TACE

TransTasman Angus Cattle Evaluation

ANGUS ImmuneDEX

RESEARCH BREEDING VALUES

JANUARY 2025

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

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DISCLAIMER

The ImmuneDEX RBVs contained within this publication were calculated from data supplied to Angus Australia by members and/or third parties. Whilst every effort is made to ensure the accuracy of the data, Angus Australia, its officers and employees, assume no responsibility for the accuracy of the RBVs, nor the outcome (including consequential loss) of an action taken based on the information presented in this publication.

Angus Australia - ImmuneDEX Research Breeding Values

Date: December 19, 2024

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Ident / Sire / Dam	Name / Reg.	ImmuneDEX IMD	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
			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
USA15719841	**A A R TEN X 7008 S A** [SV]	+56	+4.5	+7.0	-4.5	+2.8	+59	+105	+136	+106	+19	+2.2	-3.4	+79	+5.8	-3.1	-6.7	+0.8	+2.4	+0.00	+13	+1.44	+1.02	+0.78	$212	$366
USA13880818	HBR	83%	96%	90%	99%	98%	98%	98%	98%	98%	98%	98%	84%	96%	95%	95%	95%	94%	95%	89%	97%	99%	99%	94%		
USA15151449		35	35	15	50	25	21	20	20	45	38	48	80	24	58	97	99	23	49	26	81	99	63	3	46	43
NXOL172	**AJC L172** [SV]	+46	+6.8	+8.0	-6.2	+3.0	+58	+99	+137	+127	+14	+2.1	-4.8	+72	+6.5	-0.6	+0.3	+0.3	+1.1	-0.97	+22	+1.42	+1.26	+1.16	$210	$388
NXOF43	APR	69%	77%	62%	94%	96%	94%	94%	94%	88%	89%	84%	55%	91%	89%	84%	89%	82%	91%	83%	85%	85%	85%	81%		
NXOJ432		51	16	9	25	29	23	33	19	17	74	52	49	42	49	64	40	53	81	1	45	99	96	86	48	25
DGJG10	**ALLOURA GET CRACKING G10** [SV]	+53	+8.4	+8.0	-2.9	+2.5	+43	+74	+86	+83	+13	-0.4	-7.9	+45	+14.2	+1.5	+0.5	+0.8	+5.9	+0.45	+6	+0.48	+0.98	+0.94	$266	$418
VTMB1	HBR	69%	95%	85%	99%	99%	98%	98%	98%	98%	97%	97%	77%	96%	94%	94%	95%	91%	93%	89%	97%	96%	96%	94%		
DGJZ15		39	7	9	75	20	86	94	98	79	83	99	4	96	2	20	37	23	2	74	95	3	53	24	4	9
DGJL94	**ALLOURA LOCK STOCK &**	+44	+5.7	+1.2	-4.0	+2.7	+56	+94	+125	+121	+11	+1.1	-4.2	+65	+0.7	+2.2	-1.1	+0.1	+2.0	-0.41	+25	+0.84	+0.86	+0.94	$185	$344
USA15832750	HBR	64%	79%	71%	93%	95%	94%	94%	94%	91%	87%	88%	53%	89%	84%	81%	85%	77%	87%	78%	93%	84%	82%	77%		
DGJH24		55	25	74	59	23	30	49	41	22	88	85	64	62	97	11	66	65	59	4	33	49	25	24	75	61
DGJQ30	**ALLOURA QUINELLA Q30** [SV]	+13	+2.5	+1.8	+0.5	+3.0	+53	+97	+117	+120	+14	+3.4	-7.9	+64	+14.2	+0.1	+0.5	+0.8	+7.4	+0.45	+16	+0.92	+1.04	+1.18	$290	$469
WWEL3	HBR	51%	73%	66%	94%	93%	91%	91%	92%	86%	79%	82%	57%	89%	88%	87%	88%	79%	90%	82%	88%	85%	86%	81%		
DGJK117		97	54	68	98	29	44	40	60	23	76	13	4	64	2	48	37	23	1	74	72	66	67	89	1	1
NAQA241	**ARDROSSAN EQUATOR A241** [PV]	+49	-1.4	+3.0	-4.4	+4.1	+50	+91	+121	+108	+20	+3.2	-9.0	+87	+8.1	-2.1	-0.3	+1.3	+1.5	+0.70	+25	+0.46	+0.86	+1.00	$234	$392
USA2928	HBR	80%	99%	98%	99%	99%	99%	99%	99%	99%	99%	99%	95%	99%	98%	98%	98%	98%	98%	96%	99%	99%	99%	99%		
NAQW38		46	81	57	52	54	62	58	50	41	28	17	1	10	31	90	51	7	72	90	33	2	25	41	23	22
NAQN329	**ARDROSSAN HOLBROOK N329**	+22	-2.9	+1.4	-3.0	+2.6	+46	+84	+109	+76	+23	+2.4	-7.6	+70	+5.3	+2.7	+2.6	-1.0	+4.0	+1.04	+15	+0.84	+1.00	+0.92	$211	$337
NAQH318	HBR	54%	77%	69%	96%	95%	95%	95%	94%	90%	89%	86%	58%	91%	89%	89%	90%	81%	91%	83%	90%	81%	87%	83%		
NAQK30		89	87	72	74	22	76	77	75	87	13	40	6	48	65	7	11	97	16	99	76	49	58	19	48	67
NAQH255	**ARDROSSAN HONOUR H255** [PV]	+27	-1.9	-0.9	-2.7	+4.6	+43	+75	+97	+94	+13	+2.2	-5.8	+61	+5.7	+1.0	-1.4	+0.6	+2.4	+1.03	+9	+0.42	+1.02	+1.24	$166	$290
NORE11	HBR	81%	96%	89%	99%	99%	98%	98%	98%	98%	98%	98%	85%	97%	96%	96%	96%	95%	96%	92%	98%	97%	97%	96%		
NAQD17		83	84	86	78	65	86	93	91	64	80	48	27	74	60	28	71	34	49	98	92	1	63	95	88	90
QQFH147	**ASCOT HALLMARK H147** [PV]	+47	-2.7	+1.7	-5.0	+7.1	+60	+110	+152	+135	+14	+3.8	-6.0	+81	-1.5	+0.7	-0.2	-0.9	+3.4	+0.33	+19	+0.48	+0.86	+1.04	$200	$369
VTME343	HBR	72%	96%	88%	99%	99%	98%	98%	98%	98%	98%	98%	79%	96%	95%	95%	96%	94%	95%	90%	97%	95%	95%	93%		
NMMF123		50	87	69	42	97	16	12	5	10	72	8	23	20	99	34	49	96	27	62	61	3	25	54	60	40
HIOE7	**AYRVALE BARTEL E7** [PV]	+41	+9.0	+9.5	-4.4	+1.8	+49	+86	+113	+75	+25	+2.5	-9.0	+64	+8.4	-0.2	+0.6	+1.2	+3.6	+0.34	+5	+1.04	+1.00	+1.12	$289	$445
VTMB219	HBR	85%	99%	97%	99%	99%	99%	99%	99%	99%	99%	99%	94%	98%	98%	98%	98%	98%	98%	96%	99%	99%	99%	99%		
BVVB32		60	5	3	52	11	64	72	68	88	6	37	1	66	28	55	35	9	23	63	97	85	58	77	1	3
NUIF32	**BONNY BROOKE FALCO F32** [SV]	+49	-4.6	-10.0	-0.2	+6.2	+54	+84	+109	+99	+18	-0.5	-2.2	+64	-2.1	+2.4	+1.6	-1.2	+2.2	-0.34	+20	+1.00	+0.92	+1.06	$126	$226
NGMC196	HBR	53%	67%	54%	91%	89%	91%	89%	91%	84%	78%	77%	52%	84%	82%	82%	83%	73%	82%	73%	81%	79%	79%	74%		
NUID96		46	92	99	96	91	42	78	76	57	46	99	94	64	99	9	20	99	54	6	55	79	38	61	98	99
HCAG013	**BOONAROO GRAVITY G013** [PV]	+87	+5.3	+3.4	-5.3	+3.7	+51	+88	+116	+102	+23	+3.9	-5.4	+57	+5.4	-2.8	-3.3	+1.3	+3.0	-0.72	+22	+0.50	+0.92	+1.06	$214	$365
VTMA217	HBR	70%	91%	84%	98%	98%	97%	97%	97%	95%	96%	97%	72%	93%	92%	92%	92%	88%	91%	86%	94%	93%	94%	91%		
VTMZ618		2	28	52	38	44	53	67	62	51	12	7	35	82	63	95	92	7	35	1	47	3	38	61	44	44
NGMN418	**BOOROOMOOKA JACKPOT N418**	+24	+2.3	+7.1	-8.6	+5.5	+63	+111	+137	+134	+5	+3.5	-7.2	+80	+8.5	-0.7	-0.3	+0.7	+2.7	+0.25	+29	+1.32	+1.08	+1.04	$264	$457
WWEL3	HBR	50%	71%	66%	95%	96%	96%	96%	96%	94%	88%	94%	62%	89%	86%	86%	87%	80%	88%	80%	95%	93%	93%	87%		
NGML471		87	56	15	6	82	10	10	19	11	99	12	8	21	27	67	51	29	42	53	22	99	75	54	4	2
	Breed Average EBVs	**+48**	**+2.3**	**+3.2**	**-4.6**	**+3.9**	**+52**	**+94**	**+121**	**+103**	**+17**	**+2.2**	**-4.8**	**+69**	**+6.6**	**+0.1**	**-0.2**	**+0.4**	**+2.5**	**+0.23**	**+21**	**+0.84**	**+0.96**	**+1.02**	**+206**	**+353**

Angus Australia - ImmuneDEX Research Breeding Values

Ident **Name**

Sire / Dam	Reg.	ImmuneDEX IMD	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
			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
NGMP96	**BOOROOMOOKA PARAGON P96**	+15	-3.2	+2.9	-7.7	+3.6	+63	+120	+162	+130	+30	+3.6	-8.4	+110	+13.1	-2.7	-1.3	+1.6	+2.2	+0.85	+32	+0.84	+0.96	+1.08	$292	$474
WWEL3	HBR	52%	82%	74%	98%	98%	98%	98%	98%	95%	91%	97%	63%	93%	91%	91%	92%	83%	93%	86%	98%	97%	97%	94%		
NGMM566		96	88	58	10	42	10	3	2	14	1	10	3	1	4	95	69	3	54	95	14	49	48	67	1	1
BOWK2	**BOWMAN AUSTRALIA K2 PV**	+43	+7.9	+2.7	-6.6	+3.5	+49	+98	+121	+96	+23	+4.9	-7.8	+69	+8.0	-0.1	-1.6	+0.9	+1.5	-0.62	+14	+0.86	+1.00	+0.94	$228	$391
VTME343	HBR	74%	80%	75%	94%	91%	91%	91%	91%	87%	86%	84%	68%	88%	88%	88%	88%	83%	90%	83%	88%	84%	85%	81%		
NAQZ31		57	10	60	20	40	65	38	49	61	14	2	5	51	32	53	74	19	72	2	79	54	58	24	28	23
SRKK306	**BOWMONT KING K306 PV**	+31	-1.0	-9.0	-4.5	+4.6	+50	+78	+103	+86	+2	-0.3	-4.7	+65	+14.8	-0.5	-1.8	+1.5	+4.8	+0.51	+26	+0.54	+0.90	+0.72	$238	$351
NJWG279	HBR	69%	88%	80%	97%	98%	97%	97%	97%	95%	95%	96%	69%	94%	93%	93%	93%	91%	94%	87%	96%	92%	92%	90%		
TFAD58		77	79	99	50	65	61	88	85	76	99	99	51	64	2	62	77	4	7	79	32	5	33	1	19	56
QBUG49	**BURENDA GEIGER COUNTER**	+11	+8.3	+8.6	-6.9	+2.9	+42	+80	+105	+91	+17	+2.1	-8.8	+65	+4.0	+0.4	-1.3	+0.4	+3.3	+0.15	+26	+0.96	+1.18	+0.98	$221	$381
VTMB1	HBR	69%	86%	76%	97%	97%	96%	96%	95%	94%	93%	94%	69%	92%	91%	91%	91%	85%	90%	85%	95%	85%	85%	82%		
QBUE5		99	8	6	17	27	90	85	81	70	50	52	2	63	79	41	69	46	29	42	30	73	90	35	36	31
WLHD19	**CHERYLTON STEWIE D19 PV**	+26	+2.4	+2.5	-4.7	+3.2	+45	+90	+111	+95	+20	+2.2	-7.4	+57	+4.5	-1.6	+1.3	-0.3	+4.1	+0.40	+15	+1.02	+1.00	+1.04	$221	$373
USA13058662	HBR	73%	94%	89%	98%	98%	98%	98%	98%	97%	98%	98%	77%	96%	95%	95%	95%	92%	95%	89%	96%	95%	95%	92%		
USA14311946		84	55	62	47	33	79	61	72	62	31	48	7	83	74	84	24	83	15	69	76	82	58	54	36	37
GTNP9	**CHILTERN PARK PICASSO P9 PV**	+37	+9.3	+8.8	-3.6	+1.0	+54	+101	+133	+95	+24	+3.3	-7.9	+91	+6.4	-0.1	+1.1	-0.6	+4.2	+0.70	+26	+0.64	+0.72	+0.82	$263	$437
HKFJ5	HBR	53%	82%	69%	98%	98%	96%	97%	96%	90%	85%	95%	62%	88%	87%	87%	87%	80%	88%	77%	93%	93%	93%	88%		
GTNK26		67	4	5	65	6	38	28	26	63	9	15	4	6	51	53	27	92	14	90	32	13	6	5	5	4
QMUM13	**CLUNES CROSSING DUSTY M13**	+35	+1.9	+5.8	-6.8	+5.3	+64	+101	+119	+65	+16	+1.0	-7.9	+71	+12.9	-2.4	-3.2	+1.0	+2.1	+0.23	+10	+0.88	+0.86	+0.98	$301	$437
USA16295688	HBR	50%	85%	81%	99%	99%	98%	98%	98%	98%	97%	98%	76%	96%	94%	95%	95%	92%	95%	88%	98%	98%	98%	96%		
QMUG1		70	59	26	18	79	7	28	54	94	62	87	4	45	4	93	91	15	57	51	89	58	25	35	1	4
NBHK330	**CLUNIE RANGE KALUHA K330 PV**	+3	-1.8	-12.0	-4.8	+5.6	+54	+95	+125	+99	+15	+1.5	-7.4	+93	+9.8	+0.2	-1.2	+1.2	+3.2	+0.31	+5	+0.70	+0.94	+1.16	$247	$380
NJWG279	HBR	71%	85%	75%	97%	97%	96%	96%	96%	93%	90%	96%	67%	93%	91%	91%	92%	90%	93%	86%	94%	88%	88%	85%		
NBHH381		99	83	99	45	84	39	44	40	56	67	74	7	5	16	46	67	9	31	60	96	22	43	86	12	31
NBHL348	**CLUNIE RANGE LEGEND L348 PV**	+18	-5.6	+4.2	-7.8	+5.8	+57	+102	+123	+151	+1	+2.9	-7.9	+62	-0.1	+3.7	+0.9	-0.8	+2.6	+0.08	+24	+0.50	+0.80	+1.24	$177	$358
NZE14647008839	HBR	68%	95%	87%	99%	99%	98%	98%	98%	98%	97%	98%	80%	95%	94%	95%	95%	93%	94%	87%	97%	97%	97%	96%		
AHWJ81		93	94	43	10	86	27	25	44	4	99	24	4	72	98	3	30	95	44	34	38	3	14	95	81	50
WDCH249	**COONAMBLE HECTOR H249 SV**	+33	+1.1	+0.5	-8.2	+4.6	+45	+80	+99	+93	+5	+1.3	-4.7	+46	+9.1	+4.2	+4.5	+0.5	+0.1	-0.46	+40	+0.40	+0.50	+0.80	$179	$312
USA14885809	HBR	70%	96%	88%	99%	99%	98%	98%	98%	97%	98%	98%	79%	96%	95%	95%	95%	94%	95%	89%	98%	96%	96%	94%		
WDCE9		74	66	79	7	65	80	86	89	67	99	80	51	96	22	2	3	40	95	3	4	1	1	4	80	82
WDCK314	**COONAMBLE KEVIN K314 PV**	+99	+0.8	+5.1	-2.2	+4.5	+51	+101	+134	+111	+25	+4.5	-7.5	+84	+7.4	+0.1	+0.7	+0.2	+1.6	+0.56	+41	+0.50	+1.12	+1.20	$219	$385
NAQA241	HBR	65%	86%	75%	96%	98%	97%	96%	96%	93%	95%	94%	68%	92%	90%	90%	91%	86%	91%	83%	86%	85%	86%	82%		
WDCD94		1	68	33	83	63	56	29	24	36	6	3	6	13	39	48	34	59	69	82	3	3	82	92	38	27
USA16198796	**EF COMPLEMENT 8088 PV**	+15	+4.4	+7.4	-4.6	+2.9	+52	+98	+130	+98	+21	+1.4	-6.7	+76	+7.5	+1.3	+0.8	+0.7	+1.6	+0.52	+20	+0.94	+1.26	+1.16	$247	$408
USA14686137	HBR	85%	99%	95%	99%	99%	99%	99%	99%	99%	99%	99%	92%	98%	97%	98%	98%	97%	97%	94%	99%	99%	99%	98%		
USA15452880		96	36	12	49	27	48	37	30	58	23	77	13	30	37	23	32	29	69	79	54	69	96	86	12	13
WWEQ15	**ESSLEMONT GARTH Q15 PV**	+36	-1.1	+3.1	-8.2	+5.6	+63	+110	+151	+143	+27	+2.2	-6.9	+69	+6.4	-3.4	-3.9	+0.4	+4.2	-0.40	+44	+0.90	+1.14	+1.04	$241	$421
VTMG67	HBR	52%	76%	68%	93%	91%	90%	90%	90%	86%	79%	83%	61%	88%	87%	86%	87%	78%	89%	82%	86%	80%	80%	77%		
WWEN17		69	80	56	7	84	10	11	6	6	3	48	11	49	51	98	95	46	14	5	2	62	85	54	16	8
	Breed Average EBVs	**+48**	**+2.3**	**+3.2**	**-4.6**	**+3.9**	**+52**	**+94**	**+121**	**+103**	**+17**	**+2.2**	**-4.8**	**+69**	**+6.6**	**+0.1**	**-0.2**	**+0.4**	**+2.5**	**+0.23**	**+21**	**+0.84**	**+0.96**	**+1.02**	**+206**	**+353**

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	Selection Index $A	Selection Index $A-L
WWEL3	**ESSLEMONT LOTTO L3 PV**	+8	-5.8	-1.2	-5.4	+4.6	+61	+110	+140	+135	+15	+3.6	-9.5	+89	+14.7	-0.3	+0.7	+1.5	+3.8	+0.37	+15	+1.12	+0.98	+1.16	$294	$474
HIOG18	HBR	77%	87%	86%	99%	99%	99%	99%	99%	98%	98%	98%	83%	97%	96%	96%	97%	95%	96%	92%	98%	98%	98%	97%		
WWEJ8		99	95	88	36	65	15	11	15	10	66	10	1	7	2	57	34	4	19	66	76	92	53	86	1	1
WWEQ24	**ESSLEMONT QUOKKA Q24 PV**	+53	+5.7	+1.5	-5.0	+1.6	+42	+83	+95	+51	+19	+3.9	-6.8	+64	+16.8	+1.4	+0.1	+2.2	+2.2	+1.18	+29	+0.74	+0.88	+0.94	$269	$395
WWEN12	HBR	52%	75%	64%	96%	96%	94%	94%	93%	88%	80%	90%	57%	90%	89%	88%	89%	80%	91%	83%	87%	73%	73%	70%		
WWEN7		39	25	71	42	10	89	81	93	98	36	7	12	65	1	21	44	1	54	99	22	29	29	24	3	20
WWE21S6	**ESSLEMONT SEAN S6 PV**	+27	+5.6	+7.5	-5.8	+2.9	+57	+101	+116	+90	+14	+4.5	-6.0	+77	+17.0	+2.1	+0.3	+1.2	+4.0	+1.04	+27	+1.04	+1.22	+1.10	$291	$457
NGMN418	HBR	54%	69%	62%	94%	91%	91%	90%	88%	85%	79%	82%	52%	80%	76%	76%	77%	68%	80%	70%	88%	65%	65%	64%		
WWEN7		83	25	12	30	27	25	28	61	71	71	3	23	27	1	12	40	9	16	99	26	85	93	73	1	2
USA16295688	**G A R PROPHET SV**	+43	+3.9	+6.2	-0.7	+3.8	+67	+108	+133	+86	+23	+0.7	-5.8	+71	+4.2	-0.6	-1.5	-0.8	+4.8	+0.78	+27	+1.02	+0.82	+0.92	$274	$424
USA13009379	HBR	88%	98%	94%	99%	99%	99%	99%	99%	99%	99%	99%	90%	98%	97%	97%	98%	97%	97%	94%	99%	99%	99%	98%		
USA15129456		57	41	22	94	47	4	15	24	77	13	92	27	44	77	64	72	95	7	93	28	82	17	19	2	7
USA17328461	**G A R SURE FIRE SV**	+96	+6.9	+3.7	-3.0	+2.3	+49	+90	+112	+84	+20	+4.1	-7.2	+63	+8.0	-0.2	-0.4	+0.9	+3.4	-0.09	+26	+1.18	+0.92	+0.60	$250	$403
USA16205036	HBR	79%	96%	87%	99%	99%	98%	98%	98%	97%	98%	98%	80%	96%	96%	96%	96%	95%	96%	89%	96%	99%	99%	92%		
USA16431932		1	15	49	74	17	64	63	70	78	27	5	8	67	32	55	53	19	27	19	31	96	38	1	10	16
QBGH221	**GLENOCH HINMAN H221 SV**	+69	+6.3	-2.2	-3.0	+3.0	+53	+94	+126	+115	+21	+0.8	-3.3	+87	+7.6	-2.0	-4.9	+0.8	+5.3	-0.34	+10	+0.88	+0.78	+1.06	$212	$361
BNAD145	HBR	70%	85%	76%	97%	97%	96%	96%	96%	92%	94%	95%	70%	92%	91%	91%	92%	88%	92%	85%	86%	88%	89%	85%		
QBGD80		16	20	91	74	29	43	48	38	30	24	91	82	10	36	89	98	23	4	6	90	58	12	61	46	47
DKKM41	**HARDHAT H708 MAIMURU J51**	+86	-1.1	+3.0	-1.5	+2.4	+43	+91	+118	+97	+11	+1.3	-3.4	+63	+1.8	+0.8	-2.0	-0.5	+6.3	+0.13	+23	+1.08	+1.04	+1.10	$185	$319
NORH708	APR	50%	71%	63%	95%	94%	92%	91%	91%	87%	82%	86%	65%	89%	89%	88%	89%	81%	91%	84%	88%	89%	90%	86%		
DKKJ51		2	80	57	90	19	86	58	57	60	89	80	80	69	93	32	79	89	1	39	42	89	67	73	75	78
NHZF1023	**HAZELDEAN F1023 SV**	+41	+4.6	+1.6	-2.6	+3.1	+39	+74	+88	+70	+13	+3.7	-5.3	+49	+8.6	+2.8	-0.2	+0.1	+5.9	+1.32	+13	+0.46	+0.98	+1.06	$210	$336
VTMB1	APR	68%	93%	81%	98%	98%	98%	98%	98%	97%	97%	97%	77%	95%	94%	94%	94%	91%	94%	89%	98%	97%	97%	94%		
NHZB723		60	34	70	79	31	94	94	97	92	80	9	37	94	26	6	49	65	2	99	83	2	53	61	49	67
NHZQ319	**HAZELDEAN Q319 PV**	+70	+4.1	+9.6	-8.6	+2.7	+55	+106	+144	+140	+17	+3.3	-11.3	+81	+2.5	+2.7	+1.1	-1.0	+5.0	+0.54	+32	+0.80	+1.04	+1.12	$266	$480
NHZM586	APR	51%	77%	61%	97%	97%	96%	96%	95%	89%	81%	95%	57%	91%	89%	88%	89%	80%	91%	82%	96%	89%	88%	84%		
NHZL1175		15	39	3	6	23	37	17	11	8	50	15	1	18	90	7	27	97	6	81	15	41	67	77	4	1
VMIC31	**INNESDALE CARBINE C31 SV**	+33	+0.6	-5.7	-1.5	+5.4	+37	+63	+82	+86	+19	+0.6	-5.1	+36	+3.2	-0.1	-0.7	+1.0	+0.7	+0.39	+6	+0.66	+0.94	+1.08	$127	$233
USA14739204	HBR	61%	86%	78%	95%	97%	96%	96%	95%	94%	94%	93%	68%	92%	91%	91%	91%	86%	92%	84%	91%	82%	82%	77%		
VMIU102		74	69	98	90	81	97	99	99	76	36	94	42	99	86	53	59	15	88	68	95	16	43	67	98	99
BLAP130	**KNOWLA PACKER P130 PV**	+16	+2.6	+1.6	-3.0	+4.6	+56	+102	+134	+113	+11	+1.1	-6.0	+78	+8.2	-0.1	-0.9	+0.8	+1.9	+0.16	+27	+0.84	+1.20	+0.94	$237	$398
SRKK306	HBR	51%	74%	64%	93%	91%	90%	89%	90%	85%	79%	86%	54%	85%	84%	84%	85%	77%	87%	77%	84%	78%	78%	74%		
BLAK113		95	53	70	74	65	33	27	24	34	89	85	23	26	30	53	62	23	62	43	28	49	92	24	20	18
VLYL483	**LAWSONS LINKEDIN L483 SV**	+55	+3.8	-6.3	-1.3	+4.1	+58	+109	+153	+141	+25	+4.1	-4.6	+103	+9.3	-1.1	+2.2	+0.2	+2.0	-0.19	+20	+1.02	+0.78	+0.88	$211	$386
HKFJ5	HBR	67%	87%	78%	98%	98%	97%	97%	97%	95%	95%	94%	68%	93%	89%	88%	91%	84%	91%	82%	89%	85%	85%	81%		
VLYH221		36	42	98	91	54	23	13	5	7	7	5	54	1	20	75	14	59	59	12	56	82	12	12	47	27
VLYP316	**LAWSONS PROPHET P316 PV**	+16	+5.6	+5.8	-1.9	+3.4	+57	+88	+106	+63	+17	+0.3	-5.2	+67	+13.0	-3.2	-3.3	+1.5	+4.1	+0.39	+30	+0.68	+0.72	+0.80	$284	$412
USA16295688	HBR	58%	79%	71%	93%	96%	94%	94%	92%	88%	82%	90%	59%	87%	86%	85%	86%	79%	88%	78%	93%	90%	90%	87%		
VLYM527		95	25	26	86	37	27	67	81	95	52	97	39	57	4	97	92	4	15	68	20	19	6	4	1	11
	Breed Average EBVs	**+48**	**+2.3**	**+3.2**	**-4.6**	**+3.9**	**+52**	**+94**	**+121**	**+103**	**+17**	**+2.2**	**-4.8**	**+69**	**+6.6**	**+0.1**	**-0.2**	**+0.4**	**+2.5**	**+0.23**	**+21**	**+0.84**	**+0.96**	**+1.02**	**+206**	**+353**

Angus Australia - ImmuneDEX Research Breeding Values

Ident **Name**

Sire / Dam	Reg.	ImmuneDEX IMD	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
			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
NMMD78	**MILLAH MURRAH EQUATOR D78**	+53	-0.4	+6.5	-9.0	+5.0	+62	+111	+157	+181	+18	+2.1	-4.0	+89	+1.5	-2.0	-3.2	+0.9	+0.1	-1.01	+22	+0.82	+0.94	+1.08	$159	$356
USA14237157	HBR	68%	96%	90%	99%	99%	98%	98%	98%	97%	98%	98%	81%	96%	95%	96%	96%	94%	95%	89%	98%	95%	95%	92%		
NMMY119		39	76	19	4	74	12	10	3	1	43	52	69	7	94	89	91	19	95	1	47	45	43	67	91	51
NMMH250	**MILLAH MURRAH HERCULES**	+69	-1.5	+3.1	-2.9	+6.0	+42	+76	+106	+93	+12	+2.5	-4.6	+62	+3.0	-1.6	-0.7	+0.4	+2.4	+0.16	+20	+0.92	+1.14	+1.08	$157	$280
NMME78	HBR	62%	86%	74%	98%	98%	97%	97%	97%	94%	94%	95%	65%	92%	91%	91%	91%	87%	92%	84%	91%	89%	89%	84%		
NMME120		16	82	56	75	89	89	92	80	66	84	37	54	71	87	84	59	46	49	43	54	66	85	67	91	92
NMMK35	**MILLAH MURRAH KINGDOM K35**	+37	-12.2	-6.1	-2.0	+8.7	+55	+99	+138	+150	+11	+0.8	-5.3	+65	+7.9	+0.3	+0.1	+1.1	-1.0	-0.73	+28	+0.82	+1.28	+1.18	$140	$280
NZE469	HBR	73%	96%	90%	99%	99%	98%	98%	98%	98%	98%	98%	81%	96%	95%	95%	95%	94%	95%	89%	98%	96%	96%	94%		
NMMG41		67	99	98	85	99	36	33	18	4	90	91	37	63	33	43	44	12	99	1	25	45	97	89	96	92
NMMK42	**MILLAH MURRAH KLOONEY K42**	+4	+4.0	+1.5	-6.0	+5.6	+47	+86	+107	+89	+22	+2.1	-4.7	+64	+6.7	-1.2	-3.2	+1.1	+1.9	-0.02	+17	+0.82	+0.90	+1.06	$192	$324
NGMT30	HBR	75%	86%	84%	99%	99%	99%	99%	98%	98%	98%	98%	83%	97%	95%	96%	96%	94%	96%	90%	99%	97%	97%	95%		
NMMH4		99	40	71	27	84	71	73	78	72	15	52	51	66	47	77	91	12	62	24	67	45	33	61	69	75
NMML133	**MILLAH MURRAH LOCH UP L133**	+9	+4.9	+4.3	-5.5	+4.8	+59	+99	+131	+102	+25	+2.1	-2.6	+80	+1.6	-2.2	-3.9	-0.7	+1.8	-0.12	+32	+0.68	+1.06	+1.16	$168	$309
USA17091363	HBR	73%	81%	81%	99%	99%	98%	98%	98%	98%	98%	98%	81%	96%	95%	96%	96%	94%	95%	89%	98%	97%	97%	96%		
NMMH49		99	32	42	35	70	20	33	28	51	6	52	91	21	94	91	95	94	64	17	14	19	71	86	87	83
NJWH283	**MILWILLAH ELSOM H283 PV**	+32	+1.2	-5.2	-2.2	+3.9	+46	+82	+122	+109	+21	+1.7	-1.2	+77	+9.2	-2.4	-2.7	+1.5	+1.5	+0.34	+20	+0.76	+0.84	+1.04	$148	$269
NJWF189	HBR	67%	83%	71%	97%	97%	96%	96%	95%	92%	93%	94%	63%	92%	91%	91%	91%	86%	92%	85%	88%	89%	90%	85%		
NJWE51		75	65	97	83	49	76	81	48	40	20	67	98	29	21	93	87	4	72	63	55	32	21	54	94	94
NJWE158	**MILWILLAH LAD E158 SV**	+41	-3.1	-8.5	-7.7	+7.9	+40	+77	+104	+106	+6	+2.0	-5.1	+42	+8.9	-0.9	-4.8	+1.4	+3.3	+0.27	+13	+0.76	+0.80	+0.72	$157	$277
NZEE230	HBR	57%	84%	76%	95%	97%	96%	96%	96%	93%	95%	93%	64%	92%	91%	91%	91%	86%	92%	83%	90%	79%	79%	72%		
VTMX114		60	88	99	10	99	92	90	84	44	99	56	42	98	23	71	98	6	29	55	81	32	14	1	91	93
CSWP036	**MURDEDUKE BLACK PEARL**	+19	+2.3	+3.3	-8.4	+4.7	+49	+94	+132	+120	+21	+3.2	-7.4	+61	+1.3	+0.5	-1.1	-1.0	+6.3	+0.63	+16	+0.84	+1.18	+1.24	$215	$384
USA17236055	HBR	53%	79%	70%	96%	96%	95%	95%	94%	91%	85%	90%	68%	91%	90%	90%	91%	82%	92%	85%	95%	93%	93%	90%		
CSWL123		92	56	54	6	68	63	50	26	24	21	17	7	74	95	39	66	97	1	87	73	49	90	95	43	28
CSWK428	**MURDEDUKE KICKING K428 PV**	+31	+7.8	+9.9	-7.6	+1.9	+48	+93	+115	+88	+25	+3.3	-6.3	+66	+2.4	-0.4	-3.0	+0.3	+0.8	-0.07	+42	+0.86	+1.00	+1.18	$189	$343
VTME343	HBR	74%	88%	77%	98%	98%	97%	97%	97%	96%	95%	97%	70%	93%	92%	90%	92%	87%	93%	86%	97%	97%	97%	95%		
CSWE175		77	10	2	11	12	71	53	65	74	6	15	18	58	91	60	90	53	86	20	3	54	58	89	71	62
NURM208	**MURRAY GENESIS M208 PV**	+39	+1.4	+5.6	-5.9	+4.6	+50	+94	+127	+105	+19	+3.8	-6.5	+82	+16.4	-0.3	-2.5	+2.0	+1.2	+1.39	+7	+0.90	+1.00	+0.68	$238	$395
SMPG357	HBR	73%	80%	70%	93%	94%	93%	92%	93%	89%	87%	86%	64%	89%	88%	86%	89%	83%	90%	82%	88%	91%	90%	87%		
NURK45		64	63	28	29	65	60	48	36	46	33	8	16	16	1	57	85	1	79	99	95	62	58	1	19	20
NURM204	**MURRAY PROCEED M204 PV**	+46	-5.5	+7.8	-4.3	+4.3	+61	+106	+144	+134	+19	+2.3	-3.4	+89	+13.6	-4.7	-5.6	+0.7	+6.9	+0.13	+24	+0.94	+0.74	+0.88	$237	$394
USA16956101	HBR	77%	81%	71%	96%	96%	95%	95%	94%	90%	85%	90%	64%	91%	90%	88%	91%	86%	92%	85%	93%	91%	91%	87%		
NURJ43		51	94	10	54	59	13	18	10	11	36	44	80	8	3	99	99	29	1	39	37	69	8	12	20	21
SFNL21	**NAMPARA LIBERTY L21 SV**	+58	-4.5	-2.6	-6.5	+8.6	+67	+110	+148	+167	+19	+2.8	-1.3	+78	+7.7	-2.0	-0.8	+1.8	-2.3	-0.62	+24	+0.92	+0.90	+0.98	$147	$309
NZE10322010609	HBR	70%	87%	73%	98%	98%	97%	97%	97%	95%	95%	96%	64%	93%	92%	90%	93%	87%	93%	86%	94%	92%	92%	88%		
SFNH65		31	92	93	21	99	4	11	8	1	37	27	98	24	35	89	60	2	99	2	38	66	33	35	94	83
SKOJ6	**NEWLYN PARK EMPEROR J6 PV**	+12	-7.6	-5.2	-7.1	+7.4	+64	+110	+142	+157	+8	+1.2	-4.2	+79	+8.3	-1.0	-1.0	+1.3	+0.2	-0.72	+15	+1.06	+0.80	+0.78	$183	$343
VTME343	HBR	64%	78%	70%	93%	92%	91%	90%	91%	88%	84%	85%	64%	87%	86%	86%	87%	80%	88%	80%	85%	85%	85%	81%		
NZCE115		98	97	97	15	98	7	11	12	3	98	83	64	24	29	73	64	7	94	1	76	87	14	3	77	62
	Breed Average EBVs	**+48**	**+2.3**	**+3.2**	**-4.6**	**+3.9**	**+52**	**+94**	**+121**	**+103**	**+17**	**+2.2**	**-4.8**	**+69**	**+6.6**	**+0.1**	**-0.2**	**+0.4**	**+2.5**	**+0.23**	**+21**	**+0.84**	**+0.96**	**+1.02**	**+206**	**+353**

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	Selection Index $A	Selection Index $A-L
NZE21095018	**NGAPUTAHI P206** PV	+81	+9.9	+5.2	-1.3	+0.0	+42	+84	+97	+73	+28	+2.6	-7.9	+54	+5.9	-0.1	-2.2	+1.1	+4.0	+0.18	+18	+0.94	+1.06	+1.10	$241	$385
HIOE7	HBR	55%	80%	72%	93%	97%	95%	95%	94%	89%	83%	94%	68%	90%	89%	88%	89%	82%	90%	83%	89%	80%	81%	78%		
NZE21095112H49		5	3	32	91	2	88	77	91	89	2	33	4	87	57	53	82	12	16	45	65	69	71	73	16	27
USA16981588	**PA FULL POWER 1208** PV	+63	-4.9	-4.3	-4.8	+3.8	+52	+98	+119	+75	+14	+2.0	-2.3	+72	+12.9	-1.6	+0.6	+1.0	+3.0	+0.90	+22	+1.24	+0.92	+0.70	$224	$329
USA16381311	HBR	76%	95%	86%	99%	98%	98%	98%	98%	98%	98%	98%	74%	96%	95%	94%	95%	92%	95%	88%	98%	98%	98%	91%		
USA16408070		24	93	96	45	47	51	37	55	88	76	56	94	43	4	84	35	15	35	96	48	98	38	1	33	72
SMPG357	**PATHFINDER GENESIS G357** PV	+41	+0.1	+4.1	-7.2	+6.6	+61	+109	+148	+135	+26	+4.4	-6.7	+97	+13.9	+0.4	-0.9	+1.4	+0.3	+0.63	+28	+0.86	+1.04	+0.78	$239	$419
VTMB1	HBR	65%	97%	90%	99%	99%	99%	99%	99%	98%	98%	98%	85%	97%	96%	96%	96%	95%	96%	90%	99%	98%	98%	96%		
SMPD245		60	73	45	14	94	13	13	8	10	5	4	13	3	2	41	62	6	93	87	23	54	67	3	18	9
SMPK22	**PATHFINDER KOMPLETE K22** SV	+73	+10.4	+8.2	-9.1	+0.9	+41	+74	+96	+45	+27	+2.9	-6.5	+54	+7.0	+3.6	+5.3	+0.2	+2.3	+0.52	+27	+0.52	+0.82	+0.66	$238	$360
SMPG357	HBR	73%	93%	81%	99%	98%	98%	98%	98%	97%	97%	98%	75%	95%	94%	94%	94%	93%	94%	88%	97%	96%	96%	94%		
SMPH756		11	2	8	4	5	92	94	92	99	4	24	16	88	43	3	1	59	51	79	27	4	17	1	18	48
SMPM651	**PATHFINDER MASTERPIECE**	+31	+3.9	+5.1	-6.1	+5.1	+56	+104	+129	+136	+20	+3.6	-7.8	+54	+9.7	-1.7	-3.9	+1.6	+1.6	-0.24	+33	+0.98	+1.22	+1.18	$234	$424
VTMG67	HBR	60%	80%	72%	92%	95%	93%	93%	93%	89%	88%	89%	63%	88%	87%	87%	87%	81%	89%	81%	83%	77%	77%	74%		
SMPH66		77	41	33	26	76	29	22	33	9	26	10	5	88	17	85	95	3	69	10	12	76	93	89	22	7
SMPN56	**PATHFINDER NUCLEUS N56** SV	+34	+4.4	+2.6	-3.4	+5.3	+60	+106	+138	+132	+15	+4.6	-7.2	+75	+12.9	+0.9	+1.1	+0.9	+1.7	+0.42	+9	+0.76	+0.78	+0.84	$256	$445
HIOG18	HBR	50%	81%	70%	96%	97%	96%	95%	95%	91%	90%	94%	63%	92%	90%	90%	91%	83%	92%	85%	90%	86%	87%	81%		
SMPL179		72	36	61	68	79	17	18	17	12	67	3	8	31	4	30	27	19	67	71	92	32	12	7	8	3
NZE41-97	**PINEBANK WAIGROUP 41/97** #	+61	+3.8	-3.7	-3.4	+3.6	+37	+64	+76	+50	+18	+0.9	-4.1	+17	+5.2	+1.2	+0.3	+0.9	+1.1	-0.07	+32	+0.32	+0.94	+1.00	$160	$248
NZE53195	HBR	69%	96%	91%	98%	99%	98%	98%	98%	98%	98%	97%	89%	97%	96%	96%	96%	95%	96%	90%	93%	87%	87%	81%		
NZE63988		27	42	95	68	42	96	99	99	99	42	89	66	99	66	24	40	19	81	20	13	1	43	41	90	97
NORF340	**RENNYLEA BLACK GOLD F340** PV	+73	+5.9	+1.8	-2.9	+1.3	+35	+66	+80	+83	+3	+0.9	-2.7	+21	+2.1	-0.5	+0.1	-0.1	+4.4	-0.06	+15	+0.76	+0.82	+0.70	$143	$264
NZE04379	HBR	67%	83%	75%	96%	96%	95%	94%	94%	92%	92%	91%	70%	91%	90%	90%	90%	83%	91%	85%	90%	88%	88%	84%		
VLYZ1393		11	23	68	75	7	98	99	99	80	99	89	90	99	92	62	44	75	11	21	77	32	17	1	96	95
NORE11	**RENNYLEA EDMUND E11** PV	+24	+9.1	+1.3	-6.8	+1.2	+34	+64	+84	+54	+16	+1.8	-8.5	+51	+4.3	+3.5	+1.3	-0.2	+4.1	+0.76	+23	+0.56	+1.02	+1.10	$206	$326
NGMY145	HBR	79%	99%	97%	99%	99%	99%	99%	99%	99%	99%	99%	95%	98%	98%	98%	98%	98%	98%	96%	99%	99%	99%	99%		
VLYY5		87	5	73	18	7	99	99	98	98	58	63	2	92	76	3	24	79	15	92	41	6	63	73	53	74
NORH708	**RENNYLEA H708** PV	+96	-6.7	+2.1	+1.2	+4.7	+48	+102	+130	+130	+12	+2.4	-3.6	+73	+12.0	-3.8	-6.7	+2.0	+7.1	+0.74	+21	+0.72	+0.68	+0.90	$224	$373
NORC511	APR	86%	93%	85%	98%	98%	98%	98%	98%	97%	97%	98%	82%	96%	95%	95%	96%	93%	96%	92%	98%	98%	98%	97%		
NORE176		1	96	66	99	68	70	26	31	13	84	40	77	40	6	99	99	1	1	92	50	25	4	15	32	37
NORK163	**RENNYLEA K163** PV	+29	+5.3	-8.1	-3.8	+2.6	+39	+73	+93	+65	+10	+0.8	-5.7	+62	+19.1	-0.2	-1.1	+2.6	+2.6	+0.16	+19	+0.62	+0.72	+1.02	$240	$353
NORH106	APR	80%	90%	80%	98%	98%	98%	98%	97%	97%	96%	96%	78%	95%	94%	94%	94%	91%	94%	88%	91%	90%	90%	87%		
NORE176		80	28	99	62	22	94	95	94	94	92	91	29	70	1	55	66	1	44	43	58	11	6	48	17	54
NORK522	**RENNYLEA KODAK K522** SV	+47	+9.0	+9.3	-4.8	+1.4	+45	+83	+109	+111	+11	+4.6	-7.5	+47	+3.7	+3.4	+1.4	-0.4	+4.0	+0.23	+7	+0.62	+0.80	+0.96	$205	$382
NORE11	HBR	71%	94%	84%	99%	99%	98%	98%	98%	97%	97%	98%	75%	95%	94%	94%	94%	92%	94%	89%	96%	97%	97%	95%		
NORF810		50	5	3	45	8	81	80	76	37	90	3	6	95	82	4	23	86	16	51	95	11	14	29	55	29
NORL508	**RENNYLEA L508** PV	+75	+1.8	+9.0	-5.9	+2.6	+46	+86	+118	+93	+27	+1.3	-7.8	+55	+5.6	+0.9	-0.5	-0.2	+5.4	+0.68	+16	+0.66	+0.82	+0.88	$240	$392
USA17366506	HBR	55%	84%	78%	99%	99%	98%	98%	98%	98%	98%	98%	82%	96%	95%	95%	96%	93%	95%	89%	99%	98%	98%	97%		
NORH414		10	60	4	29	22	76	74	57	65	3	80	5	86	61	30	55	79	4	89	71	16	17	12	17	22
	Breed Average EBVs	**+48**	**+2.3**	**+3.2**	**-4.6**	**+3.9**	**+52**	**+94**	**+121**	**+103**	**+17**	**+2.2**	**-4.8**	**+69**	**+6.6**	**+0.1**	**-0.2**	**+0.4**	**+2.5**	**+0.23**	**+21**	**+0.84**	**+0.96**	**+1.02**	**+206**	**+353**

Angus Australia - ImmuneDEX Research Breeding Values

Date: December 19, 2024

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	Selection Index $A	Selection Index $A-L
NORL683	**RENNYLEA L683** PV	+73	+2.6	+2.2	-4.4	+5.0	+55	+95	+118	+104	+5	+2.4	-6.5	+77	+4.8	+0.7	-1.3	+0.8	+2.3	+0.62	+23	+0.72	+0.88	+1.02	$230	$385
NORE11	APR	71%	85%	75%	98%	97%	96%	96%	96%	94%	92%	95%	71%	91%	90%	88%	91%	86%	91%	85%	95%	92%	92%	89%		
NORJ631		11	53	65	52	74	36	47	57	48	99	40	16	28	70	34	69	23	51	86	42	25	29	48	26	27
NORP987	**RENNYLEA P987** PV	+60	+10.4	+9.2	-8.1	+1.4	+51	+98	+124	+130	+10	+0.4	-3.4	+71	+5.8	+3.7	+2.3	-1.2	+8.2	+0.94	+7	+0.88	+0.98	+1.04	$226	$409
NORM763	APR	52%	75%	66%	97%	97%	96%	96%	96%	93%	86%	95%	62%	90%	89%	89%	89%	82%	90%	81%	95%	92%	92%	89%		
NORM1184		28	2	4	8	8	56	37	43	14	94	96	80	43	58	3	13	99	1	97	94	58	53	54	30	13
NORQ1081	**RENNYLEA Q1081** PV	+82	-1.5	+5.3	-3.8	+3.8	+51	+92	+120	+108	+12	+3.6	-6.2	+49	+9.0	+0.5	-0.7	+0.4	+6.8	+0.86	+14	+0.88	+0.90	+0.88	$250	$406
NORH708	APR	57%	77%	67%	93%	93%	92%	91%	92%	87%	80%	89%	59%	88%	87%	87%	88%	80%	89%	80%	89%	87%	88%	83%		
NORL841		4	82	31	62	47	54	55	52	41	84	10	20	93	22	39	59	46	1	95	79	58	33	12	10	14
NORQ213	**RENNYLEA Q213** PV	+28	+9.2	+8.3	-7.4	+1.0	+65	+119	+151	+102	+24	+0.6	-10.3	+102	+8.5	+0.9	+0.2	+0.1	+3.3	+0.70	+28	+0.48	+0.68	+0.84	$334	$526
NORK907	APR	53%	84%	70%	98%	98%	97%	97%	96%	93%	86%	96%	61%	90%	89%	89%	89%	83%	90%	81%	96%	94%	94%	91%		
NORL110		81	4	7	12	6	6	4	6	51	10	94	1	1	27	30	42	65	29	90	23	3	4	7	1	1
NORR992	**RENNYLEA R992** PV	+32	+4.9	+7.9	+1.8	+1.2	+44	+84	+116	+85	+27	+1.7	-6.1	+69	+11.0	+2.0	+2.6	-0.3	+6.3	+1.09	+25	+0.56	+0.80	+0.82	$252	$402
NORN542	APR	50%	69%	61%	95%	95%	93%	93%	92%	87%	79%	91%	52%	81%	81%	81%	81%	75%	82%	68%	92%	84%	84%	78%		
NORM1034		75	32	9	99	7	84	78	62	78	3	67	22	52	10	13	11	83	1	99	34	6	14	5	9	16
USA16396573	**S A V CAMARO 9272** SV	+35	+4.5	+0.1	-6.8	+3.6	+48	+78	+97	+100	+9	+1.2	-5.6	+41	+0.5	-0.4	-2.1	+0.9	+1.5	+1.08	+22	+1.10	+0.86	+0.80	$174	$312
USA0035	HBR	66%	86%	73%	97%	97%	96%	96%	96%	93%	94%	91%	63%	93%	91%	91%	91%	84%	93%	84%	87%	86%	86%	78%		
USA15688516		70	35	81	18	42	70	89	91	55	96	83	31	98	97	60	81	19	72	99	47	91	25	4	83	81
APBK11	**SHACORRAHDALU KINETIC K11**	+20	+10.1	+10.6	-9.2	+0.4	+50	+89	+105	+94	+9	+4.7	-6.9	+64	+10.1	+3.6	+2.3	+0.5	+2.5	+0.87	+1	+0.96	+1.18	+1.08	$242	$412
VTMB1	HBR	51%	78%	71%	93%	92%	91%	90%	91%	88%	84%	86%	64%	86%	84%	84%	85%	77%	86%	78%	86%	83%	82%	79%		
APBF2		91	2	1	4	3	60	64	82	64	95	2	11	64	14	3	13	40	46	96	99	73	90	67	16	11
NZE19507013	**STORTH OAKS JACK J7** SV	+14	+5.9	+8.2	-4.8	+4.4	+61	+113	+152	+144	+17	+3.5	-1.8	+81	+8.2	-0.2	-3.0	-0.3	+2.5	-0.01	+20	+0.98	+0.96	+0.90	$184	$369
VTME343	HBR	69%	89%	80%	98%	98%	97%	97%	97%	95%	95%	96%	71%	94%	93%	93%	93%	90%	93%	87%	96%	93%	93%	89%		
NZE19507111G183		97	23	8	45	61	14	7	5	6	48	12	96	19	30	55	90	83	46	25	57	76	48	15	76	40
VSNG34	**STRATHEWEN BERKLEY G34** PV	+40	+7.9	+8.2	-6.4	+3.6	+57	+108	+142	+147	+19	+2.3	-7.1	+83	+6.0	+0.9	+0.0	+0.2	+2.1	-0.07	+30	+1.12	+1.24	+1.08	$227	$432
VTMB1	HBR	70%	84%	75%	95%	94%	93%	92%	93%	91%	89%	87%	68%	91%	90%	89%	90%	86%	91%	85%	89%	88%	88%	84%		
VSNE22		62	10	8	22	42	27	15	12	5	38	44	9	15	56	30	46	59	57	20	18	92	95	67	29	5
USA17236055	**SYDGEN BLACK PEARL 2006** PV	+8	+2.5	+7.6	-7.0	+3.2	+51	+85	+123	+87	+21	+1.5	-3.5	+74	+8.2	+0.3	-0.6	+0.4	+2.9	+0.27	+16	+1.04	+1.20	+1.14	$211	$342
USA15354674	HBR	76%	98%	93%	99%	99%	99%	99%	99%	98%	99%	99%	89%	98%	97%	97%	97%	96%	97%	92%	99%	99%	99%	98%		
USA16214508		99	54	11	16	33	53	75	45	75	21	74	79	35	30	43	57	46	37	55	73	85	92	82	48	63
VTMA149	**TE MANIA ADA A149** PV	+39	-7.0	-2.1	-3.1	+6.6	+53	+96	+128	+170	+9	+1.9	-1.1	+82	+2.8	-3.1	-1.7	+1.3	-0.4	-0.66	+26	+0.86	+0.74	+0.78	$90	$243
VTMX60	HBR	64%	97%	91%	99%	99%	99%	99%	99%	98%	98%	98%	86%	97%	96%	97%	97%	96%	96%	91%	97%	97%	97%	96%		
VTMU338		64	96	91	73	94	46	43	34	1	95	60	99	17	88	97	75	7	98	1	32	54	8	3	99	98
VTMK52	**TE MANIA KALIBROOK K52** PV	+45	+8.0	+5.7	-3.1	+1.3	+50	+102	+128	+102	+30	+1.7	-6.4	+71	+4.4	+0.7	+2.0	-0.7	+5.6	+1.47	+9	+1.20	+1.10	+1.14	$248	$417
USA16295688	HBR	71%	78%	70%	94%	95%	92%	92%	91%	87%	83%	88%	65%	88%	86%	85%	87%	83%	89%	80%	87%	90%	90%	87%		
VTMH423		53	9	27	73	7	57	27	35	50	1	67	17	45	75	34	16	94	3	99	91	97	79	82	11	9
VTMK138	**TE MANIA KIRBY K138** PV	+18	+0.2	+8.0	-1.2	+4.7	+53	+90	+119	+99	+19	+2.6	-9.1	+64	+6.1	+1.5	+3.1	-1.9	+8.7	+0.88	+15	+0.78	+0.74	+0.94	$268	$432
USA16295688	HBR	68%	88%	81%	99%	99%	98%	98%	98%	98%	97%	98%	83%	97%	96%	96%	97%	95%	96%	89%	99%	99%	99%	99%		
VTMH17		93	72	9	92	68	45	61	55	56	37	33	1	65	54	20	7	99	1	96	75	36	8	24	4	5
	Breed Average EBVs	**+48**	**+2.3**	**+3.2**	**-4.6**	**+3.9**	**+52**	**+94**	**+121**	**+103**	**+17**	**+2.2**	**-4.8**	**+69**	**+6.6**	**+0.1**	**-0.2**	**+0.4**	**+2.5**	**+0.23**	**+21**	**+0.84**	**+0.96**	**+1.02**	**+206**	**+353**

Angus Australia - ImmuneDEX Research Breeding Values

Ident **Name**

Sire / Dam	Reg.	ImmuneDEX IMD	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
			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
VTMN424	**TE MANIA NEBO N424 PV**	+51	+9.5	-0.1	-6.6	+4.1	+54	+102	+134	+104	+29	+4.4	-5.0	+58	+7.1	-0.9	-4.2	+0.4	+4.0	-0.16	+47	+0.92	+0.86	+0.94	$219	$372
VTMJ89	HBR	51%	91%	84%	98%	98%	98%	98%	98%	97%	96%	97%	71%	96%	96%	95%	96%	89%	94%	84%	98%	98%	98%	97%		
VTMJ214		43	4	82	20	54	38	26	22	48	2	4	44	79	42	71	96	46	16	14	1	66	25	24	38	38
VTMN1387	**TE MANIA NEON N1387 SV**	+19	+0.6	+3.4	-6.3	+3.5	+48	+86	+107	+98	+19	+1.3	-7.9	+40	+3.2	-0.1	-1.1	-2.2	+10.	-0.30	+26	+0.74	+0.80	+0.98	$229	$380
VTMK138	HBR	50%	82%	73%	98%	98%	97%	97%	97%	94%	87%	96%	64%	94%	93%	92%	94%	85%	93%	86%	97%	97%	97%	96%		
VTML452		92	69	52	24	40	68	72	78	58	37	80	4	99	86	53	66	99	1	7	30	29	14	35	27	31
VTMP888	**TE MANIA PESO P888 PV**	+53	+7.9	+6.0	-5.2	+2.1	+57	+115	+145	+120	+25	+2.4	-7.4	+90	+5.8	-0.4	+1.0	+0.5	+1.8	-0.03	+23	+0.84	+1.12	+0.96	$262	$451
VTMK226	HBR	56%	81%	73%	98%	98%	97%	97%	97%	95%	93%	94%	68%	93%	93%	92%	93%	86%	92%	83%	95%	94%	94%	91%		
VTMH423		39	10	24	39	15	27	6	9	23	6	40	7	7	58	60	29	40	64	24	41	49	82	29	5	2
DBLL292	**TOPBOS LEADING EDGE L292 PV**	+26	+2.3	+8.3	-5.8	+6.6	+73	+125	+164	+150	+23	+1.4	-4.3	+84	+4.6	-2.2	-5.0	+0.1	+1.5	+0.04	+21	+0.92	+0.76	+0.80	$226	$415
USA16295688	HBR	74%	89%	75%	98%	98%	97%	97%	97%	95%	96%	97%	69%	93%	92%	90%	92%	88%	93%	86%	97%	92%	92%	88%		
VSNF04		84	56	7	30	94	1	2	2	4	12	77	61	14	73	91	98	65	72	30	51	66	10	4	30	10
NZE17691009	**TURIHAUA CRUMP E5 SV**	+77	-0.9	-1.4	-5.7	+3.2	+28	+59	+83	+92	+13	+1.1	-9.9	+17	-0.3	+5.2	+3.8	-0.2	+1.4	+0.47	+30	+0.58	+1.20	+1.20	$138	$271
NZE17691003Y167	HBR	63%	93%	87%	97%	98%	98%	98%	98%	97%	97%	97%	89%	95%	95%	95%	95%	94%	95%	88%	91%	84%	84%	79%		
NZE17691195Q263		8	79	89	32	33	99	99	98	68	78	85	1	99	98	1	4	79	74	75	19	8	92	92	97	94
QKBP29	**WARRAWEE PATROL P29 PV**	+58	+7.4	+11.0	-12.1	+2.9	+55	+104	+139	+129	+18	+2.3	-9.7	+100	+9.1	+3.6	+2.0	+0.2	+2.0	+0.72	+30	+0.82	+1.20	+1.00	$266	$472
SMPG357	HBR	64%	79%	71%	96%	94%	93%	92%	90%	88%	82%	87%	65%	86%	85%	85%	86%	79%	87%	78%	88%	77%	78%	73%		
QKBM01		31	12	1	1	27	36	21	16	14	39	44	1	2	22	3	16	59	59	91	20	45	92	41	4	1
NWPG188	**WATTLETOP FRANKLIN G188 SV**	+49	+4.5	+6.8	-4.4	+2.3	+64	+109	+141	+116	+24	+3.7	-3.7	+84	+1.4	-1.4	-2.6	-0.1	+0.4	-1.20	+33	+1.08	+0.98	+0.96	$191	$354
USA15462648	HBR	65%	96%	88%	99%	99%	98%	98%	98%	98%	98%	98%	77%	96%	95%	95%	95%	93%	94%	88%	97%	96%	96%	94%		
NWPE295		46	35	17	52	17	8	13	14	30	8	9	75	13	95	80	86	75	92	1	12	89	53	29	70	53
NWPE111	**WATTLETOP SITZ 458N E111 SV**	+17	+4.6	+6.7	-3.8	+2.8	+51	+91	+125	+99	+25	+2.0	-1.4	+83	+5.6	-4.2	-3.4	+0.9	+2.8	-0.53	+25	+0.96	+0.90	+1.10	$186	$322
USA14474596	HBR	67%	90%	80%	97%	98%	97%	97%	97%	95%	96%	95%	74%	93%	92%	92%	93%	89%	93%	85%	95%	87%	87%	83%		
NWPC36		94	34	18	62	25	56	58	41	56	6	56	98	15	61	99	92	19	39	2	35	73	33	73	74	76
CWDJ17	**WEATHERLY JAMES J17 SV**	+36	-2.9	-4.4	-3.3	+6.0	+50	+84	+110	+119	+3	+1.3	-3.8	+66	+8.7	+1.1	+2.4	+1.0	+3.4	-0.04	+5	+0.86	+1.24	+1.04	$198	$335
BNAD145	HBR	74%	80%	72%	93%	93%	92%	92%	93%	90%	87%	86%	67%	90%	89%	89%	90%	85%	91%	84%	88%	87%	87%	81%		
CWDF14		69	87	96	70	89	61	79	74	26	99	80	73	60	25	26	12	15	27	23	97	54	95	54	63	68
CWDM5	**WEATHERLY MOXY M5 SV**	+44	+3.0	+6.9	-4.4	+4.0	+55	+100	+133	+112	+28	+2.6	-6.3	+91	+7.3	+2.8	-0.1	+0.3	+2.7	+0.27	+21	+0.98	+1.04	+0.94	$234	$400
SMPG357	HBR	52%	80%	70%	93%	96%	94%	94%	95%	93%	90%	89%	61%	86%	84%	85%	85%	80%	84%	72%	92%	91%	91%	82%		
CWDJ15		55	50	16	52	52	33	32	25	35	3	33	18	6	40	6	48	53	42	55	51	76	67	24	22	17
	Breed Average EBVs	**+48**	**+2.3**	**+3.2**	**-4.6**	**+3.9**	**+52**	**+94**	**+121**	**+103**	**+17**	**+2.2**	**-4.8**	**+69**	**+6.6**	**+0.1**	**-0.2**	**+0.4**	**+2.5**	**+0.23**	**+21**	**+0.84**	**+0.96**	**+1.02**	**+206**	**+353**

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