	82%	97%	98%	97%	98%	98%	97%	97%	97%	87%	94%	94%	94%	94%	92%	94%	85%	80%	83%	83%	78%		
NZE17691195Q263		8	86	90	28	41	99	99	96	56	74	83	1	99	99	1	8	84	74	70	15	14	91	93	95	93
NXTL096	**TWYNAM L096** SV	+58	+8.8	+9.0	-8.0	+2.8	+59	+112	+162	+138	+28	+3.5	-8.4	+108	+2.5	+0.7	+0.8	-0.8	+2.9	-0.35	+11	+0.60	+0.84	+0.88	$253	$464
NXTH111	APR	66%	67%	49%	93%	92%	88%	89%	88%	82%	67%	83%	49%	84%	83%	80%	84%	77%	85%	85%	75%	73%	75%	69%		
NXTJ078		32	5	3	8	21	13	5	2	6	2	8	1	1	89	30	28	97	22	9	89	8	19	9	4	1
	Breed Average EBVs	+47	+1.9	+2.3	-4.6	+4.2	+49	+89	+116	+100	+17	+2.1	-4.6	+65	+6.2	-0.1	-0.4	+0.4	+2.0	+0.05	+20	+0.85	+0.98	+1.03	+191	+331

Angus Australia - ImmuneDEX Research Breeding Values

Ident	Name																										

| | | ImmuneDEX | Calv-Ease | | Birth | | Growth | | | Maternal | | Fert | | Carcase | | | | | | Feed | Temp | Structural | | | Selection Index | |
Sire Dam	Reg.	IMD	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	+50	+5.1	+5.6	-4.4	+1.6	+55	+103	+134	+87	+26	+2.5	-3.5	+90	+5.0	-0.6	-0.6	+0.2	+1.2	+0.21	+16	+1.40	+1.22	+0.90	$219	$363
USA15688392	HBR	76%	88%	72%	98%	98%	97%	97%	97%	96%	96%	96%	68%	94%	93%	93%	94%	88%	93%	86%	96%	95%	95%	92%		
BSCZ66		44	28	21	52	7	23	15	16	71	3	31	78	4	64	61	54	63	71	72	68	99	92	12	24	29
QKBP29	**WARRAWEE PATROL P29** PV	+58	+10.2	+11.5	-13.1	+2.6	+57	+108	+144	+127	+22	+2.4	-6.6	+104	+8.5	+3.1	+1.4	-0.2	+1.8	+0.31	+24	+0.80	+1.24	+0.92	$247	$448
SMPG357	HBR	64%	69%	58%	93%	89%	86%	85%	84%	81%	71%	79%	55%	80%	80%	81%	81%	75%	82%	71%	77%	77%	77%	73%		
QKBM01		32	2	1	1	18	18	8	7	13	14	34	8	1	23	4	19	84	52	82	28	39	94	16	5	1
NWPG188	**WATTLETOP FRANKLIN G188** SV	+49	+4.7	+7.9	-4.7	+2.2	+65	+109	+143	+120	+23	+3.7	-3.0	+86	+1.5	-1.3	-1.5	-0.4	+0.8	-1.23	+32	+1.02	+0.96	+0.94	$195	$363
USA15462648	HBR	65%	94%	82%	99%	99%	98%	98%	98%	97%	97%	98%	70%	95%	93%	94%	94%	90%	93%	86%	96%	94%	95%	92%		
NWPE295		46	31	6	47	13	4	7	8	19	10	6	86	7	94	76	70	90	81	1	9	81	45	21	49	30
NWPL4	**WATTLETOP LOCK L4** SV	+34	-2.4	+1.3	-8.2	+6.3	+60	+106	+156	+152	+27	+1.6	-2.5	+101	+7.2	+1.4	+1.7	+0.2	+1.1	-0.04	+15	+1.10	+0.84	+0.80	$178	$342
USA15738589	HBR	71%	77%	65%	96%	96%	94%	95%	95%	89%	85%	93%	60%	89%	88%	88%	89%	84%	90%	80%	91%	83%	84%	79%		
NWPJ70		71	82	64	7	89	11	10	2	3	2	66	92	1	35	17	15	63	74	38	71	90	19	3	68	46
NWPE111	**WATTLETOP SITZ 458N E111** SV	+17	+4.3	+7.3	-4.8	+2.7	+47	+87	+119	+92	+28	+1.9	-2.0	+76	+5.9	-3.9	-3.6	+0.9	+3.2	-0.63	+35	+0.88	+0.86	+1.02	$190	$323
USA14474596	HBR	67%	88%	76%	97%	97%	96%	97%	97%	95%	96%	95%	71%	93%	91%	91%	92%	88%	92%	83%	93%	86%	86%	81%		
NWPC36		94	34	9	45	19	60	57	44	64	2	54	95	20	52	99	94	19	17	2	6	57	22	45	55	61
CWDJ17	**WEATHERLY JAMES J17** SV	+36	-1.9	-3.4	-4.2	+6.4	+50	+85	+111	+112	+3	+1.7	-5.6	+66	+10.1	+1.5	+2.3	+1.0	+3.1	-0.05	+15	+0.88	+1.22	+1.00	$220	$362
BNAD145	HBR	74%	75%	66%	93%	92%	90%	90%	91%	87%	82%	81%	64%	88%	88%	88%	88%	83%	90%	82%	83%	85%	85%	80%		
CWDF14		68	80	92	56	90	46	61	61	29	99	62	23	49	12	16	10	15	19	36	75	57	92	38	23	30
Breed Average EBVs		+47	+1.9	+2.3	-4.6	+4.2	+49	+89	+116	+100	+17	+2.1	-4.6	+65	+6.2	-0.1	-0.4	+0.4	+2.0	+0.05	+20	+0.85	+0.98	+1.03	+191	+331