TACE

TransTasman Angus Cattle Evaluation

ANGUS ImmuneDEX

RESEARCH BREEDING VALUES

JUNE 2023

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.

Date: May 29, 2023

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
NXOL172	**AJC L172 SV**	+46	+6.3	+7.3	-7.9	+3.1	+61	+106	+150	+136	+13	+2.0	-4.4	+77	+5.9	-0.6	-0.3	+0.2	+1.3	-0.97	+26	+1.40	+1.28	+1.24	$218	$405
NXOF43	APR	69%	73%	55%	93%	95%	94%	93%	93%	85%	83%	79%	52%	90%	87%	82%	88%	80%	89%	81%	82%	85%	85%	81%		
NXOJ432		51	20	10	10	29	9	11	5	7	81	52	57	19	53	62	49	66	72	1	23	99	96	95	29	10
DGJG10	**ALLOURA GET CRACKING G10 SV**	+53	+9.9	+8.8	-3.5	+2.5	+43	+74	+86	+74	+13	-0.3	-8.3	+47	+16.1	+1.5	-0.2	+1.1	+5.4	+0.54	-3	+0.50	+1.00	+0.94	$282	$436
VTMB1	HBR	69%	93%	81%	99%	98%	98%	98%	98%	97%	97%	97%	74%	95%	93%	94%	94%	89%	92%	87%	96%	96%	95%	93%		
DGJZ15		39	3	4	70	18	81	89	96	87	84	99	1	93	1	17	47	14	2	88	99	3	57	20	1	3
DGJL94	**ALLOURA LOCK STOCK &**	+44	+6.7	+4.4	-4.8	+2.8	+54	+87	+114	+108	+12	+0.8	-4.9	+61	+0.6	+1.3	-1.6	+0.3	+2.3	-0.36	+19	+0.94	+0.86	+0.92	$198	$353
USA15832750	HBR	64%	73%	59%	93%	95%	93%	93%	93%	88%	80%	86%	50%	86%	81%	77%	82%	74%	84%	73%	86%	84%	82%	76%		
DGJH24		55	17	35	49	23	33	60	57	36	85	90	42	67	97	20	72	60	43	4	52	70	23	16	53	43
DGJQ30	**ALLOURA QUINELLA Q30 SV**	+12	+4.2	+3.4	-0.9	+2.3	+51	+94	+111	+109	+17	+3.4	-7.8	+66	+13.2	+0.9	+0.9	+0.9	+4.6	+0.29	+16	+1.04	+1.08	+1.12	$269	$443
WWEL3	HBR	51%	72%	60%	92%	89%	84%	79%	81%	78%	70%	76%	50%	73%	67%	69%	70%	64%	71%	62%	69%	70%	70%	69%		
DGJK117		98	38	46	95	16	46	40	63	34	54	11	2	51	3	27	27	23	5	65	72	85	74	76	2	2
WJMF96	**ARDCAIRNIE F96 SV**	+21	+5.6	+4.0	-5.0	+3.0	+49	+89	+122	+91	+15	+1.8	-4.0	+68	+7.4	-1.3	-0.8	+1.2	+0.6	-0.31	+9	+0.48	+0.82	+0.92	$204	$346
WJMB59	HBR	55%	88%	76%	98%	98%	97%	97%	97%	95%	95%	96%	63%	92%	90%	91%	91%	86%	91%	79%	88%	87%	87%	82%		
WJMD25		90	26	39	45	27	54	53	38	65	70	60	68	43	35	77	58	11	88	6	93	2	16	16	46	49
WJMJ27	**ARDCAIRNIE J27 SV**	+16	+7.9	+9.7	-8.7	+2.7	+57	+100	+139	+130	+9	+0.4	-4.5	+97	+2.2	+2.2	+1.2	-0.1	+1.1	+0.29	+1	+0.88	+1.06	+1.18	$205	$390
USA15354674	HBR	74%	81%	69%	96%	96%	95%	96%	96%	92%	90%	92%	63%	92%	91%	90%	91%	87%	92%	85%	83%	87%	87%	82%		
WJMG96		95	10	2	6	21	20	23	12	11	97	96	54	2	91	10	23	81	77	65	99	58	71	88	45	16
NAQA241	**ARDROSSAN EQUATOR A241 PV**	+49	-1.1	+2.2	-4.9	+4.1	+50	+91	+121	+108	+20	+3.1	-8.2	+85	+8.7	-1.7	-0.6	+1.3	+1.4	+0.52	+25	+0.46	+0.84	+1.00	$225	$380
USA2928	HBR	80%	99%	97%	99%	99%	99%	99%	99%	99%	99%	99%	95%	98%	98%	98%	98%	98%	98%	96%	99%	99%	99%	99%		
NAQW38		46	78	58	47	50	53	48	41	36	25	16	1	7	22	84	55	9	69	86	25	2	20	38	23	22
NAQN329	**ARDROSSAN HOLBROOK N329**	+21	-0.9	-2.5	-3.3	+3.2	+52	+96	+121	+90	+23	+3.1	-6.4	+75	+6.2	+2.0	+2.2	-1.0	+4.6	+1.01	+13	+0.78	+0.98	+0.98	$222	$360
NAQH318	HBR	54%	69%	55%	96%	94%	94%	93%	91%	85%	73%	78%	50%	88%	87%	86%	87%	78%	89%	79%	79%	81%	87%	83%		
NAQK30		90	77	90	73	30	42	34	41	66	12	16	11	23	49	11	12	99	5	99	84	36	52	31	26	38
NAQH255	**ARDROSSAN HONOUR H255 PV**	+27	-0.6	-1.2	-3.1	+4.6	+44	+74	+98	+93	+14	+2.1	-7.2	+61	+5.9	+1.1	-0.9	+0.5	+2.4	+0.94	+6	+0.42	+1.02	+1.24	$181	$311
NORE11	HBR	81%	95%	86%	99%	99%	98%	98%	98%	98%	98%	98%	83%	96%	95%	96%	96%	94%	96%	91%	97%	97%	97%	95%		
NAQD17		82	75	85	76	62	78	90	85	63	77	48	4	67	53	24	60	47	41	99	97	1	62	95	70	74
QQFH147	**ASCOT HALLMARK H147 PV**	+47	-5.9	+3.5	-5.2	+7.4	+60	+109	+152	+131	+15	+3.6	-5.9	+85	-2.4	+0.7	+0.6	-0.8	+2.6	+0.51	+14	+0.44	+0.80	+1.02	$189	$347
VTME343	HBR	72%	94%	83%	98%	99%	98%	98%	98%	97%	97%	98%	76%	96%	94%	95%	95%	93%	95%	87%	97%	95%	95%	92%		
NMMF123		49	94	45	42	97	12	9	4	10	68	8	18	8	99	31	33	97	35	86	77	2	13	45	62	48
HIOE7	**AYRVALE BARTEL E7 PV**	+41	+10.1	+10.6	-5.1	+1.7	+49	+86	+111	+71	+26	+2.5	-7.9	+67	+8.2	-0.4	+1.0	+1.1	+3.6	+0.44	+2	+1.00	+1.00	+1.12	$287	$444
VTMB219	HBR	85%	99%	96%	99%	99%	99%	99%	99%	99%	99%	99%	93%	98%	98%	98%	98%	98%	98%	95%	99%	99%	99%	98%		
BVVB32		60	3	1	44	10	56	65	63	90	4	33	2	48	27	57	26	14	15	80	99	79	57	76	1	2
HIOG11	**AYRVALE GENETIC G11 PV**	+24	-4.2	-16.3	-5.7	+5.1	+66	+118	+163	+142	+19	+1.8	-5.6	+83	-0.3	-3.4	-2.1	-0.4	+2.3	-0.25	+36	+1.08	+1.04	+1.14	$191	$342
SEWD138	HBR	67%	87%	76%	98%	98%	97%	97%	97%	96%	95%	94%	59%	92%	89%	90%	91%	85%	91%	80%	87%	87%	88%	82%		
HIOE2		86	90	99	34	72	3	2	1	5	35	60	24	10	98	98	80	91	43	8	6	89	66	81	61	53
NBBN47	**BALD BLAIR NELSON N47 PV**	+25	+4.9	-0.4	-5.5	+4.4	+58	+108	+159	+156	+20	+1.1	-3.7	+89	+5.0	-1.1	-1.4	+0.8	+0.6	-0.29	+29	+1.02	+1.14	+1.16	$186	$370
HIOG18	HBR	50%	73%	60%	95%	94%	92%	92%	91%	88%	79%	88%	53%	87%	85%	85%	86%	78%	87%	78%	85%	85%	85%	81%		
NBBL83		85	32	80	37	57	18	10	2	2	27	84	76	5	65	73	69	28	88	6	16	82	84	85	65	30
	Breed Average EBVs	**+47**	**+2.2**	**+2.6**	**-4.8**	**+4.1**	**+50**	**+90**	**+117**	**+100**	**+17**	**+2.1**	**-4.6**	**+66**	**+6.3**	**-0.1**	**-0.3**	**+0.5**	**+2.2**	**+0.19**	**+20**	**+0.84**	**+0.97**	**+1.03**	**+197**	**+339**

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
		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
ECMM114	**BANNABY BERKLEY M114 SV**	+14	+4.0	+5.1	-10.6	+4.4	+61	+100	+146	+171	+5	+4.6	-8.8	+73	+3.0	-0.6	-3.5	+0.3	+1.9	-0.16	+25	+0.82	+0.74	+1.14	$201	$417
VTMB1	HBR	52%	74%	65%	95%	93%	90%	91%	92%	84%	74%	86%	63%	84%	84%	84%	84%	78%	85%	75%	78%	87%	87%	83%		
BBAZ107		97	40	28	2	57	9	22	6	1	99	2	1	31	86	62	93	60	55	13	27	45	7	81	49	6
ECMK63	**BANNABY REALITY K63 PV**	+74	+5.1	+3.1	-3.4	+3.7	+45	+78	+102	+106	+12	+1.8	-1.7	+52	+6.0	-0.5	-1.2	+0.6	+1.1	-0.16	+39	+0.58	+1.04	+1.18	$136	$271
NZE14647008839	HBR	68%	76%	64%	96%	96%	92%	91%	92%	86%	78%	81%	59%	89%	88%	87%	88%	83%	90%	82%	83%	85%	85%	81%		
ECMH45		11	30	49	72	41	74	83	81	40	86	60	97	87	52	60	66	40	77	13	3	7	66	88	94	90
ECMN187	**BANNABY REALITY N187 SV**	+58	+8.7	+6.8	-7.1	+3.7	+47	+75	+91	+82	+10	+4.0	-7.2	+54	+8.1	+2.5	+3.1	+0.1	+3.4	+0.44	+7	+0.82	+1.16	+1.42	$233	$387
NZE14647008839	HBR	50%	73%	64%	94%	92%	90%	91%	91%	85%	74%	87%	60%	86%	86%	85%	86%	79%	88%	78%	82%	87%	87%	84%		
ECMF113		31	7	13	16	41	63	88	93	78	95	4	4	82	27	7	6	72	19	80	96	45	87	99	16	18
VONG272	**BANQUET GARRETT G272 SV**	+57	-1.0	+4.6	-1.8	+6.4	+54	+98	+145	+147	+18	+4.7	-1.0	+56	+2.0	-2.6	-3.9	+0.3	+2.2	-0.79	+31	+0.56	+1.04	+1.10	$125	$282
VOND412	HBR	64%	76%	60%	94%	96%	93%	94%	94%	88%	85%	90%	55%	88%	87%	87%	87%	79%	85%	78%	83%	87%	87%	81%		
VONC368		33	78	33	89	91	32	27	7	3	39	2	98	79	92	94	95	60	46	1	11	6	66	70	96	86
NUIF32	**BONNY BROOKE FALCO F32 SV**	+49	-7.1	-5.4	+0.1	+6.4	+51	+80	+111	+98	+19	-0.1	-3.4	+65	-1.9	+4.0	+4.1	-1.3	+2.1	-0.45	+6	+1.04	+0.92	+1.10	$129	$228
NGMC196	HBR	53%	63%	48%	90%	88%	89%	88%	89%	81%	71%	67%	50%	83%	80%	81%	82%	72%	79%	70%	77%	79%	79%	74%		
NUID96		46	96	97	98	91	43	79	64	53	34	99	82	53	99	2	3	99	49	2	97	85	37	70	96	97
HCAG013	**BOONAROO GRAVITY G013 PV**	+86	+5.9	+1.1	-5.8	+3.4	+50	+88	+116	+107	+26	+3.8	-6.8	+57	+4.9	-2.9	-3.0	+1.2	+2.8	-0.50	+11	+0.46	+0.92	+1.08	$217	$376
VTMA217	HBR	70%	88%	79%	98%	98%	97%	97%	97%	94%	94%	96%	70%	92%	91%	91%	91%	86%	90%	83%	93%	93%	94%	91%		
VTMZ618		2	23	69	33	34	53	56	53	38	3	6	7	78	66	96	89	11	31	2	88	2	37	65	31	25
NGME124	**BOOROOMOOKA INSPIRED E124**	+16	-5.9	+0.8	-6.6	+3.7	+46	+82	+107	+98	+14	+0.9	-8.0	+78	+3.5	-0.3	+3.3	-0.4	+2.4	+0.71	+24	+0.80	+0.84	+0.78	$187	$318
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	94	71	22	41	70	74	71	53	75	89	1	17	82	55	5	91	41	95	30	40	20	2	64	70
NGMN418	**BOOROOMOOKA JACKPOT N418**	+24	+2.9	+4.7	-8.8	+5.6	+61	+109	+139	+127	+12	+3.2	-7.3	+85	+10.8	+0.8	+2.2	+0.8	+1.9	+0.17	+26	+1.36	+1.08	+1.00	$271	$458
WWEL3	HBR	50%	74%	61%	94%	96%	94%	94%	94%	91%	80%	91%	53%	85%	84%	84%	85%	78%	85%	76%	95%	90%	90%	84%		
NGML471		86	50	32	5	81	10	8	12	13	88	14	4	8	9	29	12	28	55	49	25	99	74	38	2	1
NGMK9	**BOOROOMOOKA KINGY K9 PV**	+25	-5.3	-7.6	-2.2	+6.6	+49	+86	+121	+112	+19	+3.1	-7.1	+67	+8.7	+0.8	-0.5	+0.4	+4.5	+0.51	+12	+0.70	+0.92	+0.88	$204	$336
BNAD145	HBR	68%	87%	78%	97%	98%	97%	97%	97%	96%	95%	95%	69%	92%	90%	91%	91%	88%	91%	82%	97%	95%	95%	90%		
NGMA281		85	93	99	86	92	53	65	41	30	32	16	5	47	22	29	53	53	6	86	85	21	37	9	47	57
NGMP96	**BOOROOMOOKA PARAGON P96**	+15	-0.3	+2.8	-7.5	+3.9	+60	+123	+160	+124	+31	+3.3	-8.3	+110	+12.2	-1.2	+0.1	+1.0	+3.0	+0.52	+40	+0.96	+1.02	+1.18	$297	$483
WWEL3	HBR	52%	80%	64%	97%	98%	97%	96%	96%	88%	75%	95%	55%	80%	80%	81%	80%	75%	79%	65%	97%	88%	86%	84%		
NGMM566		96	74	52	13	46	11	1	2	15	1	12	1	1	5	75	41	18	26	86	3	73	62	88	1	1
BOWK2	**BOWMAN AUSTRALIA K2 PV**	+42	+5.6	+3.0	-6.9	+3.8	+48	+94	+121	+98	+20	+4.5	-7.8	+68	+7.3	+0.3	-1.4	+0.9	+1.2	-0.49	+30	+0.82	+0.98	+0.90	$222	$385
VTME343	HBR	74%	75%	70%	92%	89%	88%	88%	88%	83%	79%	76%	65%	86%	86%	86%	86%	81%	88%	80%	81%	84%	84%	81%		
NAQZ31		58	26	50	18	44	61	39	41	54	28	2	2	44	36	40	69	23	75	2	13	45	52	12	26	19
SRKK306	**BOWMONT KING K306 PV**	+31	-1.4	-9.4	-5.6	+4.7	+52	+82	+107	+89	-1	-0.1	-5.3	+69	+15.2	-0.6	-1.9	+1.7	+5.0	+0.57	+29	+0.54	+0.92	+0.76	$253	$371
NJWG279	HBR	69%	85%	73%	97%	97%	97%	97%	97%	94%	92%	95%	66%	93%	92%	91%	92%	89%	93%	84%	94%	90%	91%	87%		
TFAD58		76	80	99	36	64	42	73	72	68	99	99	32	41	1	62	77	3	3	90	15	5	37	1	5	29
AMQH64	**BROOKLANA HI TOWER H64 PV**	+86	-6.8	-2.7	+0.9	+5.7	+51	+100	+141	+130	+19	+1.5	-3.2	+81	+5.2	+1.6	+0.9	+0.5	+1.4	+0.64	+29	+0.64	+0.94	+1.04	$156	$292
VTME343	HBR	71%	76%	67%	93%	91%	89%	89%	90%	84%	76%	76%	62%	87%	86%	86%	87%	79%	88%	80%	80%	84%	84%	78%		
AMQF27		2	95	91	99	83	47	23	10	11	37	72	85	12	63	16	27	47	69	93	16	13	42	51	87	83
	Breed Average EBVs	**+47**	**+2.2**	**+2.6**	**-4.8**	**+4.1**	**+50**	**+90**	**+117**	**+100**	**+17**	**+2.1**	**-4.6**	**+66**	**+6.3**	**-0.1**	**-0.3**	**+0.5**	**+2.2**	**+0.19**	**+20**	**+0.84**	**+0.97**	**+1.03**	**+197**	**+339**

Angus Australia - ImmuneDEX Research Breeding Values

Ident Sire Dam	Name Reg.	ImmuneDEX	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
		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
QBUG49	**BURENDA GEIGER COUNTER**	+11	+9.7	+10.0	-7.6	+2.3	+38	+80	+103	+82	+18	+2.2	-8.6	+59	+2.7	+0.9	-1.4	+0.1	+4.0	+0.13	+31	+0.98	+1.18	+0.96	$222	$383
VTMB1	HBR	69%	84%	73%	96%	97%	95%	96%	94%	94%	93%	94%	68%	91%	90%	90%	91%	85%	89%	83%	95%	85%	85%	81%		
QBUE5		98	3	1	12	16	92	80	79	78	40	44	1	71	88	27	69	72	10	43	12	77	89	25	26	20
GTNM3	**CHILTERN PARK MARBLES M3**	+18	+3.7	-4.3	-6.1	+2.5	+41	+76	+93	+57	+27	+3.3	-6.8	+55	+4.1	-0.1	-3.0	+0.2	+3.6	-0.11	+11	+0.50	+1.08	+1.14	$194	$304
NORE11	HBR	81%	81%	71%	96%	96%	96%	96%	96%	90%	86%	90%	66%	91%	89%	85%	90%	83%	91%	83%	88%	93%	93%	90%		
GTNJ4		93	42	95	28	18	85	87	90	97	2	12	7	81	76	50	89	66	15	16	88	3	74	81	57	78
GTNP9	**CHILTERN PARK PICASSO P9 PV**	+37	+9.0	+5.9	-3.5	+1.6	+57	+103	+134	+97	+22	+3.5	-7.5	+98	+7.8	-0.7	+1.1	-0.4	+4.6	+0.50	+35	+0.76	+0.70	+0.84	$278	$455
HKFJ5	HBR	53%	76%	63%	97%	97%	92%	93%	92%	85%	72%	87%	54%	84%	82%	83%	83%	77%	85%	72%	75%	78%	80%	76%		
GTNK26		67	6	20	70	9	19	16	17	55	15	9	3	1	30	64	24	91	5	85	7	32	4	5	1	1
THCL61	**CLUDEN NEWRY ELEVATOR L61**	+19	-3.2	-2.1	-3.9	+6.4	+64	+126	+159	+166	+20	+1.5	-3.9	+104	+9.8	-3.7	-2.0	+1.4	-1.1	+0.14	+40	+0.66	+0.92	+0.94	$188	$371
WDCE11	HBR	71%	77%	65%	93%	95%	94%	94%	94%	89%	85%	89%	60%	89%	88%	84%	89%	82%	90%	80%	91%	92%	92%	89%		
THCF92		92	87	89	64	91	5	1	2	1	25	72	71	1	14	99	78	7	99	44	2	15	37	20	63	29
QMUM13	**CLUNES CROSSING DUSTY M13**	+35	+1.2	+3.8	-7.9	+5.3	+66	+102	+122	+67	+14	+1.0	-7.7	+72	+13.0	-2.5	-3.9	+1.4	+1.9	+0.09	+10	+0.88	+0.82	+1.02	$305	$440
USA16295688	HBR	50%	93%	81%	99%	99%	98%	98%	98%	97%	95%	98%	68%	94%	93%	93%	93%	88%	93%	84%	97%	97%	97%	95%		
QMUG1		70	64	42	10	76	4	18	40	93	78	87	2	32	3	93	95	7	55	38	92	58	16	45	1	2
NBHL348	**CLUNIE RANGE LEGEND L348 PV**	+17	-6.0	+4.4	-8.2	+6.1	+58	+103	+126	+156	+2	+2.9	-6.6	+63	+0.7	+3.6	+1.2	-0.8	+2.4	+0.09	+25	+0.48	+0.82	+1.28	$164	$341
NZE14647008839	HBR	68%	93%	82%	99%	99%	98%	98%	98%	97%	96%	98%	73%	94%	93%	93%	93%	90%	93%	83%	97%	97%	97%	96%		
AHWJ81		94	94	35	8	88	16	16	31	2	99	21	9	61	97	3	23	97	41	38	25	2	16	98	83	53
WDCH249	**COONAMBLE HECTOR H249 SV**	+33	-0.2	-2.1	-8.8	+4.5	+45	+80	+100	+86	+5	+1.2	-4.5	+46	+10.9	+3.5	+4.3	+0.9	+0.1	-0.50	+42	+0.42	+0.50	+0.82	$188	$310
USA14885809	HBR	70%	94%	84%	99%	99%	98%	98%	98%	97%	97%	98%	73%	95%	94%	94%	94%	92%	94%	86%	98%	96%	96%	93%		
WDCE9		73	73	89	5	60	75	80	83	73	99	81	54	94	9	3	2	23	94	2	2	1	1	4	63	74
WDCJ266	**COONAMBLE JUNIOR J266 PV**	+71	-8.7	-6.9	-0.5	+5.7	+59	+105	+143	+131	+17	+2.3	-5.2	+103	+10.8	-5.0	-5.0	+1.6	+2.3	-0.34	+8	+0.92	+0.78	+1.06	$199	$336
BNAD145	HBR	76%	89%	77%	98%	98%	97%	97%	97%	94%	95%	96%	70%	93%	91%	91%	91%	88%	91%	83%	93%	94%	94%	90%		
WHHA61		14	97	99	96	83	14	14	8	10	48	40	34	1	9	99	99	4	43	5	94	66	11	58	51	57
WDCK314	**COONAMBLE KEVIN K314 PV**	+99	-1.8	+3.1	-2.4	+5.0	+55	+103	+134	+109	+24	+4.3	-6.2	+89	+6.5	+0.3	+1.0	+0.1	+1.5	+0.31	+25	+0.48	+1.08	+1.22	$212	$365
NAQA241	HBR	65%	83%	71%	95%	97%	96%	95%	96%	91%	91%	92%	65%	90%	89%	89%	89%	85%	90%	80%	81%	85%	85%	82%		
WDCD94		1	82	49	84	71	29	16	17	34	7	3	14	4	46	40	26	72	67	67	25	2	74	93	37	34
BHRE614	**DUNOON EVIDENT E614 PV**	+19	-11.3	-17.7	+0.0	+5.9	+52	+90	+111	+108	+14	+3.6	-5.9	+58	+11.2	-2.7	-1.4	+1.7	+1.7	+0.41	+43	+0.88	+1.06	+0.86	$172	$276
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	85	42	51	64	36	76	8	18	74	8	94	69	3	61	78	2	58	71	7	77	88
USA16198796	**EF COMPLEMENT 8088 PV**	+15	+5.6	+9.3	-5.2	+2.9	+53	+98	+130	+96	+21	+1.3	-8.0	+77	+7.6	+1.3	+2.0	+0.4	+1.8	+0.55	+21	+0.94	+1.30	+1.14	$267	$438
USA14686137	HBR	85%	98%	93%	99%	99%	99%	99%	99%	99%	99%	99%	90%	98%	97%	98%	97%	97%	97%	92%	99%	99%	99%	98%		
USA15452880		96	26	2	42	25	37	28	24	57	17	78	1	21	33	20	14	53	58	88	41	70	97	81	2	2
WWEQ15	**ESSLEMONT GARTH Q15 PV**	+36	-3.8	+2.3	-9.9	+5.9	+62	+107	+147	+135	+28	+2.5	-6.6	+69	+8.2	-3.7	-3.8	+0.9	+3.0	-0.40	+40	+0.94	+1.18	+1.04	$230	$394
VTMG67	HBR	52%	70%	60%	92%	89%	86%	80%	80%	77%	69%	74%	52%	73%	67%	69%	69%	64%	70%	62%	82%	69%	69%	68%		
WWEN17		68	89	57	3	85	7	10	6	8	1	33	9	41	27	99	95	23	26	3	2	70	89	51	18	15
WWEL3	**ESSLEMONT LOTTO L3 PV**	+8	-4.9	-2.8	-5.7	+4.5	+59	+109	+140	+134	+19	+3.6	-9.0	+90	+14.3	+0.5	+1.3	+1.3	+3.8	+0.28	+16	+1.12	+1.00	+1.16	$280	$456
HIOG18	HBR	77%	95%	87%	99%	99%	99%	99%	99%	98%	98%	98%	78%	97%	95%	96%	96%	94%	96%	90%	98%	98%	98%	97%		
WWEJ8		99	92	92	34	60	13	9	11	8	35	8	1	4	2	36	22	9	13	63	71	92	57	85	1	1
	Breed Average EBVs	**+47**	**+2.2**	**+2.6**	**-4.8**	**+4.1**	**+50**	**+90**	**+117**	**+100**	**+17**	**+2.1**	**-4.6**	**+66**	**+6.3**	**-0.1**	**-0.3**	**+0.5**	**+2.2**	**+0.19**	**+20**	**+0.84**	**+0.97**	**+1.03**	**+197**	**+339**

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
		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
WWEQ24	**ESSLEMONT QUOKKA Q24 [PV]**	+53	+5.6	+0.6	-2.8	+2.5	+45	+84	+112	+70	+23	+4.2	-6.2	+66	+20.2	+1.0	+0.3	+2.3	+2.8	+0.99	+34	+0.76	+0.94	+0.98	$277	$414
WWEN12	HBR	52%	68%	53%	93%	93%	90%	85%	85%	80%	65%	80%	46%	73%	71%	73%	73%	67%	73%	58%	84%	60%	60%	60%		
WWEN7		39	26	73	79	18	74	69	61	90	11	3	14	52	1	25	38	1	31	99	7	32	42	31	1	7
USA16295688	**G A R PROPHET [SV]**	+43	+3.6	+4.5	-1.0	+3.6	+66	+106	+132	+81	+24	+0.7	-6.1	+71	+3.4	-0.6	-1.1	-0.8	+4.7	+0.63	+27	+1.02	+0.82	+0.90	$275	$420
USA13009379	HBR	88%	98%	92%	99%	99%	99%	99%	99%	99%	99%	99%	88%	98%	97%	97%	97%	97%	97%	93%	99%	99%	99%	98%		
USA15129456		56	43	34	94	39	3	12	20	79	7	92	15	36	83	62	64	97	5	93	20	82	16	12	1	5
USA17328461	**G A R SURE FIRE [SV]**	+96	+7.2	+3.4	-3.3	+2.3	+50	+91	+110	+75	+18	+4.1	-6.9	+64	+7.7	-0.3	-0.2	+0.8	+3.2	-0.22	+28	+1.14	+0.94	+0.62	$257	$408
USA16205036	HBR	79%	94%	82%	99%	99%	98%	98%	98%	97%	98%	98%	77%	96%	95%	95%	95%	94%	95%	87%	95%	99%	99%	92%		
USA16431932		1	14	46	73	16	49	49	66	86	44	4	6	57	31	55	47	28	22	9	18	94	42	1	4	9
ASRM9	**GATES MENTOR M9 [SV]**	+40	+2.4	+4.3	-3.1	+6.2	+62	+112	+147	+130	+20	+4.1	-7.2	+88	+11.3	-5.0	-5.8	+2.0	+3.0	+0.42	+9	+1.00	+1.16	+1.16	$275	$459
HIOE7	HBR	54%	75%	64%	95%	93%	90%	90%	91%	84%	80%	81%	58%	85%	82%	82%	83%	75%	85%	76%	79%	81%	82%	78%		
ASRK93		61	54	36	76	89	7	6	6	10	29	4	4	6	7	99	99	1	26	79	94	79	87	85	1	1
QBGH221	**GLENOCH HINMAN H221 [SV]**	+69	+5.3	-2.8	-3.4	+3.1	+54	+92	+126	+115	+21	+1.0	-3.6	+85	+6.1	-2.6	-5.2	+0.6	+5.2	-0.43	+16	+0.88	+0.82	+1.04	$208	$355
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	28	92	72	29	33	46	31	26	17	87	78	8	51	94	99	40	3	3	70	58	16	51	41	42
DKKM41	**HARDHAT H708 MAIMURU J51**	+86	+3.8	+3.3	-2.5	+2.3	+45	+89	+116	+96	+11	+1.1	-3.9	+62	+2.7	+1.0	-2.6	-0.4	+6.7	+0.13	+23	+1.04	+1.02	+1.12	$206	$349
NORH708	APR	50%	69%	55%	94%	92%	89%	89%	90%	83%	70%	77%	56%	87%	87%	86%	87%	78%	89%	81%	84%	88%	88%	85%		
DKKJ51		2	41	47	83	16	73	54	52	57	90	84	71	62	88	25	86	91	1	43	34	85	62	76	44	46
NHZF1023	**HAZELDEAN F1023 [SV]**	+42	+5.7	+2.2	-3.5	+2.8	+40	+76	+88	+66	+14	+3.8	-6.5	+51	+9.2	+3.1	+0.0	+0.1	+6.1	+1.31	+5	+0.48	+0.98	+1.04	$233	$366
VTMB1	APR	68%	89%	76%	98%	98%	98%	98%	98%	96%	94%	97%	74%	94%	93%	93%	93%	89%	93%	86%	97%	97%	96%	94%		
NHZB723		58	25	58	70	23	88	86	94	93	74	6	10	88	18	4	43	72	1	99	98	2	52	51	16	33
NHZJ140	**HAZELDEAN JAIPUR J140 [SV]**	+86	+8.7	+8.0	-5.0	+1.8	+39	+74	+101	+76	+29	+3.3	-7.6	+69	+5.0	-1.1	-1.2	+1.1	+2.7	+1.10	+53	+0.28	+0.78	+1.00	$218	$365
NAQA241	HBR	73%	93%	79%	98%	98%	98%	98%	98%	97%	97%	98%	82%	95%	94%	94%	94%	92%	94%	87%	98%	98%	98%	95%		
NHZC33		2	7	6	45	10	91	89	82	86	1	12	2	41	65	73	66	14	33	99	1	1	11	38	30	34
NHZK416	**HAZELDEAN KATZEN K416 [SV]**	+19	+9.6	+4.7	-11.6	+2.1	+55	+93	+121	+102	+17	+3.5	-8.4	+73	+1.0	+4.3	+2.8	-0.7	+0.8	+0.29	+55	+1.02	+1.00	+1.06	$218	$391
NORE11	APR	73%	88%	75%	98%	98%	97%	97%	97%	95%	94%	97%	72%	93%	92%	90%	92%	87%	93%	86%	97%	95%	95%	92%		
NHZH342		92	4	32	1	13	29	42	41	47	53	9	1	29	96	1	8	96	84	65	1	82	57	58	30	16
NHZM586	**HAZELDEAN M586 [SV]**	+71	+8.9	+9.7	-9.3	+2.1	+50	+91	+120	+99	+18	+4.3	-9.7	+73	+7.5	+0.9	+0.8	-0.1	+5.5	+0.98	+44	+0.52	+0.92	+1.10	$281	$468
NHZJ140	APR	51%	83%	64%	98%	98%	96%	96%	96%	94%	88%	95%	62%	92%	90%	90%	90%	84%	91%	82%	93%	92%	92%	88%		
NHZH356		14	6	2	4	13	51	49	43	52	46	3	1	29	34	27	29	81	2	99	1	4	37	70	1	1
NHZQ319	**HAZELDEAN Q319 [PV]**	+70	+6.8	+9.6	-10.3	+2.3	+58	+110	+149	+137	+19	+3.4	-9.6	+90	+5.1	+1.9	+0.7	-0.8	+5.0	+0.26	+28	+0.84	+1.10	+1.06	$276	$492
NHZM586	APR	51%	68%	49%	97%	96%	82%	79%	80%	78%	67%	77%	43%	71%	66%	69%	69%	62%	70%	59%	61%	69%	64%	60%		
NHZL1175		15	17	2	2	16	17	7	5	7	34	11	1	4	64	12	31	97	3	61	19	49	78	58	1	1
KILK18	**KILLAIN ALASKA K18 [PV]**	+26	-9.1	-5.1	+0.0	+7.1	+65	+121	+165	+174	+14	+3.6	-2.4	+89	+5.1	-2.6	-4.3	+0.9	-1.3	-0.75	+24	+1.16	+0.86	+1.02	$119	$280
USA16417285	HBR	53%	69%	56%	88%	86%	85%	85%	86%	81%	77%	76%	47%	83%	83%	82%	83%	80%	85%	72%	68%	77%	77%	66%		
USA15107929		84	98	97	97	96	4	2	1	1	78	8	93	5	64	94	97	23	99	1	30	95	23	45	97	87
BLAP130	**KNOWLA PACKER P130 [PV]**	+16	+1.1	-0.9	-3.7	+5.3	+59	+105	+144	+126	+10	+1.2	-5.6	+88	+7.7	-0.2	-0.5	+0.7	+2.9	+0.25	+24	+0.86	+1.26	+1.00	$243	$409
SRKK306	HBR	51%	67%	54%	91%	89%	85%	83%	84%	79%	69%	82%	48%	73%	70%	72%	72%	67%	72%	61%	76%	75%	75%	71%		
BLAK113		95	64	83	67	76	14	13	7	13	95	81	24	6	31	52	53	34	28	59	29	54	95	38	9	8
	Breed Average EBVs	**+47**	**+2.2**	**+2.6**	**-4.8**	**+4.1**	**+50**	**+90**	**+117**	**+100**	**+17**	**+2.1**	**-4.6**	**+66**	**+6.3**	**-0.1**	**-0.3**	**+0.5**	**+2.2**	**+0.19**	**+20**	**+0.84**	**+0.97**	**+1.03**	**+197**	**+339**

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
		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
BLAP91	**KNOWLA PEPPER P91** PV	+22	+5.8	+4.1	-6.2	+4.1	+62	+121	+156	+163	+12	+1.8	-8.4	+83	+8.8	+1.9	+1.5	+0.6	+2.7	+0.47	-6	+1.00	+1.06	+0.94	$280	$506
HIOG18	HBR	53%	72%	60%	95%	94%	91%	88%	89%	83%	72%	87%	56%	77%	75%	77%	77%	72%	77%	64%	86%	86%	87%	83%		
BLAL06		89	24	38	27	50	8	2	3	1	86	60	1	10	21	12	19	40	33	83	99	79	71	20	1	1
VLYN131	**LAWSONS CHARLIE N131** SV	+56	-4.0	-2.5	-4.7	+5.6	+74	+134	+167	+133	+24	+3.5	-5.2	+81	+6.0	-1.9	-2.2	+0.1	+1.2	+0.33	+30	+0.86	+0.76	+0.88	$242	$409
USA16295688	HBR	56%	76%	66%	95%	96%	93%	92%	89%	84%	72%	86%	56%	85%	84%	84%	85%	77%	86%	76%	90%	91%	90%	86%		
VLYL710		35	90	90	51	81	1	1	1	9	6	9	34	13	52	87	81	72	75	69	13	54	9	9	10	8
VLYL483	**LAWSONS LINKEDIN L483** SV	+55	+5.4	-10.0	-1.3	+3.8	+58	+108	+152	+137	+28	+4.1	-4.9	+105	+9.8	-0.6	+2.3	+0.4	+1.5	-0.30	+22	+0.98	+0.74	+0.88	$213	$384
HKFJ5	HBR	67%	84%	73%	98%	98%	97%	97%	96%	94%	94%	94%	65%	92%	88%	86%	90%	83%	90%	79%	87%	84%	84%	80%		
VLYH221		36	27	99	92	44	17	10	4	7	2	4	42	1	14	62	11	53	67	6	40	77	7	9	36	20
VLYE398	**LAWSONS NADAL E398** SV	+71	-7.5	-3.8	-1.7	+5.9	+56	+93	+109	+132	-8	+1.2	-5.8	+66	+12.5	-0.4	-1.4	+1.7	+0.6	+0.35	+0	+0.80	+0.80	+0.90	$186	$330
USA15464043	HBR	64%	88%	76%	98%	98%	97%	97%	97%	95%	96%	95%	65%	93%	91%	91%	91%	87%	91%	82%	84%	83%	83%	77%		
VLYB887		14	96	94	90	85	23	42	68	10	99	81	20	50	4	57	69	3	88	72	99	40	13	12	66	62
VLYP316	**LAWSONS PROPHET P316** PV	+16	+5.2	+4.0	-2.3	+3.3	+58	+93	+112	+70	+18	+1.0	-5.4	+69	+10.4	-3.5	-3.8	+1.3	+3.5	+0.28	+29	+0.66	+0.68	+0.82	$274	$407
USA16295688	HBR	58%	72%	60%	91%	95%	88%	86%	83%	79%	70%	73%	54%	74%	72%	74%	74%	70%	74%	63%	72%	80%	80%	75%		
VLYM527		95	29	39	85	32	16	42	61	90	43	87	29	41	11	98	95	9	17	63	15	15	3	4	1	9
NZE14647010	**MATAURI OUTLIER F031** SV	+70	-3.2	+2.1	-4.6	+6.7	+54	+102	+137	+145	+16	+2.2	-3.1	+70	+0.2	+3.1	+1.9	-0.7	+0.9	+0.08	+14	+0.78	+1.18	+1.28	$131	$288
NZE14647008839	HBR	65%	95%	87%	98%	99%	98%	98%	98%	98%	98%	98%	84%	96%	95%	96%	96%	94%	95%	88%	93%	92%	93%	89%		
NZE14647108860		15	87	59	52	93	32	20	14	4	57	44	86	38	98	4	15	96	82	37	77	36	89	98	95	84
NMMF159	**MILLAH MURRAH DOC F159** PV	+55	-7.0	+3.6	-6.1	+6.9	+58	+108	+148	+129	+28	+2.5	-5.5	+97	+5.0	+1.2	+2.1	+0.3	+0.3	-0.16	+17	+0.96	+1.12	+1.08	$190	$340
NMMD78	HBR	64%	89%	78%	98%	98%	97%	97%	97%	95%	95%	96%	69%	93%	91%	92%	92%	88%	92%	82%	94%	88%	88%	84%		
NHZY275		36	96	44	28	94	16	10	5	11	1	33	27	2	65	22	13	60	92	13	64	73	81	65	61	54
NMMG18	**MILLAH MURRAH HIGHLANDER**	+16	+0.5	-3.9	-3.7	+4.5	+49	+88	+110	+84	+22	+4.5	-3.5	+76	+10.6	-3.3	-1.8	+2.0	-0.1	+0.05	+11	+0.74	+0.88	+1.00	$185	$303
NZE12170004408	HBR	62%	82%	70%	97%	95%	93%	93%	93%	90%	84%	89%	63%	90%	89%	89%	90%	83%	91%	82%	90%	84%	84%	79%		
NMMD85		95	69	95	67	60	54	58	66	76	15	2	80	22	10	98	76	1	96	33	89	28	27	38	66	78
NMMK35	**MILLAH MURRAH KINGDOM K35**	+37	-13.2	-7.6	-2.6	+9.0	+55	+99	+138	+148	+11	+0.8	-5.6	+63	+7.6	+0.1	+0.4	+1.0	-0.6	-0.70	+26	+0.80	+1.26	+1.16	$137	$270
NZE469	HBR	73%	95%	86%	99%	99%	98%	98%	98%	97%	98%	98%	79%	96%	94%	95%	95%	93%	94%	88%	97%	96%	96%	94%		
NMMG41		67	99	99	82	99	28	24	12	3	92	90	24	60	33	45	36	18	99	1	24	40	95	85	94	90
NMMK42	**MILLAH MURRAH KLOONEY K42**	+4	+5.8	+3.5	-6.7	+5.7	+47	+86	+107	+92	+24	+2.1	-6.9	+64	+5.8	-1.3	-3.5	+1.1	+2.5	+0.16	+18	+0.82	+0.92	+1.02	$217	$365
NGMT30	HBR	75%	96%	87%	99%	99%	98%	99%	98%	98%	98%	98%	79%	96%	95%	95%	95%	93%	95%	87%	98%	96%	97%	94%		
NMMH4		99	24	45	21	83	64	62	71	63	7	48	6	57	55	77	93	14	38	47	61	45	37	45	31	34
NMML133	**MILLAH MURRAH LOCH UP L133**	+9	+4.7	+3.5	-6.0	+5.0	+58	+99	+132	+106	+26	+1.9	-1.8	+79	+1.9	-2.3	-4.1	-0.5	+1.7	-0.27	+35	+0.70	+1.06	+1.14	$160	$300
USA17091363	HBR	73%	94%	85%	99%	99%	98%	98%	98%	98%	98%	98%	75%	96%	94%	95%	95%	93%	95%	87%	98%	97%	97%	95%		
NMMH49		99	34	45	30	71	15	24	20	40	3	56	96	17	93	91	96	93	61	7	6	21	71	81	85	79
NJWH194	**MILWILLAH ELEVATOR H194** SV	+49	-9.2	-9.6	-0.7	+8.0	+47	+96	+124	+152	+19	+1.3	-1.6	+50	+3.8	-2.2	+0.9	+0.9	-1.3	-0.38	+43	+0.20	+0.44	+0.86	$71	$199
WDCE11	HBR	61%	74%	65%	92%	92%	90%	90%	90%	85%	80%	84%	61%	86%	85%	85%	86%	80%	87%	77%	79%	87%	86%	80%		
VTMX64		46	98	99	95	99	64	34	34	2	38	78	97	90	79	90	27	23	99	4	2	1	1	7	99	99
NJWH283	**MILWILLAH ELSOM H283** PV	+32	+1.3	-3.6	-2.5	+3.5	+44	+79	+115	+97	+20	+1.8	-1.9	+71	+10.7	-2.1	-2.6	+1.7	+1.2	+0.40	+30	+0.76	+0.82	+1.06	$158	$274
NJWF189	HBR	67%	80%	66%	97%	97%	96%	96%	95%	90%	92%	93%	60%	91%	89%	90%	90%	85%	91%	82%	84%	89%	89%	85%		
NJWE51		75	63	94	83	37	79	81	55	55	24	60	96	35	10	89	86	3	75	77	13	32	16	58	86	89
	Breed Average EBVs	**+47**	**+2.2**	**+2.6**	**-4.8**	**+4.1**	**+50**	**+90**	**+117**	**+100**	**+17**	**+2.1**	**-4.6**	**+66**	**+6.3**	**-0.1**	**-0.3**	**+0.5**	**+2.2**	**+0.19**	**+20**	**+0.84**	**+0.97**	**+1.03**	**+197**	**+339**

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
		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
NJWE158	**MILWILLAH LAD E158 SV**	+40	-2.5	-6.8	-7.7	+8.1	+43	+82	+109	+111	+6	+2.0	-5.5	+45	+9.3	-1.0	-4.5	+1.3	+2.6	+0.19	+12	+0.76	+0.82	+0.72	$162	$291
NZEE230	HBR	57%	82%	73%	95%	97%	96%	96%	96%	92%	95%	92%	62%	91%	90%	90%	90%	85%	91%	80%	86%	79%	79%	72%		
VTMX114		61	85	99	11	99	80	73	68	32	99	52	27	95	18	71	97	9	35	51	85	32	16	1	84	83
CSWP036	**MURDEDUKE BLACK PEARL**	+19	+2.0	+1.2	-8.7	+5.4	+48	+90	+127	+112	+18	+3.3	-4.4	+55	+3.0	-0.2	-1.5	-0.8	+5.9	+0.59	+13	+0.82	+1.16	+1.18	$188	$337
USA17236055	HBR	53%	74%	63%	95%	95%	93%	93%	89%	84%	73%	87%	57%	87%	87%	86%	87%	79%	89%	79%	93%	92%	92%	88%		
CSWL123		92	57	68	6	78	62	51	29	30	39	12	57	82	86	52	71	97	1	91	84	45	87	88	64	56
CSWH211	**MURDEDUKE HUSSAR H211 PV**	+7	+1.5	+2.8	-9.3	+6.5	+63	+124	+163	+170	+13	+3.9	-4.2	+88	+1.2	-1.8	-4.9	+0.4	-0.1	-0.80	+31	+0.54	+0.84	+1.02	$162	$360
VTME343	HBR	65%	83%	74%	97%	96%	95%	95%	95%	91%	90%	93%	65%	90%	89%	89%	90%	84%	91%	82%	95%	95%	95%	93%		
CSWE175		99	61	52	4	92	7	1	1	1	81	5	63	5	95	85	98	53	96	1	12	5	20	45	84	37
CSWK428	**MURDEDUKE KICKING K428 PV**	+31	+9.0	+9.2	-8.2	+1.9	+49	+95	+119	+91	+24	+3.7	-5.3	+67	+1.4	-0.1	-2.3	+0.3	+0.5	-0.10	+44	+0.90	+1.02	+1.20	$186	$345
VTME343	HBR	74%	86%	74%	98%	98%	97%	97%	96%	94%	92%	97%	66%	92%	91%	88%	91%	85%	92%	84%	97%	97%	97%	95%		
CSWE175		76	6	3	8	11	56	36	45	65	7	7	32	48	95	50	82	60	89	17	1	62	62	91	65	50
NURG20	**MURRAY EL GRANDO G20 SV**	+25	-13.2	+2.2	-6.9	+7.8	+67	+113	+157	+142	+13	+3.5	-5.3	+92	+16.0	-5.8	-7.0	+2.1	+2.4	-0.43	+20	+0.90	+0.78	+0.86	$220	$363
USA13058662	HBR	70%	87%	77%	97%	97%	96%	96%	96%	94%	93%	92%	72%	92%	91%	90%	91%	86%	91%	82%	94%	94%	93%	91%		
VTMD113		85	99	58	18	98	3	5	2	5	83	9	32	3	1	99	99	1	41	3	47	62	11	7	28	35
NURM208	**MURRAY GENESIS M208 PV**	+40	+3.1	+5.8	-6.5	+5.2	+53	+101	+130	+107	+19	+3.7	-6.4	+86	+15.5	-0.1	-2.7	+1.7	+0.9	+1.21	+6	+0.98	+1.06	+0.68	$243	$409
SMPG357	HBR	73%	75%	63%	92%	93%	91%	91%	91%	85%	81%	79%	60%	87%	86%	83%	87%	81%	87%	78%	86%	90%	90%	87%		
NURK45		61	48	21	23	74	36	21	24	37	34	7	11	7	1	50	87	3	82	99	97	77	71	1	9	8
NURN70	**MURRAY KODAK N70 PV**	+57	+4.0	+6.0	-7.2	+4.4	+59	+102	+136	+137	+14	+5.1	-6.4	+80	+9.7	-1.6	-2.1	+0.8	+3.9	-0.40	+23	+0.92	+0.88	+0.94	$245	$436
NORK522	HBR	53%	75%	58%	97%	97%	94%	94%	93%	86%	73%	91%	54%	88%	87%	86%	87%	79%	89%	80%	91%	91%	91%	87%		
NURJ53		33	40	19	15	57	14	19	15	7	76	1	11	15	15	82	80	28	12	3	35	66	27	20	8	2
NURM204	**MURRAY PROCEED M204 PV**	+46	-8.0	+6.6	-4.5	+4.5	+61	+109	+139	+123	+20	+3.3	-3.7	+88	+13.8	-4.7	-4.8	+0.6	+6.8	+0.11	+14	+0.96	+0.78	+0.92	$234	$379
USA16956101	HBR	77%	78%	64%	95%	95%	93%	93%	92%	86%	78%	85%	59%	89%	88%	85%	89%	83%	90%	81%	91%	89%	90%	86%		
NURJ43		51	97	15	54	60	9	8	11	16	25	12	76	5	2	99	98	40	1	40	77	73	11	16	15	23
NURP54	**MURRAY TWINHEARTS P54 PV**	+16	-0.1	+3.3	-6.7	+7.4	+74	+128	+170	+161	+22	+2.3	-4.3	+107	+8.3	-1.7	-3.6	+0.6	+3.0	+0.27	+17	+0.88	+1.24	+0.92	$251	$444
USA16350631	HBR	51%	69%	57%	92%	90%	87%	87%	85%	82%	71%	77%	50%	83%	83%	83%	83%	75%	85%	74%	81%	87%	87%	82%		
NURM13		95	72	47	21	97	1	1	1	1	13	40	60	1	26	84	94	40	26	62	65	58	94	16	6	2
SFNL21	**NAMPARA LIBERTY L21 SV**	+59	-5.0	-1.3	-6.5	+8.9	+67	+112	+152	+168	+19	+3.0	-1.6	+84	+7.2	-2.2	-0.9	+1.7	-2.7	-0.60	+19	+0.84	+0.84	+1.00	$140	$303
NZE10322010609	HBR	70%	84%	68%	98%	98%	96%	97%	97%	94%	91%	96%	58%	92%	90%	87%	91%	84%	92%	84%	94%	91%	92%	87%		
SFNH65		30	92	85	23	99	3	5	4	1	33	18	97	9	37	90	60	3	99	1	54	49	20	38	93	78
SKOJ6	**NEWLYN PARK EMPEROR J6 PV**	+11	-10.7	-6.4	-8.0	+8.3	+69	+116	+154	+161	+9	+2.0	-5.3	+87	+7.5	-1.1	-1.5	+1.2	+0.1	-0.57	+27	+1.08	+0.76	+0.80	$189	$346
VTME343	HBR	64%	74%	65%	92%	90%	88%	88%	89%	85%	77%	78%	61%	85%	84%	84%	85%	78%	86%	76%	78%	85%	85%	80%		
NZCE115		98	99	98	9	99	2	3	3	1	97	52	32	6	34	73	71	11	94	1	20	89	9	3	63	49
NZE21095018	**NGAPUTAHI P206 SV**	+81	+10.8	+7.0	-1.5	-0.2	+41	+82	+96	+64	+28	+2.7	-6.3	+60	+7.3	+0.7	+0.0	+1.0	+3.5	+0.61	+21	+0.96	+1.10	+1.10	$240	$380
HIOE7	HBR	55%	74%	64%	92%	95%	92%	90%	88%	83%	72%	87%	59%	78%	77%	79%	78%	74%	77%	67%	82%	73%	73%	71%		
NZE21095112H49		5	2	12	91	2	87	74	88	94	2	26	12	68	36	31	43	18	17	92	42	73	78	70	11	23
USA16981588	**PA FULL POWER 1208 PV**	+63	-5.7	-4.8	-5.7	+3.7	+52	+98	+119	+77	+14	+1.9	-3.1	+68	+12.6	-1.5	+0.5	+0.8	+3.4	+0.80	+25	+1.24	+0.96	+0.70	$223	$328
USA16381311	HBR	76%	93%	81%	99%	98%	98%	98%	98%	97%	97%	98%	71%	95%	94%	94%	94%	91%	94%	85%	98%	98%	97%	90%		
USA16408070		24	94	96	34	41	42	28	46	84	74	56	86	45	4	81	34	28	19	98	27	98	47	1	25	63
	Breed Average EBVs	**+47**	**+2.2**	**+2.6**	**-4.8**	**+4.1**	**+50**	**+90**	**+117**	**+100**	**+17**	**+2.1**	**-4.6**	**+66**	**+6.3**	**-0.1**	**-0.3**	**+0.5**	**+2.2**	**+0.19**	**+20**	**+0.84**	**+0.97**	**+1.03**	**+197**	**+339**

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
		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
USA17585042	**PA RANCH HOUSE 349 PV**	+11	+6.6	+3.1	-5.7	+4.0	+51	+89	+113	+95	+26	+0.0	-2.6	+61	+6.0	-0.2	+2.0	+0.4	+1.8	+0.69	-4	+1.50	+1.40	+0.92	$200	$338
USA16651533	HBR	76%	87%	69%	98%	98%	97%	97%	97%	94%	95%	96%	62%	93%	93%	92%	92%	89%	93%	83%	86%	93%	93%	89%		
USA17193464		98	18	49	34	48	47	53	58	59	3	98	92	66	52	52	14	53	58	95	99	99	99	16	51	56
HKFE27	**PARINGA IRON ORE E27 PV**	+88	+8.2	+1.9	-8.0	+2.0	+37	+71	+94	+90	+15	+2.1	-6.9	+67	+8.3	+0.9	+1.5	+1.5	+1.7	+0.40	+40	+0.86	+0.96	+0.98	$202	$350
VTMA149	HBR	66%	81%	69%	97%	96%	94%	94%	94%	90%	91%	91%	63%	90%	89%	89%	90%	83%	90%	82%	85%	84%	84%	79%		
FAFC1		2	9	61	9	12	94	93	89	67	64	48	6	49	26	27	19	5	61	77	3	54	47	31	48	45
SMPG357	**PATHFINDER GENESIS G357 PV**	+41	+2.5	+5.3	-7.8	+6.7	+62	+109	+147	+140	+26	+4.3	-5.6	+96	+14.0	+0.9	-1.4	+1.4	+0.2	+0.63	+29	+0.86	+1.04	+0.76	$231	$415
VTMB1	HBR	65%	96%	87%	99%	99%	99%	99%	99%	98%	98%	98%	82%	97%	95%	96%	96%	94%	95%	89%	98%	97%	98%	96%		
SMPD245		60	53	26	11	93	8	8	6	5	3	3	24	2	2	27	69	7	93	93	15	54	66	1	18	6
SMPK22	**PATHFINDER KOMPLETE K22 SV**	+73	+11.4	+10.2	-9.7	+0.7	+39	+73	+92	+40	+27	+3.0	-5.8	+49	+6.8	+4.2	+5.5	+0.1	+2.3	+0.45	+28	+0.48	+0.84	+0.68	$235	$359
SMPG357	HBR	73%	91%	74%	99%	98%	98%	98%	98%	96%	96%	97%	69%	94%	93%	93%	93%	92%	93%	85%	96%	96%	96%	94%		
SMPH756		12	1	1	3	4	90	91	92	99	2	18	20	91	42	1	1	72	43	81	19	2	20	1	14	39
SMPM651	**PATHFINDER MASTERPIECE**	+31	+1.1	+4.1	-5.7	+5.5	+59	+106	+137	+142	+20	+3.3	-8.0	+62	+9.7	-2.2	-3.5	+1.4	+2.0	-0.22	+48	+0.96	+1.18	+1.14	$240	$429
VTMG67	HBR	60%	75%	65%	90%	94%	91%	91%	91%	85%	81%	85%	60%	86%	84%	84%	85%	78%	86%	76%	70%	77%	77%	74%		
SMPH66		76	64	38	34	79	13	13	14	5	26	12	1	62	15	90	93	7	52	9	1	73	89	81	11	3
SMPM558	**PATHFINDER MAXIMUS M558 PV**	+25	-2.5	+2.1	-6.9	+6.1	+61	+101	+132	+135	+25	+4.7	-8.4	+56	+9.4	-2.1	-0.5	+0.6	+2.9	-0.27	+48	+0.92	+1.04	+0.88	$238	$413
VTMG67	HBR	75%	80%	68%	96%	96%	95%	94%	95%	89%	89%	92%	62%	90%	88%	86%	89%	85%	89%	80%	77%	78%	78%	74%		
SMPH458		85	85	59	18	88	10	22	21	8	6	2	1	78	17	89	53	40	28	7	1	66	66	9	12	7
SMPN56	**PATHFINDER NUCLEUS N56 SV**	+35	+4.3	+3.2	-4.0	+5.5	+62	+108	+140	+125	+16	+4.2	-6.4	+81	+13.6	+0.8	+0.9	+1.0	+1.7	+0.32	+19	+0.74	+0.80	+0.78	$266	$449
HIOG18	HBR	50%	74%	60%	96%	96%	94%	94%	94%	87%	80%	92%	55%	90%	89%	88%	89%	80%	90%	83%	84%	85%	85%	81%		
SMPL179		70	37	48	62	79	7	9	11	14	58	3	11	13	2	29	27	18	61	68	51	28	13	2	2	1
SMPP41	**PATHFINDER PREMIUM P41 SV**	+45	+1.7	+7.0	-5.1	+4.8	+59	+106	+142	+129	+23	+4.1	-8.3	+57	+4.2	-0.2	+0.1	-0.2	+3.8	+0.16	+25	+0.84	+1.18	+1.20	$250	$438
VTMG67	APR	52%	73%	62%	94%	94%	91%	91%	90%	84%	73%	86%	56%	78%	76%	77%	77%	73%	77%	65%	81%	69%	69%	69%		
SMPM53		53	60	12	44	66	14	12	9	12	9	4	1	77	75	52	41	85	13	47	28	49	89	91	6	2
NZE41-97	**PINEBANK WAIGROUP 41/97 #**	+61	+4.3	-4.8	-4.0	+3.6	+37	+63	+73	+48	+19	+0.8	-3.1	+17	+4.9	+1.4	+0.5	+0.8	+1.1	-0.14	+26	+0.34	+0.94	+1.00	$150	$234
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	37	96	62	39	94	98	99	99	36	90	86	99	66	19	34	28	77	14	25	1	42	38	89	96
NORE11	**RENNYLEA EDMUND E11 PV**	+24	+10.0	+0.8	-7.3	+1.1	+34	+65	+84	+54	+16	+1.9	-7.3	+51	+4.9	+3.4	+1.4	-0.3	+4.3	+0.78	+25	+0.56	+1.00	+1.10	$202	$322
NGMY145	HBR	79%	99%	97%	99%	99%	99%	99%	99%	99%	99%	99%	94%	98%	98%	98%	98%	98%	98%	95%	99%	99%	99%	99%		
VLYY5		86	3	71	15	6	97	97	96	97	58	56	4	89	66	3	20	88	8	97	26	6	57	70	49	67
NORG255	**RENNYLEA G255 PV**	+63	-11.9	-8.1	-3.6	+4.6	+51	+95	+130	+127	+21	+0.8	-3.7	+90	+7.8	-0.3	-3.2	+0.7	+4.7	-0.11	+13	+1.20	+0.94	+0.86	$161	$276
BNAD145	APR	81%	94%	86%	98%	98%	98%	98%	98%	98%	98%	97%	81%	96%	95%	95%	96%	93%	94%	90%	97%	94%	94%	92%		
NORC490		24	99	99	69	62	44	36	24	13	20	90	76	4	30	55	91	34	5	16	83	97	42	7	84	88
NORH708	**RENNYLEA H708 PV**	+96	-4.5	-0.4	+1.2	+4.9	+50	+102	+132	+131	+9	+2.6	-3.9	+72	+13.1	-3.5	-6.4	+1.9	+7.1	+0.71	+26	+0.72	+0.74	+1.00	$232	$385
NORC511	APR	86%	91%	80%	98%	98%	98%	98%	98%	97%	95%	97%	75%	95%	94%	94%	94%	91%	94%	91%	98%	95%	95%	93%		
NORE176		1	91	80	99	68	49	18	20	10	96	29	71	33	3	98	99	2	1	95	23	24	7	38	16	19
NORK835	**RENNYLEA K835 PV**	+18	-3.7	-5.1	-2.0	+6.7	+51	+91	+117	+98	+13	+3.2	-5.3	+56	+8.8	+0.7	-1.1	+0.2	+4.1	-0.13	+15	+0.64	+1.12	+1.10	$202	$328
NORG420	APR	67%	81%	65%	98%	95%	95%	95%	95%	90%	87%	89%	60%	89%	88%	87%	88%	84%	89%	78%	90%	88%	88%	85%		
NORH514		93	89	97	88	93	46	48	50	53	82	14	32	80	21	31	64	66	9	15	76	13	81	70	48	63
	Breed Average EBVs	**+47**	**+2.2**	**+2.6**	**-4.8**	**+4.1**	**+50**	**+90**	**+117**	**+100**	**+17**	**+2.1**	**-4.6**	**+66**	**+6.3**	**-0.1**	**-0.3**	**+0.5**	**+2.2**	**+0.19**	**+20**	**+0.84**	**+0.97**	**+1.03**	**+197**	**+339**

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
		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
NORK522	**RENNYLEA KODAK K522** SV	+46	+10.6	+10.7	-5.4	+1.2	+46	+85	+111	+109	+10	+4.6	-6.5	+57	+4.3	+3.4	+1.8	-0.4	+4.1	+0.36	+7	+0.64	+0.82	+0.98	$212	$393
NORE11	HBR	71%	92%	79%	99%	99%	98%	98%	98%	97%	96%	98%	71%	94%	93%	93%	93%	91%	93%	86%	95%	96%	96%	95%		
NORF810		51	2	1	39	6	69	67	63	35	94	2	10	77	74	3	16	91	9	73	96	13	16	31	36	15
NORL508	**RENNYLEA L508** PV	+75	+2.1	+8.5	-6.4	+2.5	+46	+86	+117	+91	+26	+1.3	-5.6	+58	+6.2	+1.6	-0.7	-0.3	+5.5	+0.56	+19	+0.72	+0.92	+0.92	$222	$366
USA17366506	HBR	55%	94%	80%	99%	99%	98%	98%	98%	98%	97%	98%	73%	95%	94%	94%	95%	92%	94%	86%	98%	97%	97%	95%		
NORH414		10	56	4	24	18	68	62	50	65	3	78	24	75	49	16	57	88	2	89	54	24	37	16	26	33
NORL683	**RENNYLEA L683** PV	+73	+2.3	+0.6	-5.2	+5.3	+55	+94	+119	+105	+5	+1.9	-5.8	+80	+5.9	+0.5	-1.6	+0.8	+2.0	+0.72	+20	+0.74	+0.86	+0.98	$220	$370
NORE11	APR	71%	82%	70%	98%	97%	96%	96%	96%	93%	90%	94%	65%	90%	89%	86%	89%	84%	90%	83%	95%	88%	88%	85%		
NORJ631		12	55	73	42	76	26	40	45	41	99	56	20	14	53	36	72	28	52	96	46	28	23	31	28	29
NORM1078	**RENNYLEA M1078** SV	+75	-2.0	-2.9	-2.3	+3.0	+40	+81	+101	+90	+12	+1.9	-5.1	+59	+10.9	-1.2	-4.6	+0.8	+8.0	+0.90	+11	+0.96	+1.04	+1.20	$216	$340
NORH708	APR	55%	73%	61%	97%	96%	95%	95%	94%	92%	85%	92%	55%	90%	89%	89%	90%	81%	91%	82%	94%	87%	87%	84%		
NORF563		10	83	92	85	27	89	77	81	67	89	56	37	70	9	75	98	28	1	99	89	73	66	91	32	54
NORP987	**RENNYLEA P987** PV	+60	+9.4	+8.6	-8.7	+1.9	+52	+99	+130	+121	+14	+1.2	-4.5	+78	+4.9	+4.4	+3.1	-1.9	+8.3	+0.99	+9	+0.94	+0.92	+1.06	$237	$423
NORM763	APR	52%	72%	55%	95%	95%	93%	92%	92%	85%	72%	89%	49%	78%	77%	78%	78%	72%	77%	61%	93%	61%	63%	60%		
NORM1184		28	4	4	6	11	42	24	23	19	77	81	54	18	66	1	6	99	1	99	94	70	37	58	13	4
NORQ1081	**RENNYLEA Q1081** PV	+82	+1.5	+3.8	-4.0	+3.3	+50	+90	+112	+94	+11	+3.0	-6.0	+51	+11.8	+0.7	-0.7	+0.7	+6.3	+0.62	+13	+0.84	+0.98	+0.94	$262	$412
NORH708	APR	57%	70%	58%	90%	90%	86%	83%	83%	80%	70%	81%	52%	75%	72%	73%	73%	69%	74%	64%	81%	69%	73%	69%		
NORL841		4	61	42	62	32	52	51	61	60	90	18	17	89	6	31	57	34	1	92	83	49	52	20	3	7
NORQ213	**RENNYLEA Q213** PV	+29	+10.5	+7.4	-7.9	+1.1	+65	+123	+153	+109	+28	+0.4	-8.6	+102	+10.4	-0.7	-1.1	+0.3	+3.7	+0.58	+27	+0.56	+0.76	+0.84	$326	$522
NORK907	APR	53%	72%	57%	96%	96%	94%	93%	93%	84%	71%	90%	51%	78%	77%	78%	78%	73%	77%	62%	92%	69%	70%	67%		
NORL110		79	2	9	10	6	4	1	3	34	2	96	1	1	11	64	64	60	14	90	21	6	9	5	1	1
APBK11	**SHACORRAHDALU KINETIC K11**	+20	+11.1	+11.1	-9.5	+0.8	+49	+91	+107	+97	+10	+4.9	-8.0	+61	+9.4	+2.4	+0.8	+0.9	+1.6	+0.67	+7	+0.94	+1.06	+0.96	$245	$427
VTMB1	HBR	51%	73%	64%	91%	90%	87%	84%	83%	81%	77%	78%	58%	76%	68%	71%	71%	66%	71%	64%	79%	72%	70%	69%		
APBF2		91	1	1	3	4	54	48	72	55	94	1	1	66	17	8	29	23	64	94	96	70	71	25	8	4
NZE19507013	**STORTH OAKS JACK J7** SV	+14	+7.1	+10.1	-5.3	+4.7	+60	+113	+154	+143	+20	+3.3	-2.2	+84	+8.3	-0.3	-2.9	-0.3	+2.4	+0.20	+24	+1.00	+1.00	+0.92	$192	$383
VTME343	HBR	69%	86%	74%	98%	98%	97%	97%	97%	94%	93%	96%	68%	93%	92%	91%	92%	89%	93%	84%	96%	92%	93%	89%		
NZE19507111G183		97	15	1	41	64	11	5	3	4	28	12	95	8	26	55	89	88	41	53	32	79	57	16	59	21
VSNG34	**STRATHEWEN BERKLEY G34** PV	+40	+8.3	+7.9	-7.4	+3.9	+57	+103	+140	+143	+18	+2.2	-6.8	+83	+6.2	+1.0	+0.2	+0.5	+1.3	-0.15	+17	+1.12	+1.24	+1.10	$225	$428
VTMB1	HBR	70%	79%	69%	94%	93%	91%	91%	91%	88%	86%	83%	65%	89%	88%	88%	89%	84%	90%	82%	86%	88%	88%	84%		
VSNE22		61	8	7	14	46	20	16	11	4	45	44	7	10	49	25	40	47	72	13	67	92	94	70	22	4
USA17236055	**SYDGEN BLACK PEARL 2006** PV	+9	+4.4	+8.4	-7.5	+3.2	+51	+85	+122	+84	+22	+1.7	-3.1	+75	+8.7	+0.2	-0.5	+0.6	+2.2	+0.05	+14	+1.06	+1.20	+1.14	$212	$346
USA15354674	HBR	76%	97%	91%	99%	99%	99%	99%	99%	98%	98%	99%	87%	97%	97%	97%	97%	96%	96%	91%	98%	99%	99%	97%		
USA16214508		99	36	5	13	30	45	67	39	76	14	64	86	26	22	42	53	40	46	33	78	87	91	81	36	49
VTMA149	**TE MANIA ADA A149** PV	+39	-6.9	-4.2	-3.6	+6.5	+52	+95	+127	+168	+10	+1.8	-2.4	+81	+3.9	-3.4	-2.1	+1.5	-0.6	-0.69	+25	+0.88	+0.76	+0.78	$95	$247
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	95	95	69	92	42	36	29	1	95	60	93	12	78	98	80	5	99	1	27	58	9	2	99	94
VTMK52	**TE MANIA KALIBROOK K52** PV	+45	+8.2	+4.8	-2.7	+1.5	+51	+105	+127	+92	+29	+1.8	-6.8	+68	+1.8	+1.1	+2.2	-1.1	+5.8	+1.47	+15	+1.10	+1.08	+1.08	$258	$427
USA16295688	HBR	71%	74%	65%	93%	93%	89%	89%	88%	84%	74%	83%	62%	85%	84%	82%	85%	80%	86%	75%	83%	88%	88%	84%		
VTMH423		53	9	31	81	8	44	14	30	64	1	60	7	44	93	24	12	99	1	99	75	91	74	65	4	4
	Breed Average EBVs	+47	+2.2	+2.6	-4.8	+4.1	+50	+90	+117	+100	+17	+2.1	-4.6	+66	+6.3	-0.1	-0.3	+0.5	+2.2	+0.19	+20	+0.84	+0.97	+1.03	+197	+339

Angus Australia - ImmuneDEX Research Breeding Values

Ident Sire Dam	Name Reg.	ImmuneDEX	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
		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
VTMK138	**TE MANIA KIRBY K138 PV**	+18	+0.4	+6.5	-1.7	+4.3	+50	+90	+119	+92	+20	+2.5	-9.4	+67	+5.3	+1.7	+3.0	-1.9	+8.6	+1.21	+9	+0.82	+0.76	+0.98	$267	$427
USA16295688	HBR	68%	93%	81%	99%	99%	98%	98%	98%	97%	97%	97%	77%	97%	95%	94%	96%	93%	95%	85%	98%	98%	98%	97%		
VTMH17		93	69	15	90	55	49	52	45	64	30	33	1	49	61	15	7	99	1	99	94	45	9	31	2	4
VTMM13	**TE MANIA MAGNATE M13 PV**	+32	-2.0	+7.7	-12.2	+4.3	+51	+91	+113	+79	+31	+2.3	-8.1	+59	+5.4	-1.9	-1.4	+0.6	+1.7	+0.27	+29	+1.02	+1.26	+1.20	$226	$360
HIOH9	HBR	57%	84%	70%	98%	98%	97%	97%	97%	95%	92%	96%	62%	95%	92%	89%	95%	85%	92%	79%	97%	91%	92%	87%		
VTMK200		75	83	8	1	55	43	47	60	82	1	40	1	71	60	87	69	40	61	62	15	82	95	91	21	38
VTMN424	**TE MANIA NEBO N424 PV**	+51	+10.8	-1.4	-7.2	+3.8	+52	+102	+127	+103	+33	+4.5	-4.0	+57	+7.7	-1.1	-3.7	+0.4	+4.5	-0.01	+50	+0.72	+0.76	+1.02	$212	$364
VTMJ89	HBR	51%	87%	76%	98%	98%	98%	98%	98%	96%	92%	96%	56%	93%	93%	89%	93%	84%	92%	80%	97%	92%	92%	88%		
VTMJ214		43	2	86	15	44	42	19	29	45	1	2	68	77	31	73	94	53	6	26	1	24	9	45	36	34
VTMN1387	**TE MANIA NEON N1387 SV**	+19	-0.7	+3.4	-6.5	+3.6	+49	+89	+112	+90	+20	+1.9	-7.5	+52	+2.9	-0.6	-1.3	-2.0	+9.7	+0.44	+29	+0.80	+0.78	+1.06	$232	$375
VTMK138	HBR	50%	79%	61%	98%	98%	96%	96%	93%	86%	72%	93%	54%	82%	84%	82%	84%	77%	83%	65%	95%	77%	77%	74%		
VTML452		92	76	46	23	39	53	53	62	67	25	56	3	88	87	62	67	99	1	80	15	40	11	58	17	26
VTMN181	**TE MANIA NERO N181 PV**	+74	-13.5	-5.0	-3.1	+5.3	+61	+107	+142	+115	+30	+5.3	-5.9	+74	+6.4	-4.5	-5.0	+0.3	+6.2	+0.19	+31	+0.84	+0.98	+1.22	$207	$328
VTML135	HBR	52%	83%	70%	98%	97%	97%	97%	97%	94%	87%	92%	52%	92%	91%	87%	91%	81%	90%	75%	93%	84%	84%	81%		
VTML1251		11	99	97	76	76	10	11	9	26	1	1	18	28	47	99	99	60	1	51	11	49	52	93	42	63
VTMP888	**TE MANIA PESO P888 PV**	+53	+9.3	+4.7	-5.9	+1.4	+56	+117	+143	+109	+28	+2.3	-6.3	+92	+2.8	-0.5	+0.7	+0.1	+1.8	+0.54	+36	+0.84	+1.04	+0.96	$249	$431
VTMK226	HBR	56%	81%	66%	98%	97%	97%	97%	96%	92%	82%	90%	54%	85%	87%	84%	86%	79%	84%	63%	94%	73%	73%	72%		
VTMH423		39	5	32	31	7	25	3	8	35	1	40	12	3	87	60	31	72	58	88	6	49	66	25	7	3
DBLL292	**TOPBOS LEADING EDGE L292 PV**	+26	+1.7	+6.4	-5.9	+6.9	+73	+129	+168	+157	+22	+1.4	-5.3	+87	+3.8	-2.3	-4.9	+0.4	+1.1	+0.00	+26	+0.96	+0.76	+0.78	$234	$431
USA16295688	HBR	74%	86%	70%	97%	98%	97%	97%	97%	94%	94%	96%	65%	92%	90%	88%	91%	85%	91%	84%	95%	91%	90%	87%		
VSNF04		84	60	16	31	94	1	1	1	2	15	75	32	6	79	91	98	53	77	27	23	73	9	2	15	3
ELYH1	**TRIO DOCKLANDS H1 PV**	+7	+8.9	+3.1	-8.9	+2.1	+42	+83	+113	+73	+29	+2.9	-6.9	+70	-1.1	+2.7	+4.8	-0.9	+1.4	-0.46	+18	+0.82	+1.26	+1.10	$193	$334
QHED62	HBR	64%	75%	63%	91%	94%	93%	92%	92%	89%	89%	87%	61%	88%	85%	85%	86%	83%	87%	77%	82%	83%	83%	78%		
NKLD15		99	6	49	5	13	83	72	58	88	1	21	6	38	99	6	2	98	69	2	61	45	95	70	59	58
NZE17691009	**TURIHAUA CRUMP E5 SV**	+77	-3.0	-2.0	-5.8	+3.7	+29	+57	+82	+95	+14	+1.0	-10.4	+15	-0.4	+4.4	+2.7	-0.1	+1.2	+0.30	+29	+0.66	+1.20	+1.20	$129	$256
NZE17691003Y167	HBR	63%	91%	82%	97%	98%	98%	98%	98%	97%	97%	97%	87%	95%	94%	94%	94%	93%	94%	85%	81%	84%	84%	78%		
NZE17691195Q263		8	87	89	33	41	99	99	97	58	72	87	1	99	99	1	8	81	75	66	16	15	91	91	96	93
NXTL096	**TWYNAM L096 SV**	+58	+8.8	+9.3	-8.2	+2.7	+58	+111	+159	+134	+28	+3.5	-8.7	+107	+2.5	+0.7	+0.8	-0.7	+3.0	-0.21	+11	+0.62	+0.86	+0.90	$255	$464
NXTH111	APR	66%	69%	51%	93%	93%	89%	89%	88%	82%	68%	83%	49%	85%	83%	80%	85%	78%	85%	85%	75%	74%	75%	69%		
NXTJ078		31	6	2	8	21	18	6	2	8	2	9	1	1	89	31	29	96	26	10	90	11	23	12	5	1
BSCF73	**WAITARA PIO FEDERAL F73 SV**	+50	+5.3	+5.8	-4.4	+1.6	+55	+103	+134	+89	+27	+2.6	-3.8	+90	+5.1	-0.6	-0.5	+0.3	+1.3	+0.33	+15	+1.40	+1.24	+0.92	$220	$367
USA15688392	HBR	76%	88%	73%	98%	98%	97%	97%	97%	96%	96%	96%	68%	94%	93%	93%	94%	89%	93%	86%	96%	95%	95%	92%		
BSCZ66		44	28	21	56	9	26	17	18	69	3	29	73	4	64	62	53	60	72	69	72	99	94	16	28	32
QKBP29	**WARRAWEE PATROL P29 PV**	+58	+10.3	+11.6	-13.3	+2.3	+55	+106	+142	+124	+21	+2.5	-6.8	+103	+8.5	+3.4	+2.0	-0.1	+1.8	+0.49	+27	+0.80	+1.26	+0.96	$246	$446
SMPG357	HBR	64%	71%	59%	93%	90%	87%	86%	85%	82%	73%	80%	56%	80%	80%	81%	81%	75%	82%	71%	79%	77%	77%	73%		
QKBM01		31	2	1	1	16	29	11	9	15	19	33	7	1	24	3	14	81	58	84	21	40	95	25	8	2
NWPG188	**WATTLETOP FRANKLIN G188 SV**	+49	+4.6	+7.2	-4.7	+2.2	+64	+109	+141	+119	+25	+3.7	-3.3	+87	+1.3	-1.4	-1.7	-0.3	+0.8	-1.13	+33	+1.00	+0.94	+0.92	$191	$358
USA15462648	HBR	65%	94%	83%	99%	99%	98%	98%	98%	97%	97%	98%	72%	95%	94%	94%	94%	91%	93%	86%	97%	95%	95%	92%		
NWPE295		46	34	11	51	15	5	8	10	20	6	7	83	6	95	79	74	88	84	1	8	79	42	16	60	39
	Breed Average EBVs	**+47**	**+2.2**	**+2.6**	**-4.8**	**+4.1**	**+50**	**+90**	**+117**	**+100**	**+17**	**+2.1**	**-4.6**	**+66**	**+6.3**	**-0.1**	**-0.3**	**+0.5**	**+2.2**	**+0.19**	**+20**	**+0.84**	**+0.97**	**+1.03**	**+197**	**+339**

Angus Australia - ImmuneDEX Research Breeding Values

Ident / Sire / Dam	Name / Reg.	ImmuneDEX	Calv-Ease		Birth		Growth			Maternal		Fert		Carcase						Feed	Temp	Structural			Selection Index	
		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
NWPL4	**WATTLETOP LOCK L4 SV**	+34	-3.4	-0.9	-8.1	+6.2	+59	+108	+156	+150	+29	+1.7	-2.3	+101	+7.4	+1.4	+1.7	+0.3	+1.1	+0.10	+16	+1.10	+0.82	+0.78	$172	$330
USA15738589	HBR	71%	77%	65%	96%	96%	94%	95%	95%	90%	86%	93%	61%	90%	89%	88%	89%	85%	90%	80%	91%	84%	84%	79%		
NWPJ70		71	88	83	9	89	14	9	3	3	1	64	94	1	35	19	17	60	77	39	70	91	16	2	78	62
NWPE111	**WATTLETOP SITZ 458N E111 SV**	+17	+3.6	+6.6	-4.6	+2.8	+47	+86	+118	+88	+28	+1.9	-1.8	+76	+5.4	-3.9	-3.5	+1.0	+3.4	-0.51	+33	+0.88	+0.88	+1.04	$188	$315
USA14474596	HBR	67%	88%	76%	97%	97%	96%	97%	97%	95%	96%	95%	71%	93%	91%	92%	92%	88%	92%	83%	93%	87%	87%	81%		
NWPC36		94	43	15	52	23	65	62	47	70	2	56	96	21	60	99	93	18	19	2	9	58	27	51	63	71
CWDJ17	**WEATHERLY JAMES J17 SV**	+36	-2.4	-4.6	-4.2	+6.4	+49	+85	+110	+110	+3	+1.7	-5.3	+65	+10.0	+1.5	+2.3	+1.1	+3.2	+0.07	+14	+0.86	+1.20	+1.00	$214	$351
BNAD145	HBR	74%	75%	66%	93%	92%	90%	90%	91%	87%	84%	82%	65%	89%	88%	88%	88%	84%	90%	82%	83%	87%	86%	80%		
CWDF14		68	84	96	59	91	54	66	66	33	99	64	32	54	13	17	11	14	22	35	79	54	91	38	34	45
	Breed Average EBVs	**+47**	**+2.2**	**+2.6**	**-4.8**	**+4.1**	**+50**	**+90**	**+117**	**+100**	**+17**	**+2.1**	**-4.6**	**+66**	**+6.3**	**-0.1**	**-0.3**	**+0.5**	**+2.2**	**+0.19**	**+20**	**+0.84**	**+0.97**	**+1.03**	**+197**	**+339**

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