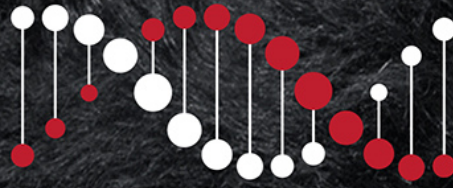


# TACE



TransTasman Angus Cattle Evaluation

## ANGUS ImmuneDEX

## RESEARCH BREEDING VALUES

MARCH 2024

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## 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. carcass 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.

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## 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

Angus Australia gratefully acknowledges the ASBP co-operator herd owners for allowing access to animals for testing. Contributions of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) are also acknowledged, and in particular, Dr Brad Hine, Dr Aaron Ingham, Dominic Niemeyer, Amy Bell, Dr Sonja Dominik, Dr Toni Reverter-Gomez, Dr Laercio Porto Neto and Dr Ian Colditz. Assistance provided by Bob Dent in the initial methodology development work is also gratefully acknowledged.

Meat and Livestock Australia (MLA) and the Australian Lot Feeders Association (ALFA) are acknowledged for co-funding projects related to the development and validation of the immune competence phenotyping methodology. MLA is further acknowledged for co-funding the Angus Sire Benchmarking Program (ASBP)

## 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.

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# Angus Australia - ImmuneDEX Research Breeding Values

Date: February 28, 2024

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Ident	Name		Calv-Ease		Birth		Growth			Maternal			Fert			Carcase				Feed	Temp	Structural		Selection Index		
Sire Dam	Reg.	ImmuneDEX 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
<b>NXOL172</b> NXOF43 NXOJ432	<b>AJC L172</b> <sup>SV</sup> APR	+46 69% 51	+6.4 76% 15	+8.3 61% 5	-6.1 94% 24	+3.2 96% 32	+60 94% 13	+102 94% 22	+138 94% 14	+131 87% 12	+13 87% 81	+2.4 83% 39	-4.9 55% 43	+72 91% 36	+6.9 89% 44	-0.7 84% 64	+0.2 89% 40	+0.3 91% 60	+1.1 83% 80	-1.03 83% 1	+22 85% 45	+1.40 85% 99	+1.28 85% 96	+1.22 81% 93	\$219 32	\$407 11
<b>DGJG10</b> VTMB1 DGJZ15	<b>ALLOURA GET CRACKING G10</b> <sup>SV</sup> HBR	+53 69% 39	+8.5 94% 5	+7.4 84% 10	-3.0 99% 72	+2.5 99% 20	+44 98% 81	+75 98% 91	+88 98% 96	+82 98% 79	+12 97% 85	-0.3 97% 99	-8.5 76% 2	+47 95% 93	+14.3 94% 2	+1.7 94% 15	+0.5 94% 35	+0.9 91% 24	+5.3 93% 3	+0.44 88% 74	+6 97% 95	+0.50 96% 3	+1.00 96% 56	+0.92 93% 18	\$276 2	\$435 3
<b>DGJL94</b> USA15832750 DGJH24	<b>ALLOURA LOCK STOCK &amp;</b> HBR	+44 64% 55	+6.2 78% 16	+4.2 68% 38	-3.9 93% 58	+2.9 95% 26	+55 94% 29	+93 94% 46	+124 94% 39	+121 89% 20	+14 84% 72	+1.1 87% 84	-4.1 52% 63	+64 88% 61	+0.7 84% 96	+1.6 80% 16	-1.7 85% 74	+0.2 76% 66	+2.3 87% 48	-0.39 77% 5	+26 92% 29	+0.86 84% 53	+0.88 82% 27	+0.94 77% 22	\$189 66	\$354 47
<b>DGJQ30</b> WWEL3 DGJK117	<b>ALLOURA QUINELLA Q30</b> <sup>SV</sup> HBR	+13 51% 97	+2.7 72% 47	+2.2 65% 60	+0.5 94% 98	+3.0 92% 28	+53 90% 36	+98 86% 31	+118 86% 51	+120 83% 21	+15 77% 63	+3.2 81% 17	-7.8 53% 4	+74 78% 32	+13.5 74% 3	+0.5 75% 36	+0.7 76% 31	+1.1 68% 16	+4.3 78% 10	+0.51 69% 80	+14 88% 75	+1.02 70% 82	+1.12 70% 81	+1.18 70% 88	\$271 3	\$450 2
<b>WJMF96</b> WJMB59 WJMD25	<b>ARDCAIRNIE F96</b> <sup>SV</sup> HBR	+21 55% 90	+4.4 89% 31	+0.0 78% 79	-4.4 98% 50	+3.1 98% 30	+49 97% 61	+88 97% 62	+121 97% 44	+89 95% 69	+14 95% 71	+1.8 96% 62	-3.8 64% 70	+66 92% 53	+6.8 91% 46	-1.5 91% 80	-1.6 91% 72	+1.1 86% 16	+1.0 92% 82	-0.09 81% 19	+27 89% 25	+0.46 87% 2	+0.84 87% 19	+0.94 83% 22	\$196 59	\$329 66
<b>WJMJ27</b> USA15354674 WJMG96	<b>ARDCAIRNIE J27</b> <sup>SV</sup> HBR	+16 74% 95	+6.7 82% 13	+8.8 72% 4	-7.6 96% 10	+3.0 97% 28	+55 96% 28	+95 96% 39	+131 96% 25	+128 93% 14	+8 92% 97	+0.3 93% 96	-3.8 65% 70	+94 93% 3	+1.9 92% 93	+2.4 91% 8	+1.2 92% 24	-0.1 88% 81	+0.9 93% 84	+0.20 86% 48	-1 86% 99	+0.94 87% 69	+1.12 87% 81	+1.14 82% 81	\$186 69	\$364 39
<b>NAQA241</b> USA2928 NAQW38	<b>ARDROSSAN EQUATOR A241</b> <sup>PV</sup> HBR	+49 80% 46	-2.0 99% 81	+2.7 98% 55	-4.4 99% 50	+4.1 99% 53	+50 99% 56	+91 99% 51	+122 99% 43	+108 99% 38	+20 99% 24	+3.2 99% 17	-7.8 95% 4	+87 98% 8	+8.5 98% 27	-2.1 98% 89	-0.2 98% 47	+1.4 98% 7	+1.2 98% 77	+0.63 96% 87	+25 99% 32	+0.48 99% 3	+0.86 99% 23	+1.00 99% 39	\$223 29	\$375 29
<b>NAQN329</b> NAQH318 NAQK30	<b>ARDROSSAN HOLBROOK N329</b> HBR	+22 54% 89	-2.8 76% 85	-0.9 65% 84	-3.0 96% 72	+2.9 94% 26	+48 95% 62	+88 94% 60	+112 93% 64	+82 88% 78	+22 83% 17	+2.8 85% 26	-7.1 56% 8	+71 90% 40	+5.3 88% 64	+2.5 88% 8	+2.5 89% 11	-0.9 80% 98	+4.1 90% 13	+1.04 82% 99	+14 88% 76	+0.82 81% 45	+1.02 87% 61	+0.94 83% 22	\$211 42	\$339 59
<b>NAQH255</b> NORE11 NAQD17	<b>ARDROSSAN HONOUR H255</b> <sup>PV</sup> HBR	+27 81% 82	-1.2 96% 77	-1.1 89% 85	-2.8 99% 75	+4.5 99% 62	+43 98% 82	+75 98% 91	+98 98% 89	+96 98% 58	+13 98% 83	+2.2 98% 48	-5.9 84% 22	+60 96% 71	+5.8 96% 58	+1.0 96% 26	-1.1 96% 64	+0.6 95% 41	+2.1 96% 53	+1.01 92% 98	+8 98% 92	+0.44 97% 2	+1.02 97% 61	+1.24 96% 95	\$164 86	\$291 86
<b>QQFH147</b> VTME343 NMMF123	<b>ASCOT HALLMARK H147</b> <sup>PV</sup> HBR	+47 72% 50	-3.6 95% 88	+2.1 87% 61	-5.0 98% 40	+7.3 99% 97	+60 98% 13	+110 98% 9	+152 98% 4	+132 97% 11	+15 98% 64	+3.7 98% 9	-5.6 78% 27	+80 96% 17	+2.0 95% 99	+0.6 95% 34	-0.2 95% 47	-0.8 94% 97	+3.1 95% 29	+0.29 89% 59	+17 97% 63	+0.46 95% 2	+0.82 95% 16	+1.04 93% 53	\$195 60	\$358 43
<b>HIOE7</b> VTMB219 BVVB32	<b>AYRVALE BARTEL E7</b> <sup>PV</sup> HBR	+41 85% 60	+8.6 99% 5	+9.5 97% 2	-4.5 99% 48	+1.8 99% 11	+49 99% 59	+86 99% 67	+112 99% 64	+72 99% 89	+26 99% 4	+2.5 99% 36	-8.2 93% 3	+64 98% 60	+7.7 98% 35	-0.7 98% 64	+0.4 98% 36	+1.3 98% 10	+3.4 98% 23	+0.32 96% 62	+4 99% 97	+1.04 99% 85	+1.00 99% 56	+1.14 99% 81	\$288 1	\$445 2
<b>HIOG11</b> SEWD138 HIOE2	<b>AYRVALE GENETIC G11</b> <sup>PV</sup> HBR	+24 67% 87	-4.9 87% 92	-12.9 78% 99	-5.0 98% 40	+5.1 98% 75	+65 97% 4	+117 97% 3	+162 97% 2	+139 96% 7	+18 95% 40	+1.6 94% 69	-5.7 61% 25	+83 93% 12	+0.7 90% 96	-3.8 90% 99	-2.7 91% 86	-0.1 86% 81	+2.1 92% 53	-0.24 82% 10	+43 89% 2	+1.06 88% 87	+1.04 88% 66	+1.08 83% 65	\$195 60	\$346 53
<b>NBBN47</b> HIOG18 NBBL83	<b>BALD BLAIR NELSON N47</b> <sup>PV</sup> HBR	+25 50% 85	+2.8 78% 46	-2.2 67% 90	-4.9 95% 42	+4.3 95% 58	+55 93% 31	+103 93% 19	+149 93% 5	+154 90% 3	+15 84% 64	+0.9 90% 88	-4.3 61% 58	+82 88% 13	+4.2 87% 77	-1.2 87% 75	-1.0 88% 62	+0.9 80% 24	+0.6 89% 89	-0.22 82% 10	+29 90% 18	+0.98 85% 76	+1.14 85% 84	+1.20 82% 91	\$176 78	\$354 47
<b>Breed Average EBVs</b>		<b>+48</b>	<b>+1.7</b>	<b>+2.8</b>	<b>-4.4</b>	<b>+4.0</b>	<b>+51</b>	<b>+92</b>	<b>+118</b>	<b>+101</b>	<b>+17</b>	<b>+2.2</b>	<b>-4.6</b>	<b>+67</b>	<b>+6.6</b>	<b>+0.0</b>	<b>-0.3</b>	<b>+0.5</b>	<b>+2.4</b>	<b>+0.23</b>	<b>+21</b>	<b>+0.84</b>	<b>+0.97</b>	<b>+1.03</b>	<b>+202</b>	<b>+345</b>

# Angus Australia - ImmuneDEX Research Breeding Values

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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	
<b>ECMK63</b> NZE14647008839 ECMH45	<b>BANNABY REALITY K63</b> <sup>PV</sup> HBR	+74 68% 11	+3.6 80% 38	+0.6 70% 75	-2.8 96% 75	+3.8 97% 46	+44 94% 79	+77 94% 88	+100 94% 85	+103 90% 46	+13 84% 81	+2.0 90% 54	-0.4 62% 99	+51 91% 89	+5.2 89% 65	-1.3 90% 77	-1.6 89% 72	+0.4 85% 54	+1.3 91% 75	-0.20 85% 11	+28 91% 21	+0.50 89% 3	+1.00 89% 56	+1.22 85% 93	\$114 99	\$237 97	
<b>VONG272</b> VOND412 VONC368	<b>BANQUET GARRETT G272</b> <sup>SV</sup> HBR	+57 64% 33	+1.1 79% 61	+4.2 65% 38	-1.4 94% 89	+6.1 96% 89	+54 94% 34	+97 94% 33	+141 95% 11	+147 90% 4	+19 88% 31	+4.3 91% 4	-2.2 58% 92	+56 90% 80	+1.3 88% 95	-2.2 88% 90	-3.6 89% 93	+0.1 80% 72	+2.8 87% 35	-0.80 81% 1	+23 86% 38	+0.54 87% 5	+1.04 87% 66	+1.10 82% 71	\$141 94	\$307 79	
<b>HCAG013</b> VTMA217 VTMZ618	<b>BOONAROO GRAVITY G013</b> <sup>PV</sup> HBR	+87 70% 2	+4.6 90% 29	+3.8 83% 43	-5.3 98% 36	+3.6 98% 41	+51 97% 50	+87 97% 64	+114 97% 60	+103 94% 47	+23 95% 11	+3.8 97% 8	-6.0 72% 20	+56 93% 80	+4.6 92% 72	-2.8 92% 95	-3.2 92% 90	+1.3 87% 10	+2.9 91% 33	-0.74 85% 1	+21 94% 46	+0.50 94% 3	+0.92 94% 36	+1.06 91% 59	\$218 33	\$372 31	
<b>NGMN418</b> WWEL3 NGML471	<b>BOOROOMOOKA JACKPOT N418</b> HBR	+24 50% 87	+2.5 70% 49	+7.0 65% 12	-8.7 95% 5	+5.3 96% 78	+61 95% 11	+108 95% 11	+134 95% 19	+128 92% 14	+8 85% 98	+3.4 94% 13	-6.5 61% 13	+79 88% 18	+9.4 86% 19	-0.4 86% 57	+0.1 87% 42	+0.9 79% 24	+2.4 88% 45	+0.32 79% 62	+30 95% 17	+1.32 92% 99	+1.08 92% 74	+1.04 85% 53	\$260 5	\$446 2	
<b>NGMP96</b> WWEL3 NGMM566	<b>BOOROOMOOKA PARAGON P96</b> HBR	+15 52% 96	-3.7 81% 88	+2.0 72% 62	-7.5 98% 11	+3.9 98% 48	+61 97% 11	+118 97% 3	+160 97% 2	+123 93% 18	+30 86% 1	+3.4 96% 13	-8.1 61% 3	+109 92% 1	+13.6 90% 90	-2.7 90% 94	-1.5 90% 71	+1.8 82% 3	+1.8 92% 61	+0.87 85% 96	+34 97% 9	+0.86 95% 53	+1.00 95% 56	+1.14 92% 81	\$286 1	\$459 1	
<b>BOWK2</b> VTME343 NAQZ31	<b>BOWMAN AUSTRALIA K2</b> <sup>PV</sup> HBR	+43 74% 57	+6.9 79% 12	+3.4 75% 47	-6.5 94% 20	+3.5 91% 39	+48 91% 62	+97 90% 34	+121 90% 45	+94 87% 61	+22 84% 14	+4.9 83% 2	-8.2 68% 3	+68 88% 48	+8.0 88% 32	+0.0 87% 47	-1.6 88% 72	+1.0 82% 20	+1.2 90% 77	-0.63 83% 1	+12 87% 83	+0.84 84% 49	+1.02 84% 61	+0.94 81% 22	\$233 19	\$402 13	
<b>SRKK306</b> NJWG279 TFAD58	<b>BOWMONT KING K306</b> <sup>PV</sup> HBR	+31 69% 77	-1.6 87% 79	-9.8 78% 99	-4.8 97% 43	+4.4 98% 60	+49 97% 58	+78 97% 87	+103 97% 82	+86 94% 73	+2 93% 99	-0.4 96% 99	-5.1 68% 38	+64 93% 59	+15.3 93% 1	-0.3 92% 55	-2.0 93% 78	+1.6 90% 4	+4.7 93% 7	+0.40 86% 70	+26 96% 29	+0.54 91% 5	+0.90 91% 31	+0.76 88% 2	\$236 17	\$347 52	
<b>AMQH64</b> VTME343 AMQF27	<b>BROOKLANA HI TOWER H64</b> <sup>PV</sup> HBR	+87 71% 2	-4.8 79% 91	-3.2 70% 93	-0.3 94% 95	+5.1 92% 75	+53 91% 39	+102 91% 22	+141 91% 11	+124 87% 17	+16 81% 57	+2.0 83% 54	-2.3 64% 92	+84 88% 11	+5.1 88% 67	+2.2 87% 10	+1.3 88% 23	+0.4 81% 54	+1.2 90% 77	+0.52 83% 80	+26 85% 27	+0.60 84% 9	+0.94 84% 41	+1.06 79% 59	\$163 86	\$298 84	
<b>GTNP9</b> HKFJ5 GTNK26	<b>CHILTERN PARK PICASSO P9</b> <sup>PV</sup> HBR	+37 53% 67	+7.7 78% 8	+7.4 68% 10	-3.1 98% 71	+1.4 98% 8	+57 94% 22	+106 95% 13	+136 94% 17	+96 89% 59	+23 81% 12	+3.7 91% 9	-7.7 61% 4	+94 88% 3	+7.0 86% 43	-0.9 86% 69	+0.8 86% 30	-0.4 79% 90	+4.2 88% 11	+0.63 77% 87	+30 87% 17	+0.72 89% 25	+0.68 89% 3	+0.86 83% 8	\$279 2	\$459 1	
<b>QMUM13</b> USA16295688 QMUG1	<b>CLUNES CROSSING DUSTY M13</b> HBR	+35 50% 70	-0.3 85% 71	+3.4 81% 47	-7.0 99% 15	+5.3 99% 78	+65 98% 5	+102 98% 22	+119 98% 48	+62 97% 95	+15 97% 65	+0.9 98% 88	-6.7 75% 11	+73 95% 34	+13.0 94% 4	-2.4 94% 92	-3.3 94% 91	+1.2 91% 12	+1.7 94% 64	+0.09 87% 36	+10 98% 89	+0.88 97% 58	+0.86 97% 23	+1.00 96% 39	\$291 1	\$416 7	
<b>NBHK330</b> NJWG279 NBHH381	<b>CLUNIE RANGE KALUHA K330</b> <sup>PV</sup> HBR	+3 71% 99	-1.5 84% 79	-12.8 74% 99	-4.9 97% 42	+5.5 97% 81	+54 96% 33	+96 96% 37	+126 96% 34	+98 92% 54	+15 89% 64	+1.5 96% 73	-7.1 66% 8	+91 92% 4	+9.5 91% 19	+0.1 91% 45	-1.2 92% 65	+1.2 89% 12	+3.0 93% 31	+0.22 86% 51	+5 94% 96	+0.70 87% 21	+1.00 88% 56	+1.18 85% 88	\$242 13	\$371 32	
<b>NBHL348</b> NZE14647008839 AHWJ81	<b>CLUNIE RANGE LEGEND L348</b> <sup>PV</sup> HBR	+18 68% 93	-6.6 95% 95	+4.6 86% 34	-7.8 99% 9	+5.8 99% 86	+57 98% 20	+102 98% 21	+125 98% 35	+154 97% 3	+2 97% 99	+3.0 98% 21	-7.2 77% 7	+62 95% 67	+0.2 94% 98	+3.6 94% 3	+1.1 94% 25	-0.8 92% 97	+2.5 94% 42	+0.03 86% 29	+26 97% 28	+0.48 97% 3	+0.80 97% 13	+1.24 96% 95	\$165 85	\$342 57	
<b>WDCH249</b> USA14885809 WDCE9	<b>COONAMBLE HECTOR H249</b> <sup>SV</sup> HBR	+33 70% 73	+0.5 95% 66	+0.1 87% 78	-8.3 99% 6	+4.5 99% 62	+45 98% 78	+79 98% 85	+100 98% 86	+89 97% 69	+6 98% 99	+1.3 98% 79	-4.8 77% 45	+45 96% 95	+9.3 95% 20	+4.0 95% 2	+4.4 95% 3	+0.6 93% 41	+0.1 95% 95	-0.52 88% 2	+39 98% 4	+0.42 96% 1	+0.50 96% 1	+0.78 93% 3	\$183 72	\$311 77	
<b>Breed Average EBVs</b>		<b>+48</b>	<b>+1.7</b>	<b>+2.8</b>	<b>-4.4</b>	<b>+4.0</b>	<b>+51</b>	<b>+92</b>	<b>+118</b>	<b>+101</b>	<b>+17</b>	<b>+2.2</b>	<b>-4.6</b>	<b>+67</b>	<b>+6.6</b>	<b>+0.0</b>	<b>-0.3</b>	<b>+0.5</b>	<b>+2.4</b>	<b>+0.23</b>	<b>+21</b>	<b>+0.84</b>	<b>+0.97</b>	<b>+1.03</b>	<b>+202</b>	<b>+345</b>	

# Angus Australia - ImmuneDEX Research Breeding Values

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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
<b>WDCJ266</b> BNAD145 WHHA61	<b>COONAMBLE JUNIOR J266</b> <sup>PV</sup> HBR	+70 76% 15	-7.1	-4.2	+0.1	+5.7	+56	+100	+138	+134	+16	+1.9	-5.0	+95	+10.2	-5.0	-4.9	+1.5	+2.9	-0.24	+20	+0.92	+0.78	+1.06	\$194	\$336
<b>WDCK314</b> NAQA241 WDCD94	<b>COONAMBLE KEVIN K314</b> <sup>PV</sup> HBR	+99 65% 1	-1.2	+3.9	-2.3	+4.5	+51	+100	+131	+113	+24	+4.4	-7.1	+81	+7.3	+0.2	+0.7	+0.1	+1.6	+0.61	+43	+0.50	+1.10	+1.24	\$206	\$367
<b>BHRH744</b> BNAD145 BHRD202	<b>DUNOON HIGHPOINT H744</b> <sup>SV</sup> HBR	+38 74% 65	-11.8	-14.1	-3.8	+6.9	+56	+97	+129	+132	+17	+2.8	-5.4	+88	+5.6	-1.9	-1.4	+1.5	+1.0	-0.52	+19	+0.68	+0.86	+1.08	\$157	\$276
<b>USA16198796</b> USA14686137 USA15452880	<b>EF COMPLEMENT 8088</b> <sup>PV</sup> HBR	+15 85% 96	+4.6	+7.1	-4.7	+2.9	+52	+97	+129	+97	+22	+1.4	-7.6	+75	+7.9	+1.2	+0.5	+0.9	+1.5	+0.58	+20	+0.92	+1.28	+1.16	\$258	\$424
<b>WWEQ15</b> VTMG67 WWEN17	<b>ESSLEMONT GARTH Q15</b> <sup>PV</sup> HBR	+36 52% 69	-3.8	+2.2	-8.4	+5.7	+63	+112	+153	+145	+28	+2.4	-6.5	+69	+6.1	-3.7	-3.9	+0.4	+4.1	-0.47	+45	+0.92	+1.14	+1.06	\$230	\$403
<b>WWEL3</b> HIOG18 WWEJ8	<b>ESSLEMONT LOTTO L3</b> <sup>PV</sup> HBR	+8 77% 99	-6.3	-1.7	-5.4	+4.5	+60	+110	+139	+132	+18	+3.6	-8.8	+92	+14.6	-0.4	+0.3	+1.7	+3.2	+0.39	+15	+1.12	+1.02	+1.16	\$280	\$451
<b>WWEQ24</b> WWEN12 WWEN7	<b>ESSLEMONT QUOKKA Q24</b> <sup>PV</sup> HBR	+53 52% 39	+4.7	+0.3	-4.3	+1.7	+42	+82	+98	+48	+22	+4.1	-6.1	+65	+16.9	+1.4	-0.1	+2.2	+2.1	+1.24	+27	+0.74	+0.88	+0.96	\$264	\$383
<b>WWE21S6</b> NGMN418 WWEN7	<b>ESSLEMONT SEAN S6</b> <sup>PV</sup> HBR	+27 54% 82	+6.0	+7.7	-5.4	+2.9	+55	+97	+114	+86	+17	+4.4	-5.3	+78	+17.4	+2.5	+0.6	+1.4	+3.6	+1.17	+24	+1.04	+1.16	+1.08	\$286	\$447
<b>USA16295688</b> USA13009379 USA15129456	<b>G A R PROPHET</b> <sup>SV</sup> HBR	+43 88% 57	+3.2	+4.9	-0.6	+3.7	+67	+107	+133	+83	+23	+0.7	-4.8	+72	+3.9	-0.7	-1.2	-0.7	+4.7	+0.68	+26	+1.02	+0.82	+0.92	\$270	\$413
<b>USA17328461</b> USA16205036 USA16431932	<b>G A R SURE FIRE</b> <sup>SV</sup> HBR	+96 79% 1	+6.5	+2.2	-3.0	+2.2	+50	+91	+112	+80	+19	+4.1	-7.6	+64	+8.4	-0.5	-0.6	+0.9	+3.7	-0.10	+25	+1.16	+0.94	+0.58	\$264	\$418
<b>QBGH221</b> BNAD145 QBGD80	<b>GLENOCH HINMAN H221</b> <sup>SV</sup> HBR	+69 70% 16	+5.4	-1.6	-3.1	+2.9	+52	+92	+123	+113	+20	+0.8	-3.9	+84	+7.6	-1.8	-5.0	+0.9	+5.3	-0.40	+8	+0.88	+0.80	+1.04	\$219	\$369
<b>DKKM41</b> NORH708 DKKJ51	<b>HARDHAT H708 MAIMURU J51</b> APR	+86 50% 2	-0.8	+3.8	-1.7	+2.3	+44	+91	+119	+97	+12	+1.4	-3.8	+62	+2.4	+1.0	-2.1	-0.4	+6.4	+0.09	+21	+1.04	+1.02	+1.10	\$195	\$331
<b>NHZF1023</b> VTMB1 NHZB723	<b>HAZELDEAN F1023</b> <sup>SV</sup> APR	+41 68% 60	+3.8	+0.9	-2.5	+3.2	+39	+75	+88	+70	+13	+3.6	-5.2	+48	+8.0	+2.5	-0.2	+0.2	+5.9	+1.27	+12	+0.48	+1.00	+1.04	\$212	\$337
<b>Breed Average EBVs</b>		<b>+48</b>	<b>+1.7</b>	<b>+2.8</b>	<b>-4.4</b>	<b>+4.0</b>	<b>+51</b>	<b>+92</b>	<b>+118</b>	<b>+101</b>	<b>+17</b>	<b>+2.2</b>	<b>-4.6</b>	<b>+67</b>	<b>+6.6</b>	<b>+0.0</b>	<b>-0.3</b>	<b>+0.5</b>	<b>+2.4</b>	<b>+0.23</b>	<b>+21</b>	<b>+0.84</b>	<b>+0.97</b>	<b>+1.03</b>	<b>+202</b>	<b>+345</b>

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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	
<b>NHZM586</b> NHZJ140 NHZH356	<b>HAZELDEAN M586</b> <sup>SV</sup> APR	+71 51% 14	+6.6 87% 14	+9.1 71% 3	-8.3 98% 6	+2.5 98% 20	+49 97% 60	+86 97% 68	+114 97% 61	+102 95% 48	+19 93% 35	+4.0 96% 6	-12.0 70% 1	+68 94% 48	+5.1 92% 67	+0.1 93% 45	+0.2 86% 40	+0.0 93% 76	+4.4 87% 94	+0.79 96% 4	+39 94% 3	+0.48 94% 36	+0.92 94% 85	+1.16 90% 85	\$274 2	\$464 1	
<b>NHZQ319</b> NHZM586 NHZL1175	<b>HAZELDEAN Q319</b> <sup>PV</sup> APR	+70 51% 15	+4.0 76% 34	+9.3 60% 2	-8.8 97% 4	+2.8 97% 24	+55 95% 31	+104 94% 16	+137 89% 15	+136 85% 9	+17 78% 47	+3.2 94% 17	-12.0 82% 1	+77 82% 23	+5.1 75% 67	+1.9 76% 13	+0.4 77% 36	-0.6 67% 94	+4.4 79% 9	+0.09 70% 36	+32 94% 12	+0.88 69% 58	+1.10 65% 78	+1.08 61% 65	\$274 2	\$489 1	
<b>VICG43</b> VICD2 VICC4	<b>IRELANDS GALAXY G43</b> <sup>SV</sup> HBR	+20 69% 91	-4.3 90% 90	-10.5 77% 99	-2.1 98% 83	+6.1 98% 89	+43 97% 83	+72 97% 94	+100 97% 86	+101 95% 49	+14 96% 74	+1.2 97% 81	-3.6 73% 74	+48 94% 93	+4.9 93% 69	+0.1 93% 45	-0.9 94% 60	+0.9 93% 24	-0.4 94% 98	+0.49 87% 78	+0 87% 99	+0.70 87% 21	+0.98 87% 51	+1.04 81% 53	\$103 99	\$202 99	
<b>KILK18</b> USA16417285 USA15107929	<b>KILLAIN ALASKA K18</b> <sup>PV</sup> HBR	+26 53% 84	-7.7 74% 96	-4.7 62% 96	-0.3 90% 95	+6.9 89% 95	+66 89% 4	+121 88% 2	+164 89% 1	+175 85% 1	+15 82% 70	+3.9 82% 7	-2.2 51% 92	+86 85% 9	+6.6 85% 48	-2.9 85% 95	-4.9 86% 98	+1.1 82% 16	-1.1 87% 99	-0.60 77% 2	+37 80% 6	+1.16 77% 95	+0.86 77% 23	+1.00 66% 39	\$129 97	\$294 85	
<b>BLAP130</b> SRK306 BLAK113	<b>KNOWLA PACKER P130</b> <sup>PV</sup> HBR	+16 51% 95	+1.9 73% 54	+0.2 63% 78	-2.8 93% 75	+4.5 91% 62	+54 89% 32	+100 89% 26	+131 89% 25	+113 85% 31	+12 78% 87	+1.0 85% 86	-6.1 54% 19	+76 85% 25	+8.0 84% 32	+0.4 84% 38	-0.9 85% 60	+0.8 77% 29	+2.0 77% 56	+0.10 77% 37	+29 84% 19	+0.86 78% 53	+1.24 78% 94	+0.96 74% 27	\$230 22	\$389 20	
<b>BLAP91</b> HIOG18 BLAL06	<b>KNOWLA PEPPER P91</b> <sup>PV</sup> HBR	+22 53% 89	+4.6 78% 29	+2.2 69% 60	-5.8 95% 28	+3.7 95% 43	+60 93% 13	+115 92% 4	+143 93% 10	+160 88% 2	+10 80% 94	+1.6 90% 69	-8.2 61% 3	+67 89% 51	+8.6 88% 26	+1.5 88% 18	-1.3 89% 67	+1.1 80% 16	+2.5 90% 42	+0.37 82% 67	-2 90% 99	+0.96 89% 73	+1.08 90% 74	+0.98 87% 33	\$260 5	\$475 1	
<b>VLYN131</b> USA16295688 VLYL710	<b>LAWSONS CHARLIE N131</b> <sup>SV</sup> HBR	+56 56% 35	-3.7 79% 88	-1.2 72% 86	-3.9 95% 58	+5.4 96% 80	+72 95% 1	+127 94% 1	+158 92% 2	+125 88% 16	+20 84% 27	+2.9 91% 24	-4.4 65% 55	+79 87% 19	+5.6 86% 61	-1.8 86% 85	-1.7 87% 74	+0.0 79% 76	+1.0 88% 82	+0.35 80% 65	+32 94% 12	+0.88 92% 58	+0.74 92% 7	+0.88 88% 11	\$229 23	\$388 21	
<b>VLYL483</b> HKFJ5 VLYH221	<b>LAWSONS LINKEDIN L483</b> <sup>SV</sup> HBR	+55 67% 36	+4.6 87% 29	-6.2 77% 98	-1.2 98% 91	+4.0 98% 50	+57 97% 22	+108 97% 11	+151 97% 4	+138 95% 7	+26 94% 4	+4.0 94% 6	-4.1 67% 63	+103 92% 1	+9.2 89% 21	-1.0 88% 71	+2.0 91% 15	+0.3 84% 60	+1.8 91% 61	-0.18 82% 12	+21 88% 46	+1.00 85% 79	+0.80 85% 13	+0.86 81% 8	\$206 48	\$378 27	
<b>VLYP316</b> USA16295688 VLYM527	<b>LAWSONS PROPHET P316</b> <sup>PV</sup> HBR	+16 58% 95	+5.8 77% 19	+5.7 69% 22	-2.3 93% 81	+3.3 96% 34	+57 94% 22	+88 93% 62	+104 89% 80	+60 85% 95	+17 79% 52	+0.3 90% 96	-3.9 58% 67	+68 81% 47	+11.3 80% 9	-3.9 80% 99	-4.0 80% 95	+1.7 75% 3	+3.8 82% 16	+0.13 71% 40	+29 93% 19	+0.62 88% 11	+0.72 88% 5	+0.86 84% 8	\$275 2	\$398 15	
<b>NMMD78</b> USA14237157 NMMY119	<b>MILLAH MURRAH EQUATOR D78</b> HBR	+53 68% 39	-1.3 96% 78	+6.2 89% 18	-9.1 99% 4	+5.0 99% 73	+62 98% 9	+110 98% 8	+157 98% 3	+181 97% 1	+18 98% 39	+2.1 98% 50	-4.2 80% 60	+89 96% 6	+2.0 95% 92	-1.9 96% 86	-3.6 96% 93	+1.0 94% 20	+0.1 95% 95	-1.00 89% 1	+22 98% 43	+0.84 95% 49	+0.96 95% 46	+1.06 92% 59	\$158 89	\$354 47	
<b>NMMH250</b> NMME78 NMME120	<b>MILLAH MURRAH HERCULES</b> HBR	+69 62% 16	-3.6 86% 88	+3.1 73% 51	-2.9 98% 74	+6.0 98% 88	+42 97% 86	+75 97% 91	+106 97% 77	+93 94% 64	+12 94% 84	+2.5 95% 36	-4.7 65% 48	+59 92% 73	+3.1 91% 86	-1.4 90% 79	-0.5 91% 53	+0.4 87% 54	+2.4 92% 45	+0.16 84% 43	+17 91% 65	+0.92 89% 66	+1.16 89% 87	+1.08 84% 65	\$153 91	\$271 92	
<b>NMMK35</b> NZE469 NMMG41	<b>MILLAH MURRAH KINGDOM K35</b> HBR	+37 73% 67	-11.9 96% 99	-7.0 89% 99	-2.0 99% 84	+8.8 99% 99	+54 98% 34	+99 98% 29	+137 98% 16	+148 98% 4	+12 98% 85	+0.8 98% 90	-5.0 80% 40	+62 96% 66	+7.7 95% 35	+0.0 95% 47	+0.1 95% 42	+1.1 93% 16	-1.1 95% 99	-0.76 89% 1	+26 98% 28	+0.82 96% 45	+1.26 96% 95	+1.18 94% 88	\$129 97	\$263 94	
<b>NMMK42</b> NGMT30 NMMH4	<b>MILLAH MURRAH KLOONEY K42</b> HBR	+4 75% 99	+4.1 96% 34	+1.9 89% 63	-6.1 99% 24	+5.6 99% 83	+47 98% 68	+86 99% 68	+107 98% 75	+90 98% 67	+23 98% 11	+2.2 98% 47	-6.2 82% 17	+64 96% 60	+6.5 95% 49	-1.2 96% 75	-3.1 96% 90	+1.3 94% 10	+1.9 95% 59	+0.00 89% 26	+18 98% 60	+0.82 97% 45	+0.90 97% 31	+1.06 95% 59	\$210 44	\$350 50	
<b>Breed Average EBVs</b>		<b>+48</b>	<b>+1.7</b>	<b>+2.8</b>	<b>-4.4</b>	<b>+4.0</b>	<b>+51</b>	<b>+92</b>	<b>+118</b>	<b>+101</b>	<b>+17</b>	<b>+2.2</b>	<b>-4.6</b>	<b>+67</b>	<b>+6.6</b>	<b>+0.0</b>	<b>-0.3</b>	<b>+0.5</b>	<b>+2.4</b>	<b>+0.23</b>	<b>+21</b>	<b>+0.84</b>	<b>+0.97</b>	<b>+1.03</b>	<b>+202</b>	<b>+345</b>	

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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			
<b>NMML133</b> USA17091363 NMMH49	<b>MILLAH MURRAH LOCH UP L133</b> HBR	+9 73% 99	+4.5	+4.2	-5.5	+4.8	+58	+100	+131	+100	+26	+2.1	-1.6	+80	+1.6	-2.2	-4.2	-0.6	+1.8	-0.15	+32	+0.70	+1.08	+1.16	\$163	\$300			
<b>NJWH194</b> WDCE11 VTMX64	<b>MILWILLAH ELEVATOR H194<sup>SV</sup></b> HBR	+49 61% 46	-7.0	-6.5	-0.9	+8.2	+50	+102	+137	+162	+19	+2.0	+1.3	+56	+4.2	-2.6	+0.5	+0.9	-1.1	-0.30	+41	+0.20	+0.46	+0.88	\$65	\$201			
<b>NJWH283</b> NJWF189 NJWE51	<b>MILWILLAH ELSOM H283<sup>PV</sup></b> HBR	+32 67% 75	+1.1	-5.7	-2.3	+3.9	+47	+83	+122	+106	+21	+1.8	-1.6	+75	+9.5	-2.5	-2.7	+1.6	+1.5	+0.39	+20	+0.76	+0.84	+1.04	\$159	\$279			
<b>CSWH211</b> VTME343 CSWE175	<b>MURDEDUKE HUSSAR H211<sup>PV</sup></b> HBR	+7 65% 99	+1.2	+4.7	-8.8	+6.0	+60	+117	+153	+166	+13	+4.0	-5.2	+82	+1.9	-2.0	-5.4	+0.8	-0.6	-0.70	+31	+0.52	+0.86	+1.02	\$159	\$358			
<b>CSWK428</b> VTME343 CSWE175	<b>MURDEDUKE KICKING K428<sup>PV</sup></b> HBR	+31 74% 77	+7.6	+8.4	-7.7	+1.9	+48	+93	+115	+86	+24	+3.4	-5.7	+67	+2.2	-0.4	-2.9	+0.4	+0.7	-0.03	+42	+0.88	+1.02	+1.20	\$191	\$345			
<b>NURM208</b> SMPG357 NURK45	<b>MURRAY GENESIS M208<sup>PV</sup></b> HBR	+39 73% 64	+0.9	+5.9	-5.8	+4.7	+50	+96	+128	+107	+21	+3.8	-6.2	+82	+16.5	-0.3	-2.4	+2.1	+0.9	+1.38	+5	+0.94	+1.04	+0.66	\$236	\$396			
<b>NURN70</b> NORK522 NURJ53	<b>MURRAY KODAK N70<sup>PV</sup></b> HBR	+57 53% 33	+1.9	+4.7	-6.7	+4.0	+56	+102	+134	+139	+15	+5.2	-6.3	+79	+9.2	-1.2	-1.5	+0.9	+3.7	-0.32	+14	+0.96	+0.90	+0.92	\$233	\$421			
<b>NURM204</b> USA16956101 NURJ43	<b>MURRAY PROCEED M204<sup>PV</sup></b> HBR	+46 77% 51	-7.7	+7.2	-4.0	+4.3	+61	+106	+141	+133	+19	+2.2	-3.2	+90	+13.5	-4.7	-5.7	+0.8	+6.7	+0.10	+22	+0.96	+0.76	+0.90	\$226	\$375			
<b>NURP54</b> USA16350631 NURM13	<b>MURRAY TWINHEARTS P54<sup>PV</sup></b> HBR	+16 51% 95	-0.8	+3.6	-6.0	+6.5	+69	+125	+166	+157	+24	+1.9	-4.2	+104	+8.3	-2.2	-3.9	+1.0	+3.0	+0.17	+17	+0.88	+1.26	+0.90	\$245	\$433			
<b>SFNL21</b> NZE10322010609 SFNH65	<b>NAMPARA LIBERTY L21<sup>SV</sup></b> HBR	+58 70% 31	-6.3	-3.6	-6.5	+8.7	+66	+111	+149	+160	+19	+2.9	-0.4	+79	+8.3	-1.9	-0.6	+1.8	-2.5	-0.64	+24	+0.86	+0.86	+0.98	\$135	\$283			
<b>SKOJ6</b> VTME343 NZCE115	<b>NEWLYN PARK EMPEROR J6<sup>PV</sup></b> HBR	+12 64% 98	-8.1	-5.2	-7.3	+7.4	+65	+112	+143	+160	+10	+1.4	-5.0	+80	+7.7	-1.1	-1.1	+1.3	+0.3	-0.68	+16	+1.08	+0.80	+0.78	\$187	\$348			
<b>NZE21095018</b> HIOE7 NZE21095112H49	<b>NGAPUTAH I P206<sup>SV</sup></b> HBR	+81 55% 5	+9.5	+5.1	-1.4	+0.2	+41	+84	+97	+69	+28	+2.6	-7.3	+52	+6.3	-0.4	-2.8	+1.2	+4.3	+0.21	+16	+0.96	+1.06	+1.14	\$244	\$388			
<b>USA16981588</b> USA16381311 USA16408070	<b>PA FULL POWER 1208<sup>PV</sup></b> HBR	+63 76% 24	-5.6	-4.6	-4.9	+3.8	+52	+99	+120	+74	+13	+2.1	-2.4	+70	+13.0	-1.8	+0.2	+1.1	+3.2	+0.92	+20	+1.24	+0.98	+0.68	\$224	\$326			
<b>Breed Average EBVs</b>		<b>+48</b>	<b>+1.7</b>	<b>+2.8</b>	<b>-4.4</b>	<b>+4.0</b>	<b>+51</b>	<b>+92</b>	<b>+118</b>	<b>+101</b>	<b>+17</b>	<b>+2.2</b>	<b>-4.6</b>	<b>+67</b>	<b>+6.6</b>	<b>+0.0</b>	<b>-0.3</b>	<b>+0.5</b>	<b>+2.4</b>	<b>+0.23</b>	<b>+21</b>	<b>+0.84</b>	<b>+0.97</b>	<b>+1.03</b>	<b>+202</b>	<b>+345</b>			



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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	
<b>HKFE27</b> VTMA149 FAFC1	<b>PARINGA IRON ORE E27</b> <sup>PV</sup> HBR	+88 66% 2	+6.9	+0.5	-6.8	+2.1	+35	+67	+90	+96	+12	+1.9	-7.3	+66	+6.9	+1.6	+2.5	+1.2	+1.7	+0.33	+31	+0.86	+0.94	+0.96	\$187	\$337	
<b>SMPG357</b> VTMB1 SMPD245	<b>PATHFINDER GENESIS G357</b> <sup>PV</sup> HBR	+41 65% 60	+0.2	+4.2	-7.3	+6.7	+61	+108	+147	+139	+26	+4.4	-5.9	+94	+13.5	+0.5	-0.8	+1.4	+0.0	+0.66	+28	+0.86	+1.06	+0.78	\$226	\$406	
<b>SMPK22</b> SMPG357 SMPH756	<b>PATHFINDER COMPLETE K22</b> <sup>SV</sup> HBR	+73 73% 12	+10.5	+9.2	-9.1	+0.8	+40	+73	+94	+44	+28	+3.0	-5.6	+51	+6.4	+3.6	+5.4	+0.3	+2.1	+0.51	+26	+0.50	+0.86	+0.66	\$233	\$357	
<b>SMPM651</b> VTMG67 SMPH66	<b>PATHFINDER MASTERPIECE</b> HBR	+31 60% 77	+1.8	+4.6	-5.6	+5.3	+58	+106	+133	+140	+20	+3.7	-7.7	+55	+9.4	-1.8	-3.8	+1.6	+1.5	-0.27	+34	+0.96	+1.22	+1.16	\$234	\$424	
<b>SMPM558</b> VTMG67 SMPH458	<b>PATHFINDER MAXIMUS M558</b> <sup>PV</sup> HBR	+25 75% 85	-2.3	+2.7	-6.6	+6.0	+60	+100	+130	+140	+21	+4.7	-8.6	+53	+11.1	-2.5	-2.3	+0.9	+3.5	-0.35	+49	+0.94	+1.06	+0.86	\$242	\$423	
<b>SMPN56</b> HIOG18 SMPL179	<b>PATHFINDER NUCLEUS N56</b> <sup>SV</sup> HBR	+34 50% 72	+3.5	+2.8	-3.3	+5.4	+60	+107	+139	+134	+16	+4.6	-7.3	+77	+13.2	+0.6	+0.6	+1.1	+1.5	+0.35	+9	+0.72	+0.80	+0.82	\$257	\$448	
<b>NZE41-97</b> NZE53195 NZE63988	<b>PINEBANK WAIGROUP 41/97</b> <sup>#</sup> HBR	+61 69% 27	+4.0	-3.7	-3.6	+3.5	+37	+64	+76	+51	+18	+1.0	-3.7	+17	+5.2	+1.1	+0.2	+0.9	+1.1	-0.07	+32	+0.36	+0.94	+1.02	\$156	\$245	
<b>NORE11</b> NGMY145 VLYY5	<b>RENNYLEA EDMUND E11</b> <sup>PV</sup> HBR	+24 79% 87	+8.8	+1.2	-6.9	+1.2	+34	+64	+84	+53	+16	+1.9	-7.6	+51	+4.0	+3.5	+1.5	-0.1	+3.9	+0.77	+23	+0.54	+1.02	+1.12	\$204	\$324	
<b>NORG255</b> BNAD145 NORC490	<b>RENNYLEA G255</b> <sup>PV</sup> APR	+63 81% 24	-11.3	-5.7	-3.0	+4.6	+50	+94	+128	+125	+21	+0.7	-3.1	+88	+7.2	-0.6	-3.8	+0.7	+5.0	-0.03	+10	+1.14	+0.90	+0.84	\$158	\$272	
<b>NORH708</b> NORC511 NORE176	<b>RENNYLEA H708</b> <sup>PV</sup> APR	+96 86% 1	-7.1	+2.6	+1.2	+4.7	+48	+102	+130	+129	+12	+2.5	-3.5	+73	+12.5	-3.8	-6.4	+2.2	+7.1	+0.68	+20	+0.72	+0.70	+0.92	\$227	\$373	
<b>NORK163</b> NORH106 NORE176	<b>RENNYLEA K163</b> <sup>PV</sup> APR	+29 80% 80	+4.6	-8.4	-3.8	+2.5	+40	+73	+94	+65	+10	+0.7	-4.4	+61	+18.4	-0.1	-1.0	+2.6	+2.4	+0.14	+17	+0.66	+0.68	+1.00	\$230	\$336	
<b>NORK835</b> NORG420 NORH514	<b>RENNYLEA K835</b> <sup>PV</sup> APR	+18 67% 93	-4.3	-4.5	-2.0	+6.3	+47	+87	+112	+94	+12	+3.1	-4.5	+55	+10.0	+1.0	-1.2	+0.4	+4.2	-0.21	+11	+0.62	+1.10	+1.12	\$190	\$309	
<b>NORK522</b> NORE11 NORF810	<b>RENNYLEA KODAK K522</b> <sup>SV</sup> HBR	+47 71% 50	+8.8	+9.0	-4.9	+1.3	+45	+83	+109	+110	+10	+4.7	-6.8	+51	+3.2	+3.0	+1.4	-0.3	+3.9	+0.34	+7	+0.62	+0.82	+0.96	\$205	\$384	
<b>Breed Average EBVs</b>		<b>+48</b>	<b>+1.7</b>	<b>+2.8</b>	<b>-4.4</b>	<b>+4.0</b>	<b>+51</b>	<b>+92</b>	<b>+118</b>	<b>+101</b>	<b>+17</b>	<b>+2.2</b>	<b>-4.6</b>	<b>+67</b>	<b>+6.6</b>	<b>+0.0</b>	<b>-0.3</b>	<b>+0.5</b>	<b>+2.4</b>	<b>+0.23</b>	<b>+21</b>	<b>+0.84</b>	<b>+0.97</b>	<b>+1.03</b>	<b>+202</b>	<b>+345</b>	

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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	
<b>NORL508</b> USA17366506 NORH414	<b>RENNYLEA L508<sup>PV</sup></b> HBR	+75 55% 10	+0.2 84% 68	+8.3 78% 5	-5.9 99% 27	+2.6 99% 21	+45 98% 75	+85 98% 54	+117 98% 67	+91 98% 4	+26 98% 76	+1.4 79% 9	-6.9 96% 81	+56 95% 65	+1.2 95% 22	+0.0 95% 43	-0.1 93% 81	+5.1 95% 4	+0.81 89% 94	+16 99% 69	+0.68 98% 18	+0.84 98% 19	+0.88 97% 11	\$228 23	\$373 30		
<b>NORM1078</b> NORH708 NORF563	<b>RENNYLEA M1078<sup>SV</sup></b> APR	+75 55% 10	-5.6 78% 93	-0.1 68% 80	-1.8 97% 86	+3.3 96% 34	+41 95% 87	+83 95% 75	+103 95% 82	+101 93% 49	+11 89% 90	+1.9 93% 58	-4.7 64% 48	+59 91% 73	+10.3 90% 13	-1.8 90% 85	-5.2 91% 99	+1.0 83% 20	+7.8 92% 1	+0.71 84% 91	+10 94% 87	+0.94 91% 69	+1.02 92% 61	+1.14 89% 81	\$202 53	\$326 68	
<b>NORP987</b> NORM763 NORM1184	<b>RENNYLEA P987<sup>PV</sup></b> APR	+60 52% 28	+10.3 74% 1	+9.7 64% 2	-7.9 97% 8	+1.3 97% 7	+49 96% 57	+96 95% 36	+121 95% 44	+122 92% 19	+8 85% 97	+0.4 92% 95	-2.7 60% 88	+71 89% 38	+5.7 88% 59	+3.4 87% 3	+2.3 88% 12	-1.0 80% 98	+7.7 90% 1	+0.97 80% 98	+6 95% 95	+0.86 91% 53	+0.92 91% 36	+1.06 86% 59	\$225 26	\$406 11	
<b>NORQ1081</b> NORH708 NORL841	<b>RENNYLEA Q1081<sup>PV</sup></b> APR	+82 57% 4	-1.7 76% 80	+5.4 66% 25	-3.7 92% 62	+3.8 93% 46	+50 92% 52	+89 89% 59	+112 86% 65	+98 86% 55	+11 79% 90	+3.3 87% 15	-5.9 57% 22	+48 81% 93	+10.4 79% 13	+0.3 79% 40	-1.1 80% 64	+0.8 74% 29	+6.3 81% 1	+0.75 71% 92	+13 89% 81	+0.86 77% 53	+0.92 79% 36	+0.84 74% 6	\$250 8	\$396 16	
<b>NORQ213</b> NORK907 NORL110	<b>RENNYLEA Q213<sup>PV</sup></b> APR	+28 53% 81	+9.5 78% 2	+6.8 67% 13	-7.1 97% 14	+1.1 97% 6	+65 97% 4	+119 96% 3	+149 95% 5	+93 92% 63	+24 84% 7	+0.7 94% 92	-10.0 57% 1	+102 89% 1	+8.7 85% 25	+0.6 86% 34	+0.1 87% 42	+0.2 79% 66	+3.1 88% 28	+0.72 79% 91	+27 96% 23	+0.56 92% 6	+0.72 92% 5	+0.84 88% 6	\$340 1	\$528 1	
<b>NORR992</b> NORN542 NORM1034	<b>RENNYLEA R992<sup>PV</sup></b> APR	+32 50% 75	+4.8 67% 27	+6.9 59% 13	+2.3 95% 99	+1.3 95% 7	+44 92% 80	+84 92% 74	+115 88% 59	+82 85% 78	+26 78% 4	+1.8 90% 62	-5.6 50% 27	+69 79% 44	+10.9 79% 10	+1.7 79% 15	+1.9 80% 16	-0.1 73% 81	+6.1 81% 2	+1.20 66% 99	+27 90% 24	+0.58 74% 7	+0.78 75% 11	+0.84 72% 6	\$252 8	\$399 14	
<b>USA16396573</b> USA0035 USA15688516	<b>S A V CAMARO 9272<sup>SV</sup></b> HBR	+35 66% 70	+4.0 86% 34	+0.8 72% 73	-6.7 97% 18	+3.6 97% 41	+48 96% 62	+78 95% 86	+99 96% 87	+97 92% 55	+9 94% 96	+1.3 91% 79	-6.6 62% 12	+45 93% 96	+0.6 91% 97	-0.5 91% 59	-2.4 91% 83	+0.9 84% 24	+1.6 93% 67	+1.09 84% 99	+20 86% 51	+1.14 86% 94	+0.82 86% 16	+0.82 78% 5	\$186 69	\$328 67	
<b>APBK11</b> VTMB1 APBF2	<b>SHACORRAHDALU KINETIC K11</b> HBR	+20 51% 91	+10.0 77% 2	+10.3 70% 1	-9.1 92% 4	+0.4 92% 3	+49 90% 58	+88 90% 61	+103 90% 82	+94 87% 61	+9 82% 95	+4.5 84% 3	-7.0 64% 8	+64 85% 61	+10.3 84% 13	+3.4 84% 3	+2.2 85% 13	+0.8 77% 29	+2.1 86% 53	+0.86 78% 96	-1 85% 99	+0.94 82% 69	+1.14 81% 84	+1.08 78% 65	\$246 10	\$422 6	
<b>NZE19507013</b> VTME343 NZE19507111G183	<b>STORTH OAKS JACK J7<sup>SV</sup></b> HBR	+14 69% 97	+5.2 88% 24	+8.0 79% 7	-4.8 98% 43	+4.5 98% 62	+61 97% 10	+113 97% 6	+151 97% 4	+140 95% 6	+17 94% 48	+3.5 96% 92	-1.2 69% 14	+82 93% 28	+8.4 92% 92	-0.2 92% 52	-3.0 93% 89	-0.3 90% 87	+2.4 93% 45	+0.03 86% 29	+18 96% 60	+0.98 93% 76	+0.96 93% 46	+0.92 89% 18	\$184 71	\$364 38	
<b>VSNG34</b> VTMB1 VSNE22	<b>STRATHEWEN BERKLEY G34<sup>PV</sup></b> HBR	+40 70% 62	+6.2 83% 16	+7.4 74% 10	-6.2 95% 23	+3.8 94% 46	+56 93% 24	+107 92% 12	+142 93% 10	+148 90% 4	+18 88% 41	+2.3 87% 43	-7.6 68% 5	+83 90% 13	+5.8 90% 58	+0.9 89% 28	+0.0 90% 43	+0.3 86% 60	+1.7 91% 64	-0.12 85% 16	+32 89% 12	+1.12 88% 92	+1.26 88% 95	+1.10 84% 71	\$229 23	\$437 3	
<b>USA17236055</b> USA15354674 USA16214508	<b>SYDGEN BLACK PEARL 2006<sup>PV</sup></b> HBR	+8 76% 99	+2.3 98% 51	+8.1 93% 6	-7.0 99% 15	+3.2 99% 32	+51 99% 47	+85 99% 70	+123 99% 40	+85 98% 75	+21 99% 19	+1.6 99% 69	-3.6 88% 74	+75 98% 28	+8.6 97% 26	+0.5 97% 36	+0.1 97% 42	+0.4 96% 54	+2.6 97% 40	+0.19 92% 47	+15 99% 72	+1.04 99% 85	+1.18 99% 89	+1.14 98% 81	\$216 36	\$349 51	
<b>VTMA149</b> VTMX60 VTMU338	<b>TE MANIA ADA A149<sup>PV</sup></b> HBR	+39 64% 64	-7.0 97% 95	-2.3 91% 90	-3.2 99% 69	+6.5 99% 93	+53 99% 40	+97 99% 34	+129 99% 27	+170 98% 1	+10 98% 94	+2.0 98% 54	-2.0 86% 94	+82 97% 14	+2.9 96% 87	-3.2 97% 97	-1.9 97% 76	+1.4 96% 7	-0.4 96% 98	-0.66 91% 1	+27 97% 26	+0.88 97% 58	+0.76 97% 9	+0.78 96% 3	\$96 99	\$250 96	
<b>VTMK52</b> USA16295688 VTMH423	<b>TE MANIA KALIBROOK K52<sup>PV</sup></b> HBR	+45 71% 53	+7.7 78% 8	+5.0 69% 29	-3.0 94% 72	+1.5 95% 8	+52 92% 42	+103 92% 19	+129 91% 28	+104 87% 44	+29 82% 1	+1.7 87% 66	-5.9 65% 22	+72 87% 35	+3.2 86% 85	+0.6 84% 34	+2.1 87% 14	-0.7 82% 96	+5.4 88% 3	+1.42 79% 99	+9 86% 90	+1.18 89% 96	+1.10 89% 78	+1.10 86% 71	\$249 9	\$421 6	
<b>Breed Average EBVs</b>		<b>+48</b>	<b>+1.7</b>	<b>+2.8</b>	<b>-4.4</b>	<b>+4.0</b>	<b>+51</b>	<b>+92</b>	<b>+118</b>	<b>+101</b>	<b>+17</b>	<b>+2.2</b>	<b>-4.6</b>	<b>+67</b>	<b>+6.6</b>	<b>+0.0</b>	<b>-0.3</b>	<b>+0.5</b>	<b>+2.4</b>	<b>+0.23</b>	<b>+21</b>	<b>+0.84</b>	<b>+0.97</b>	<b>+1.03</b>	<b>+202</b>	<b>+345</b>	

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Ident	Name		Calv-Ease		Birth		Growth			Maternal			Fert			Carcase				Feed	Temp	Structural		Selection Index		
Sire Dam	Reg.	ImmuneDEX 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
<b>VTMK138</b> USA16295688 VTMH17	<b>TE MANIA KIRBY K138<sup>PV</sup></b> HBR	+18 68% 93	+0.3 88% 67	+6.8 79% 13	-1.2 99% 91	+4.6 99% 64	+51 98% 47	+89 98% 58	+118 98% 51	+95 97% 59	+18 97% 38	+2.4 98% 39	-9.2 81% 1	+65 97% 56	+5.9 96% 57	+1.5 95% 18	+3.3 97% 6	-1.6 94% 99	+8.3 96% 1	+1.04 88% 99	+12 99% 82	+0.78 99% 36	+0.76 99% 9	+0.92 98% 18	\$272 2	\$434 4
<b>VTMN424</b> VTMJ89 VTMJ214	<b>TE MANIA NEBO N424<sup>PV</sup></b> HBR	+51 51% 43	+9.4 88% 3	-0.4 82% 82	-6.6 98% 19	+4.0 98% 50	+52 98% 42	+99 98% 28	+127 98% 32	+101 97% 49	+31 95% 1	+4.4 97% 3	-4.2 66% 60	+56 96% 81	+7.1 95% 42	-1.0 94% 71	-4.1 96% 95	+0.5 88% 47	+3.9 94% 15	-0.12 83% 16	+46 98% 1	+0.98 98% 76	+0.92 98% 36	+0.94 97% 22	\$208 45	\$359 43
<b>VTMN1387</b> VTMK138 VTML452	<b>TE MANIA NEON N1387<sup>SV</sup></b> HBR	+19 50% 92	-0.6 80% 73	+2.8 69% 54	-6.0 98% 26	+3.7 98% 43	+49 97% 60	+87 96% 64	+109 97% 72	+94 93% 61	+19 84% 36	+1.4 95% 76	-8.4 58% 2	+49 89% 91	+2.6 89% 89	+0.0 87% 47	-1.5 89% 71	-1.7 81% 99	+9.1 88% 1	+0.05 71% 31	+26 97% 28	+0.76 95% 32	+0.82 95% 16	+1.02 94% 46	\$236 17	\$383 23
<b>VTMP888</b> VTMK226 VTMH423	<b>TE MANIA PESO P888<sup>PV</sup></b> HBR	+53 56% 39	+8.3 84% 6	+6.4 75% 16	-5.1 98% 39	+1.9 97% 12	+56 97% 26	+113 97% 6	+143 97% 10	+118 95% 24	+25 90% 5	+2.1 92% 50	-6.2 62% 17	+89 93% 6	+5.5 92% 62	-0.4 91% 57	+1.2 92% 24	+0.6 84% 41	+1.5 92% 70	-0.01 82% 25	+26 95% 26	+0.84 93% 49	+1.10 94% 78	+1.00 90% 39	\$254 7	\$442 2
<b>DBLL292</b> USA16295688 VSNF04	<b>TOPBOS LEADING EDGE L292<sup>PV</sup></b> HBR	+26 74% 84	+1.7 88% 56	+7.2 74% 11	-5.7 98% 30	+6.6 97% 93	+73 97% 1	+126 97% 1	+164 97% 1	+149 95% 4	+22 95% 17	+1.4 96% 76	-4.1 69% 63	+83 93% 12	+4.4 92% 74	-2.5 90% 93	-5.1 92% 98	+0.2 87% 66	+1.3 92% 75	-0.01 86% 25	+21 97% 46	+0.94 92% 69	+0.76 91% 9	+0.78 88% 3	\$225 27	\$412 9
<b>NZE17691009</b> NZE17691003Y167 NZE17691195Q263	<b>TURIHAU CRUMP E5<sup>SV</sup></b> HBR	+77 63% 8	-1.2 93% 77	-0.9 86% 84	-5.9 97% 27	+3.2 98% 32	+29 98% 99	+59 98% 99	+83 98% 98	+92 97% 65	+15 97% 69	+1.2 97% 81	-9.8 89% 1	+16 95% 99	-0.4 95% 98	+5.1 95% 1	+3.4 95% 6	-0.3 93% 87	+1.5 95% 70	+0.43 88% 73	+30 90% 16	+0.64 84% 13	+1.20 84% 91	+1.20 79% 91	\$136 96	\$267 93
<b>BSCF73</b> USA15688392 BSCZ66	<b>WAITARA PIO FEDERAL F73<sup>SV</sup></b> HBR	+50 76% 45	+4.5 90% 30	+5.1 77% 28	-4.3 98% 52	+1.6 98% 9	+56 97% 26	+102 98% 20	+134 97% 20	+88 96% 71	+24 96% 8	+2.5 97% 36	-2.9 70% 86	+88 95% 7	+5.5 94% 62	-0.2 94% 52	+0.1 94% 42	+0.2 89% 66	+1.5 94% 70	+0.31 88% 61	+11 96% 85	+1.40 95% 99	+1.26 95% 95	+0.96 92% 27	\$218 33	\$361 41
<b>QKBP29</b> SMPG357 QKBM01	<b>WARRAWEE PATROL P29<sup>PV</sup></b> HBR	+58 64% 31	+7.2 78% 10	+11.3 69% 1	-12.2 96% 1	+2.8 94% 24	+56 92% 26	+105 90% 16	+139 90% 13	+129 87% 13	+18 82% 38	+2.2 87% 47	-9.1 64% 1	+100 85% 2	+9.3 84% 20	+3.4 84% 3	+1.7 85% 18	+0.4 78% 54	+1.7 86% 64	+0.72 77% 91	+27 88% 26	+0.82 77% 45	+1.24 78% 94	+1.00 73% 39	\$269 3	\$479 1
<b>NWPG188</b> USA15462648 NWPE295	<b>WATTLETOP FRANKLIN G188<sup>SV</sup></b> HBR	+49 65% 46	+4.5 95% 30	+6.3 87% 17	-4.4 99% 50	+2.3 99% 17	+63 98% 6	+109 98% 10	+140 98% 12	+119 98% 22	+25 97% 6	+3.8 98% 8	-3.4 76% 78	+83 96% 13	+1.4 95% 94	-1.5 95% 80	-2.2 95% 81	-0.1 92% 81	+0.5 94% 90	-1.17 88% 1	+33 97% 10	+1.10 96% 91	+0.96 96% 46	+0.94 94% 22	\$188 67	\$355 46
<b>CWDJ17</b> BNAD145 CWDF14	<b>WEATHERLY JAMES J17<sup>SV</sup></b> HBR	+36 74% 69	-3.6 79% 88	-3.7 71% 94	-3.3 93% 68	+6.1 93% 89	+49 92% 57	+83 92% 76	+109 92% 70	+115 89% 27	+1 87% 99	+1.5 86% 73	-4.3 67% 58	+65 90% 58	+8.5 89% 27	+1.2 90% 22	+2.3 90% 12	+1.1 85% 16	+3.4 91% 23	-0.03 84% 23	+4 87% 97	+0.86 87% 53	+1.22 87% 93	+1.00 81% 39	\$200 55	\$334 63
<b>CWDM5</b> SMPG357 CWDJ15	<b>WEATHERLY MOXY M5<sup>SV</sup></b> HBR	+44 52% 55	+3.6 78% 38	+7.5 68% 9	-5.0 93% 40	+4.0 95% 50	+56 93% 27	+97 93% 33	+130 94% 26	+109 92% 36	+27 88% 3	+2.6 89% 32	-5.6 60% 27	+89 84% 6	+7.4 83% 39	+2.3 84% 9	-0.6 84% 54	+0.6 79% 41	+2.3 84% 48	+0.20 71% 48	+21 90% 48	+1.00 91% 79	+1.08 91% 74	+0.96 82% 27	\$233 19	\$397 16
<b>Breed Average EBVs</b>		<b>+48</b>	<b>+1.7</b>	<b>+2.8</b>	<b>-4.4</b>	<b>+4.0</b>	<b>+51</b>	<b>+92</b>	<b>+118</b>	<b>+101</b>	<b>+17</b>	<b>+2.2</b>	<b>-4.6</b>	<b>+67</b>	<b>+6.6</b>	<b>+0.0</b>	<b>-0.3</b>	<b>+0.5</b>	<b>+2.4</b>	<b>+0.23</b>	<b>+21</b>	<b>+0.84</b>	<b>+0.97</b>	<b>+1.03</b>	<b>+202</b>	<b>+345</b>

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