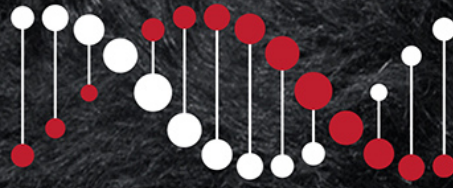


TACE



TransTasman Angus Cattle Evaluation

GENETIC BENCHMARKING REPORT

Angus Australia

MID JUNE 2024

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Genetic Progress Summary

2017 to 2022

Date: June 18, 2024

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This report assesses the change in the average EBVs of Angus seedstock animals across the nominated five year period.

Trait	Units	Breed	
		Change	Av. Change / Yr
Calving Ease Direct	%	+1.1	+0.2
Calving Ease Daughters	%	+1.3	+0.3
Gestation Length	days	-0.8	-0.2
Birth Weight	kg	-0.3	-0.1
200 Day Growth	kg	+4.7	+0.9
400 Day Weight	kg	+8.5	+1.7
600 Day Weight	kg	+10.0	+2.0
Mature Cow Weight	kg	+7.6	+1.5
Milk	kg	+0.8	+0.2
Scrotal Size	cm	+0.3	+0.1
Days to Calving	days	-0.1	+0.0
Carcase Weight	kg	+6.1	+1.2
Carcase EMA	cm.sq	+1.0	+0.2
Carcase Rib Fat	mm	+0.1	+0.0
Carcase Rump Fat	mm	+0.1	+0.0
Retail Beef Yield	%	-0.1	+0.0
Carcase IMF	%	+0.5	+0.1
Docility	%	+2.7	+0.5
NFI-F	%	+0.1	+0.0
Claw Set	score	+0.0	+0.0
Foot Angle	score	+0.0	+0.0
Leg Angle	score	+0.0	+0.0
Angus Breeding (\$A)	\$	+24.1	+4.8
Domestic (\$D)	\$	+19.7	+3.9
Heavy Grain (\$GN)	\$	+33.9	+6.8
Heavy Grass(\$GS)	\$	+24.1	+4.8
Angus Breeding Low Feed Cost (\$A-L)	\$	+38.6	+7.7
Domestic Low Feed Cost (\$D-L)	\$	+33.0	+6.6
Heavy Grain Low Feed Cost (\$GN-L)	\$	+49.2	+9.8
Heavy Grass Low Feed Cost (\$GS-L)	\$	+42.9	+8.6
AngusPRO (\$PRO)	\$	+24.7	+4.9
Angus Terminal Sire (\$T)	\$	+21.6	+4.3

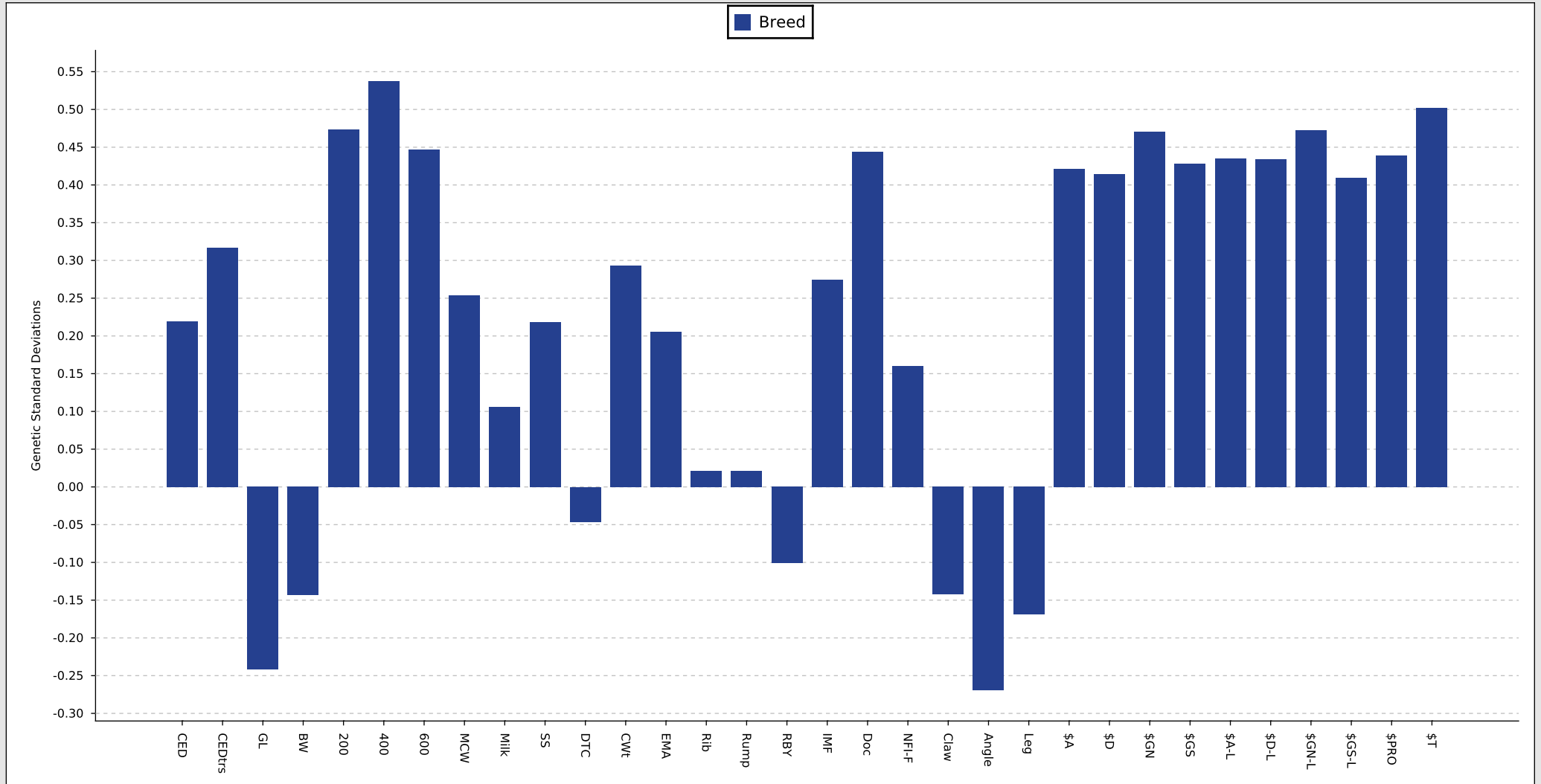
Genetic Progress Summary

Date: June 18, 2024

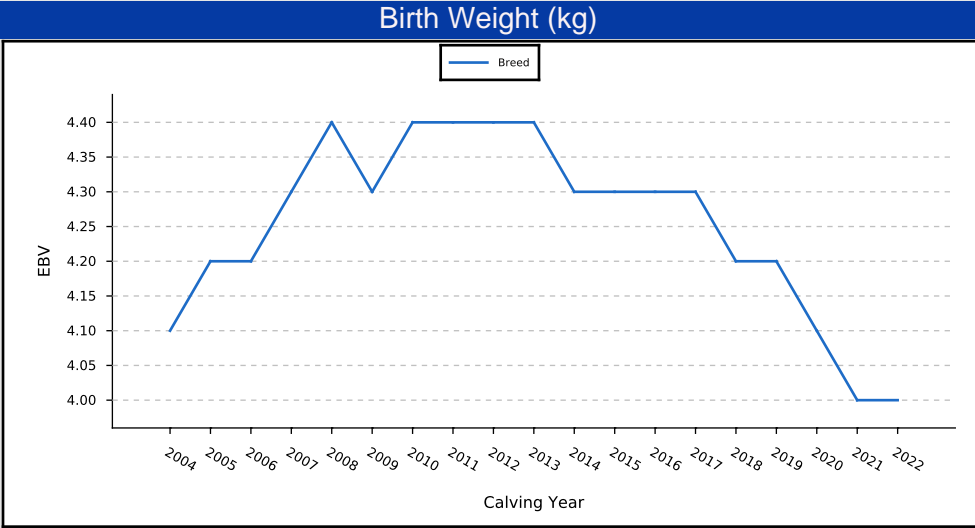
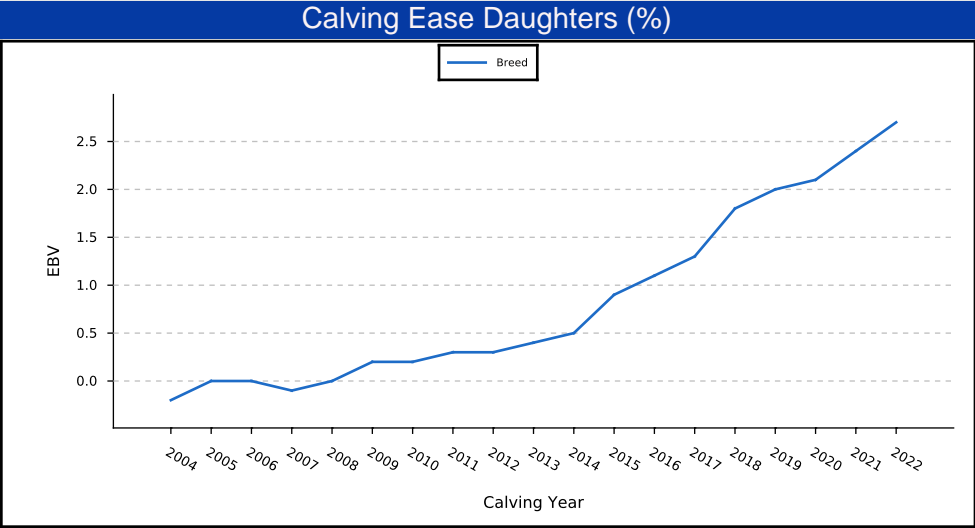
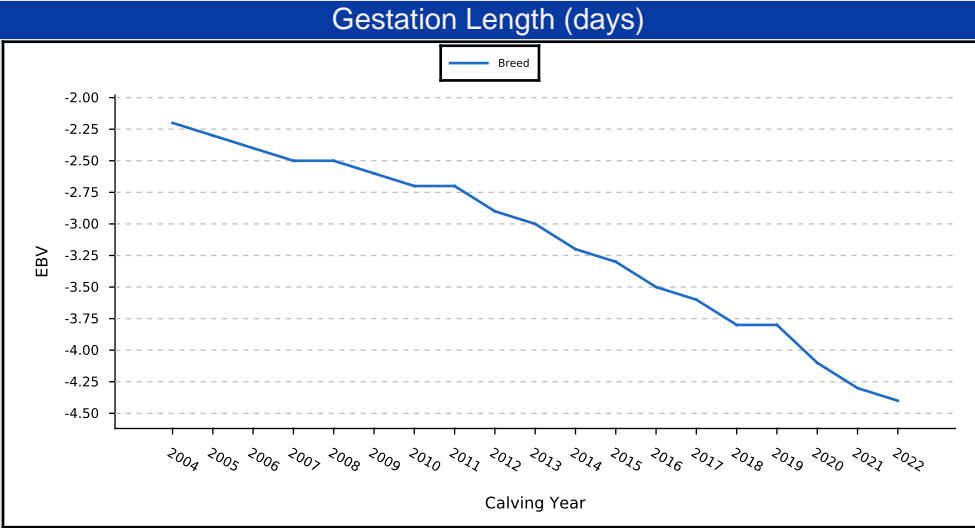
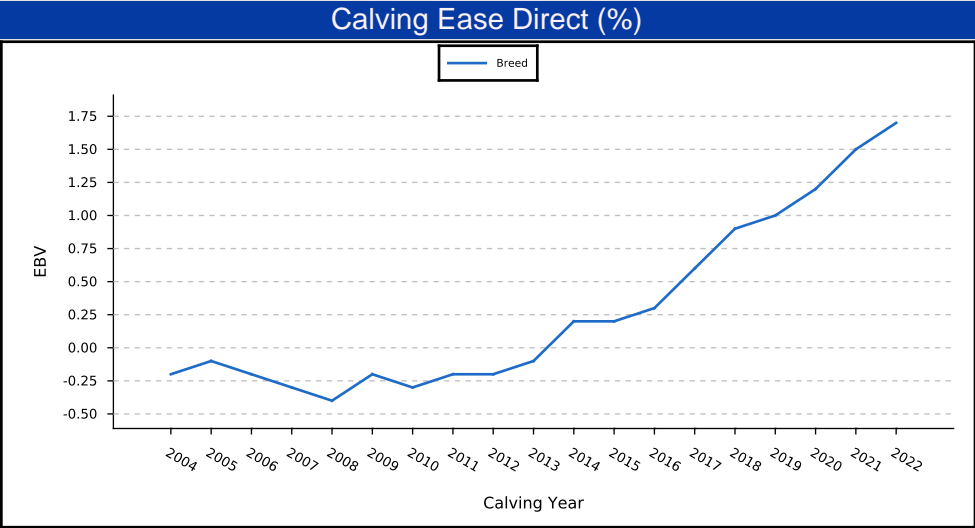
Relative Change in Each Trait - 2017 to 2022

Page: 2

This report assesses the change in the average EBVs of Angus seedstock animals across the nominated five year period in standard deviation units (rather than the units of measurement), enabling comparison of the relative change that has occurred in individual traits.

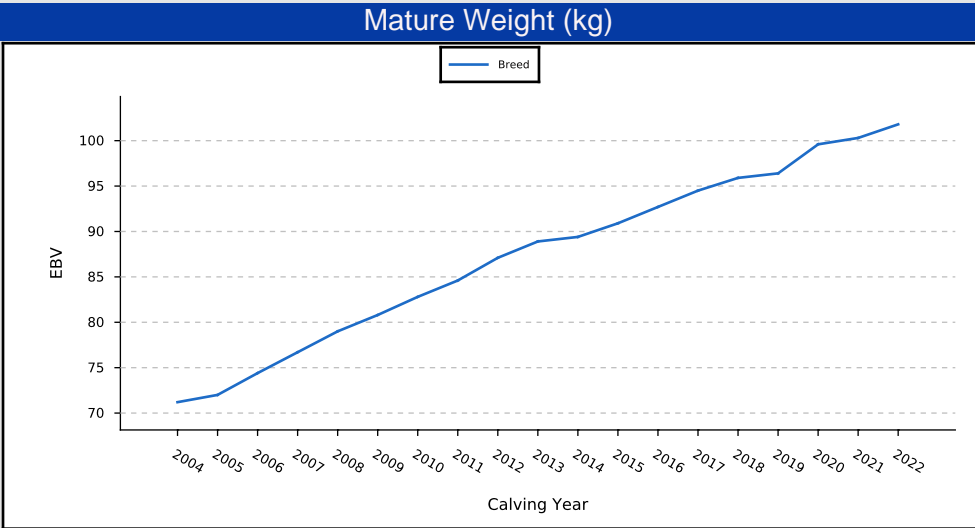
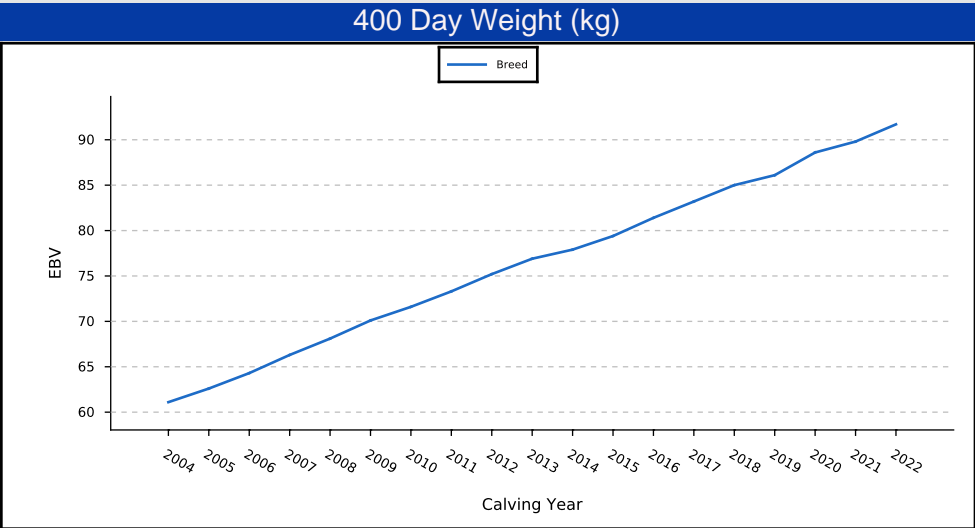
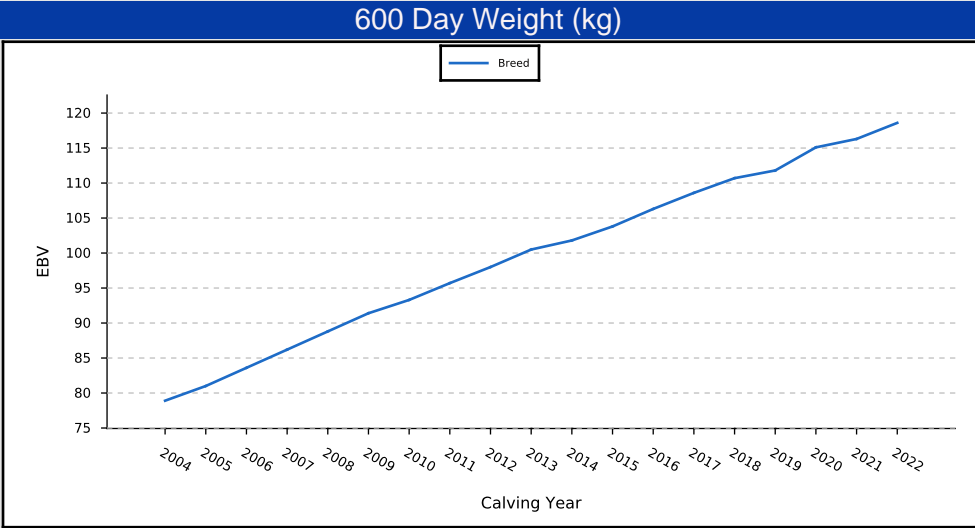
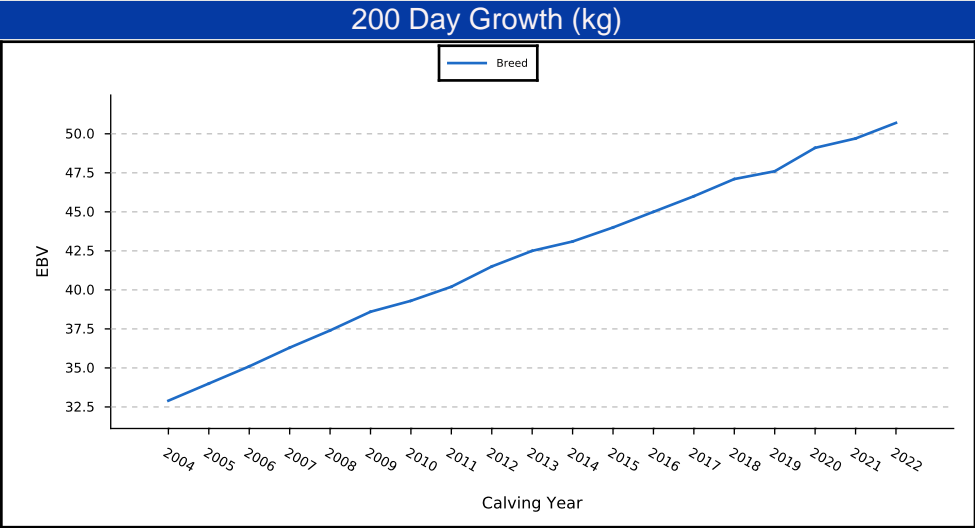


The reports below assess the change in the average EBVs of Angus seedstock animals born in each year for each respective trait.

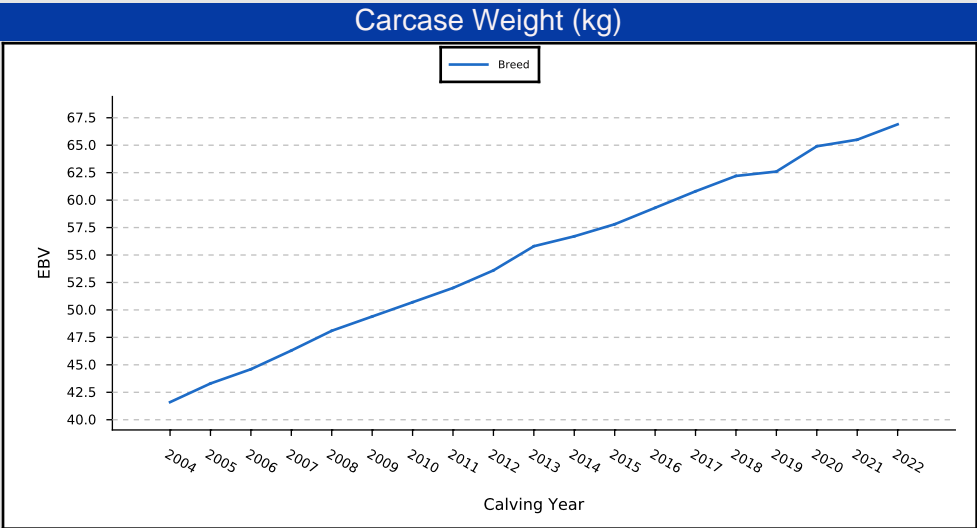
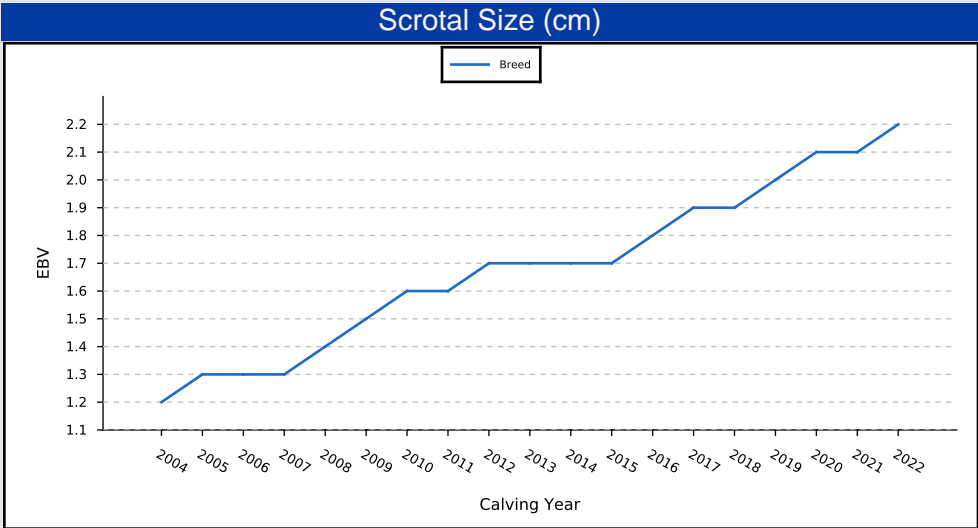
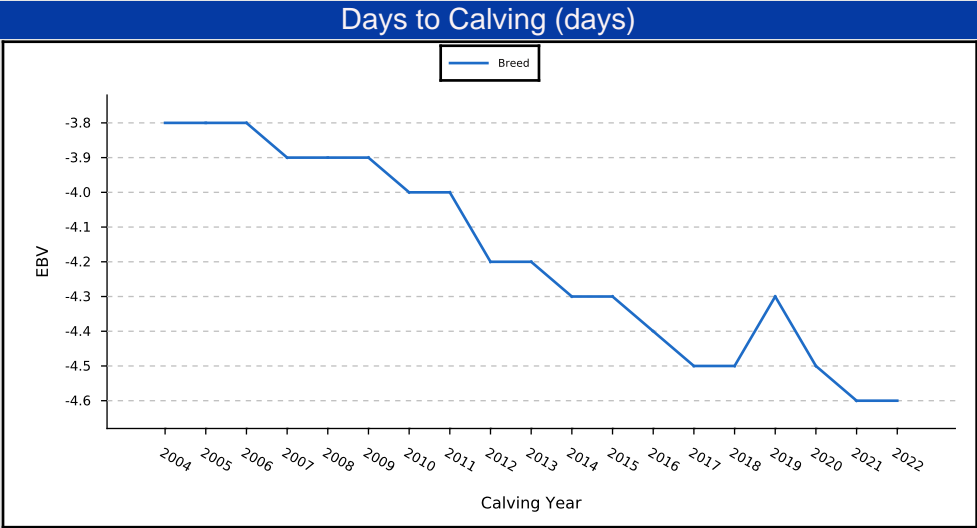
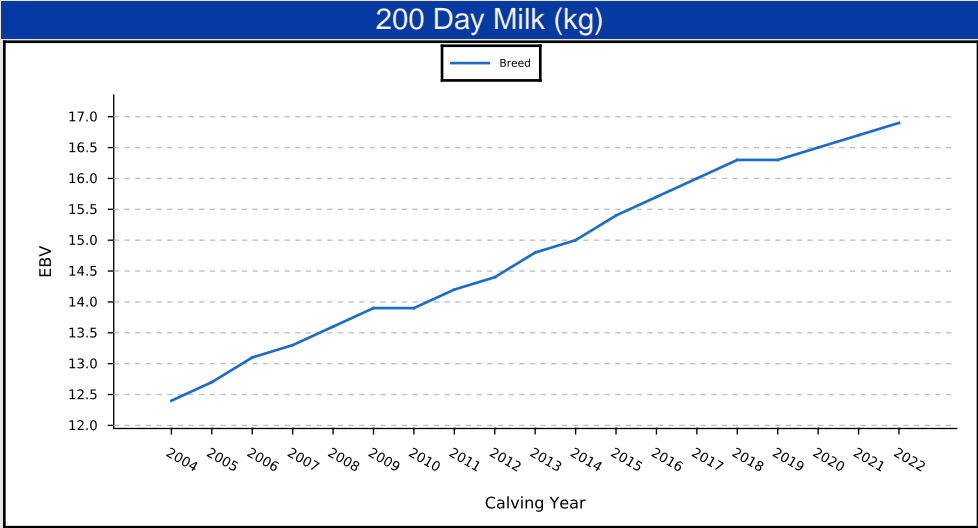


Genetic Progress By Trait

The reports below assess the change in the average EBVs of Angus seedstock animals born in each year for each respective trait.

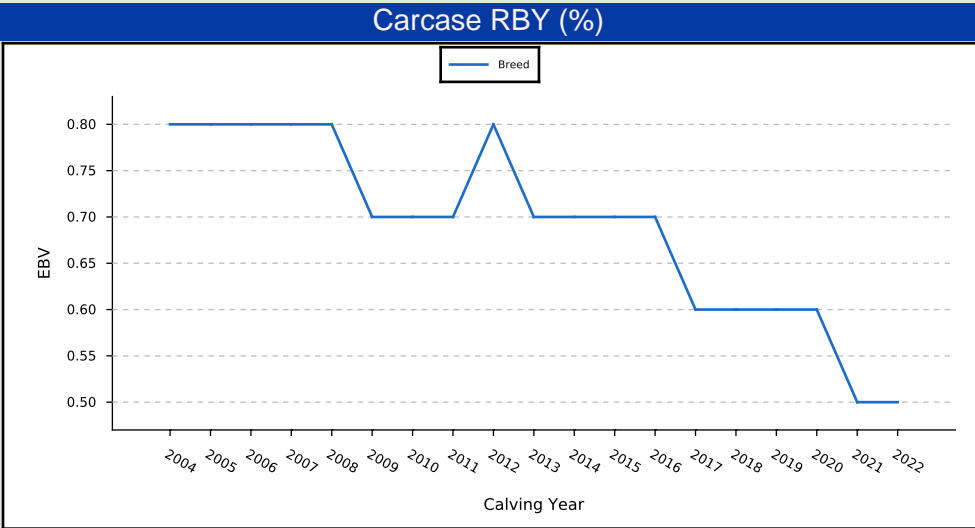
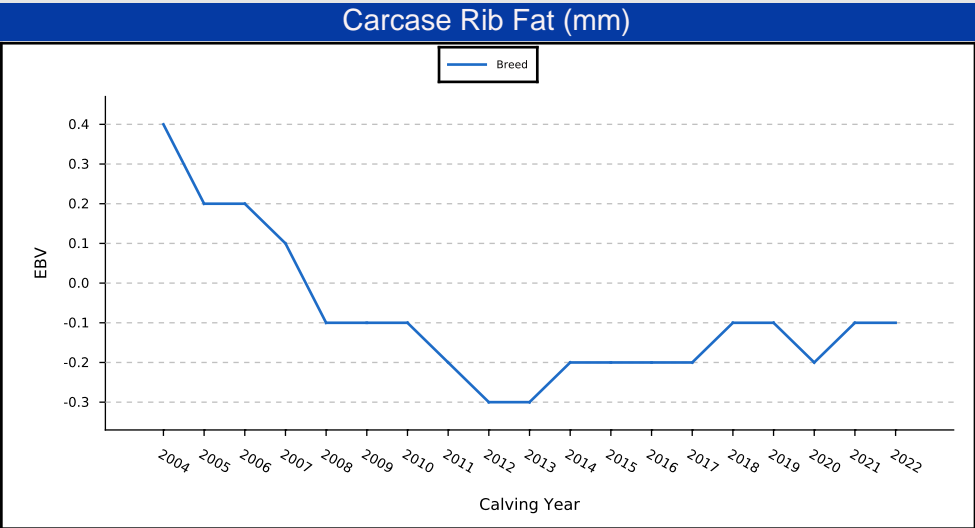
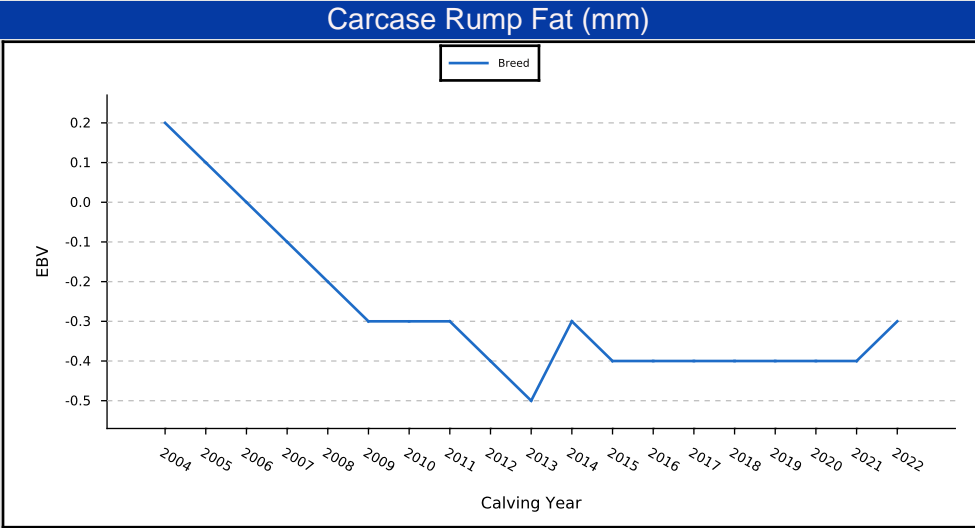
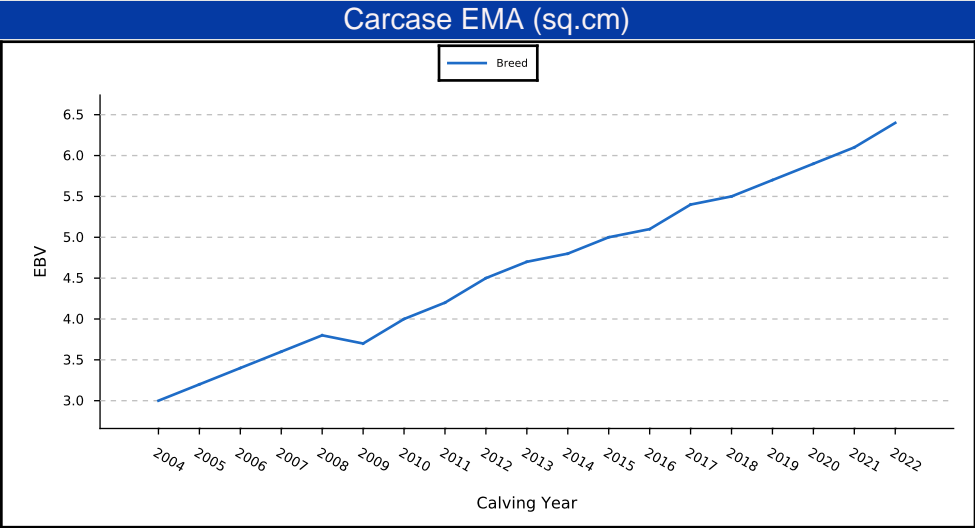


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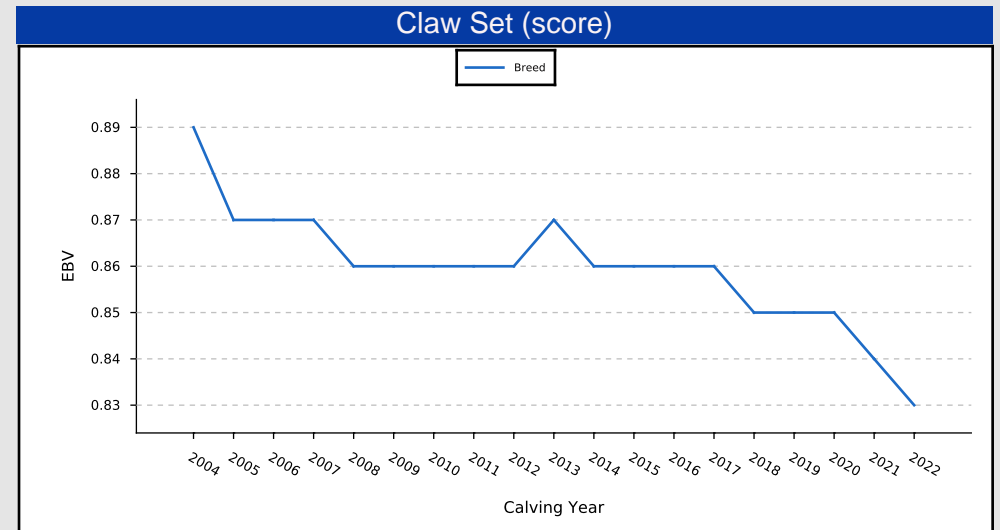
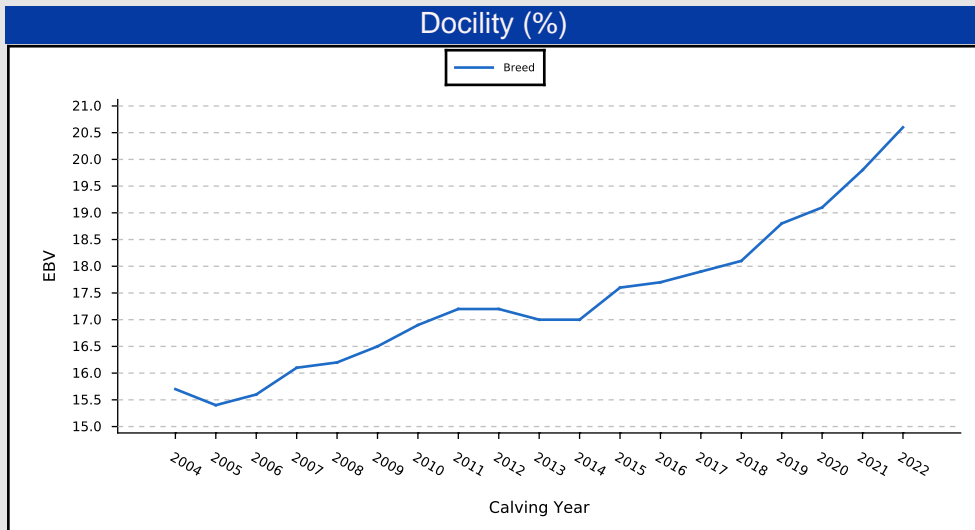
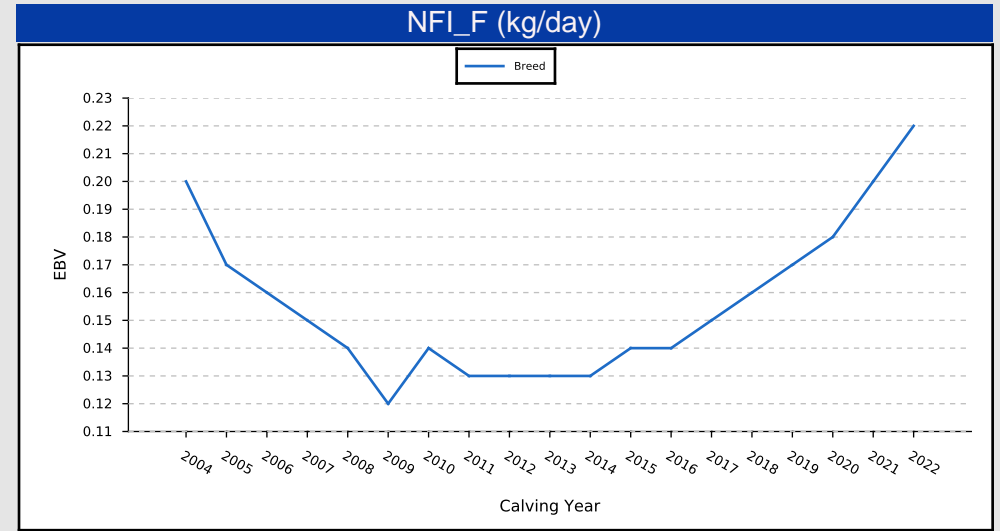
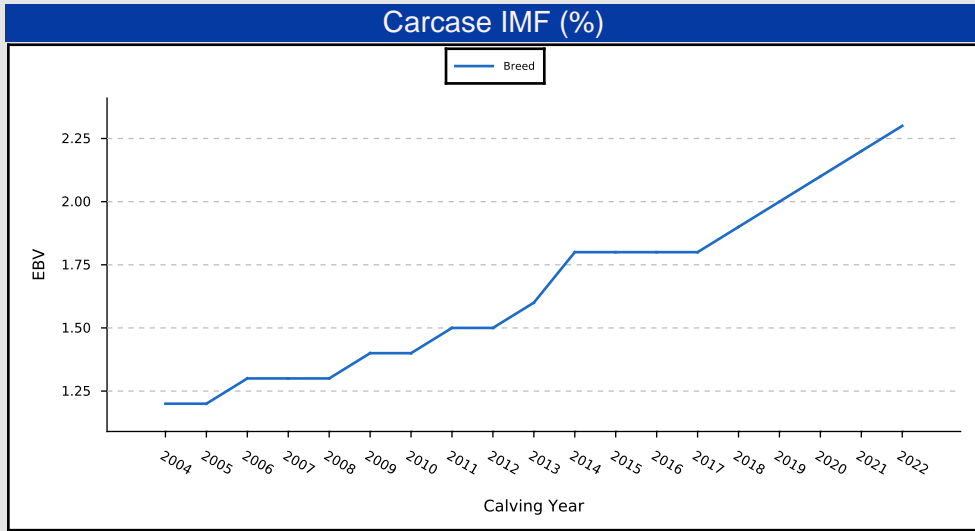


Genetic Progress By Trait

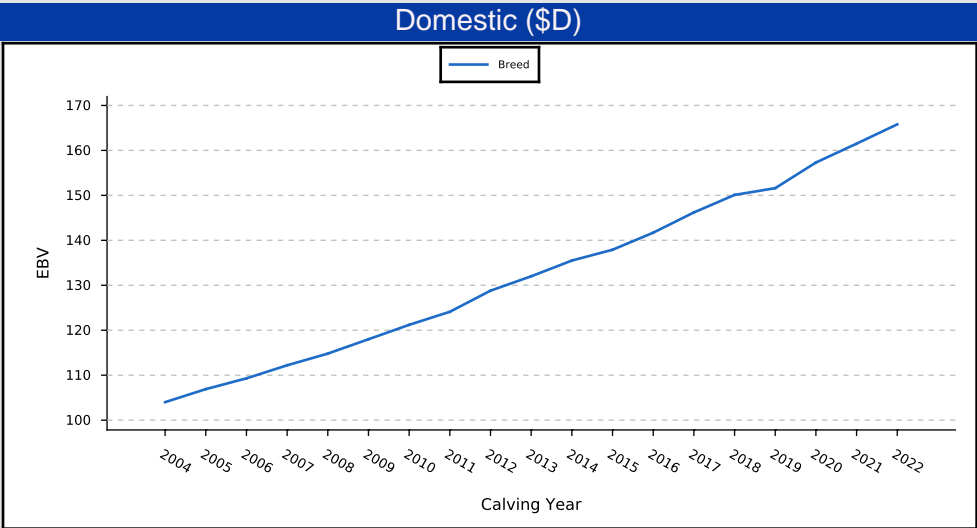
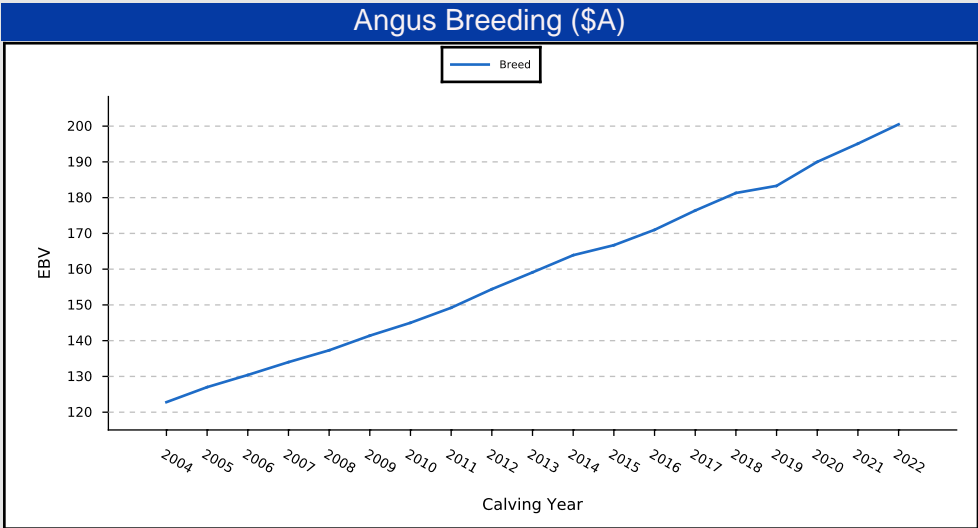
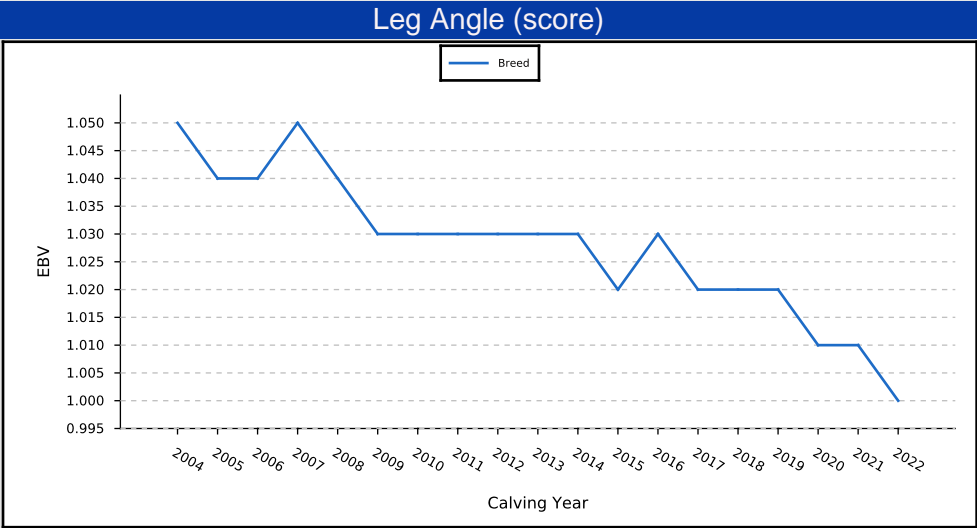
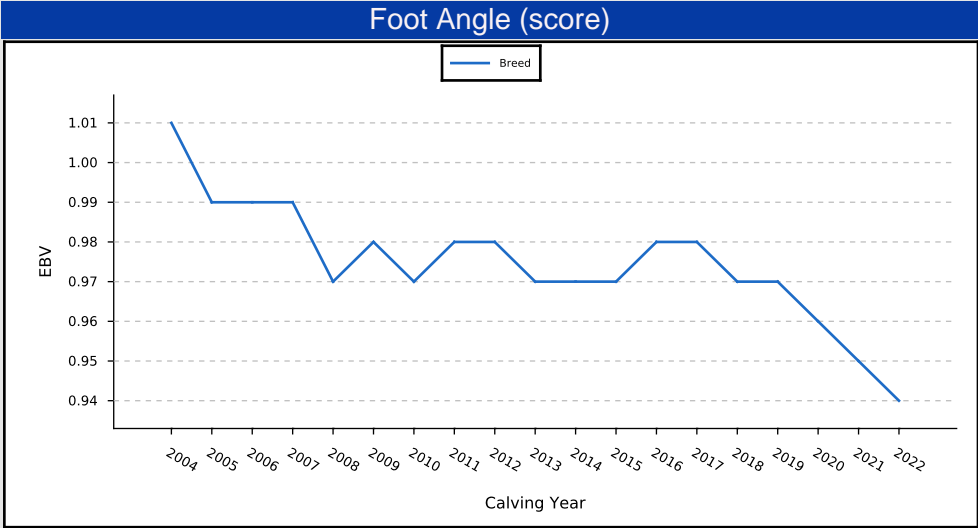
Date: June 18, 2024

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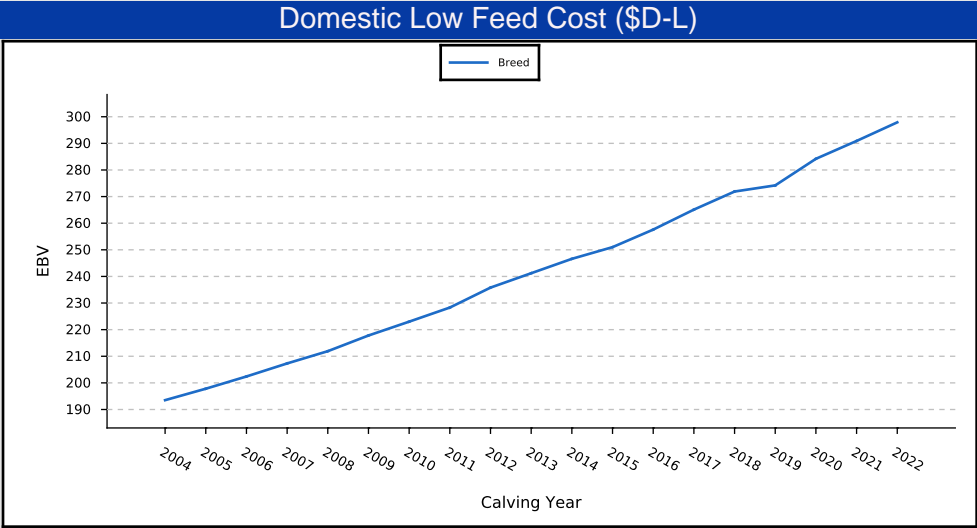
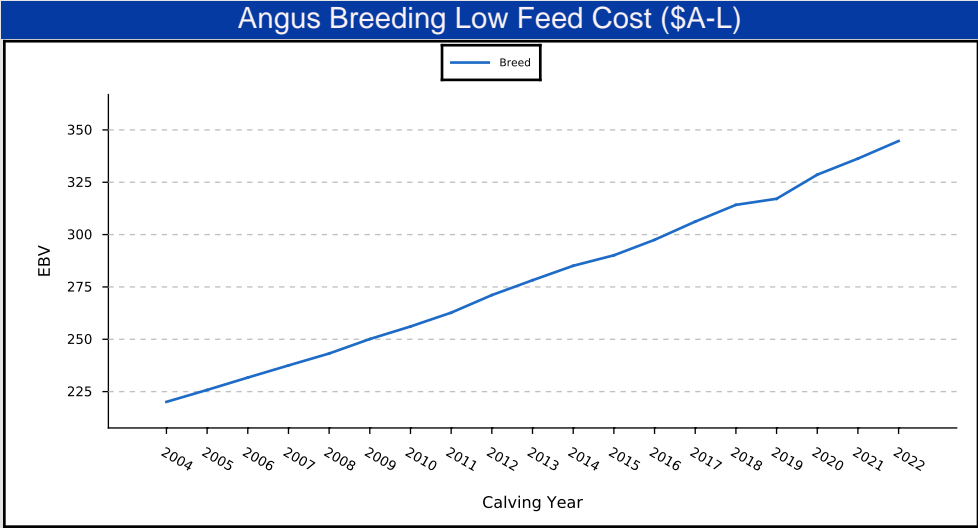
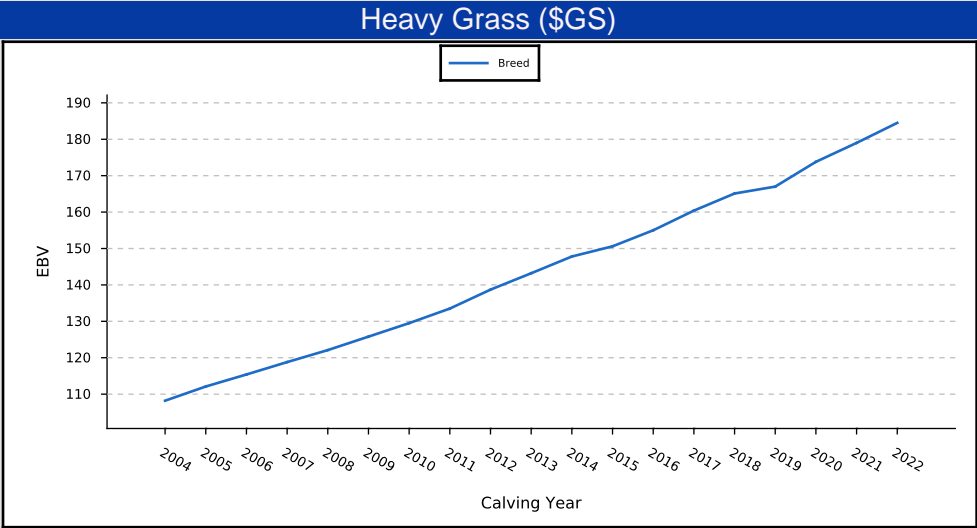
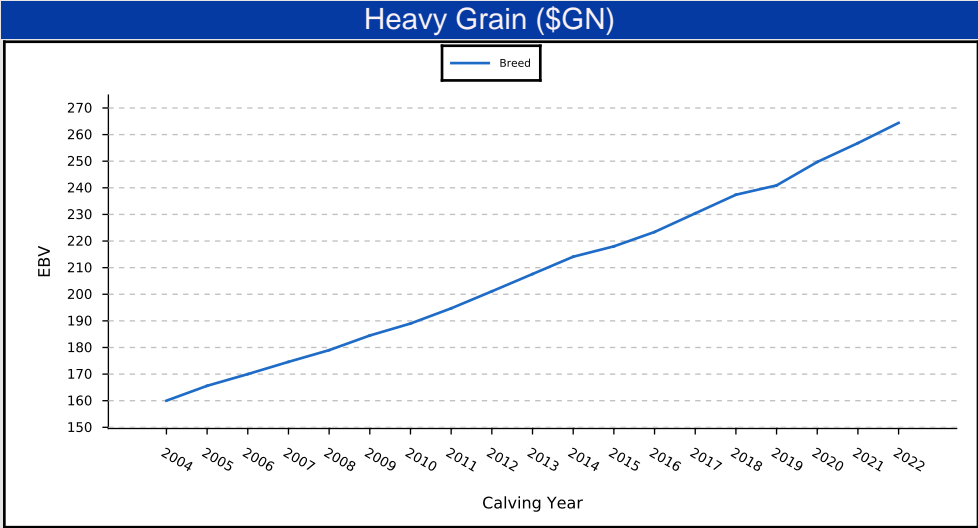
The reports below assess the change in the average EBVs of Angus seedstock animals born in each year for each respective trait.



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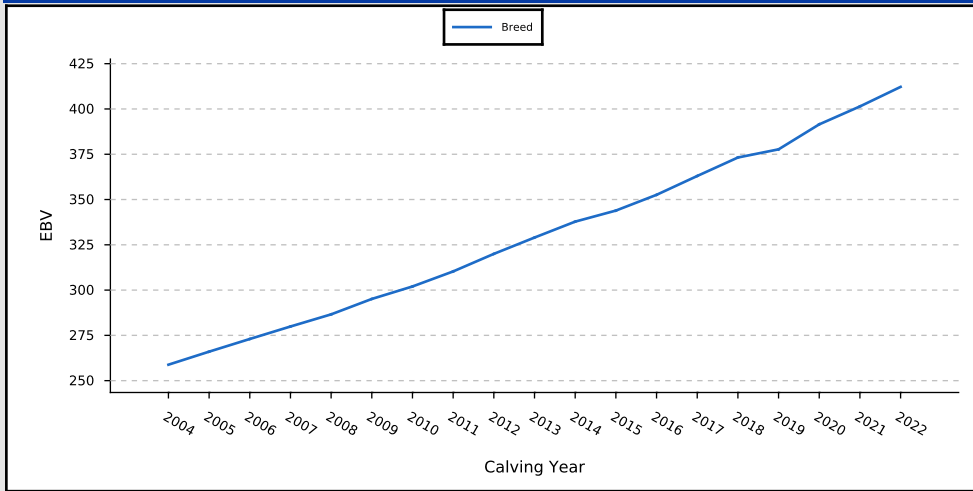
Genetic Progress By Trait

Date: June 18, 2024

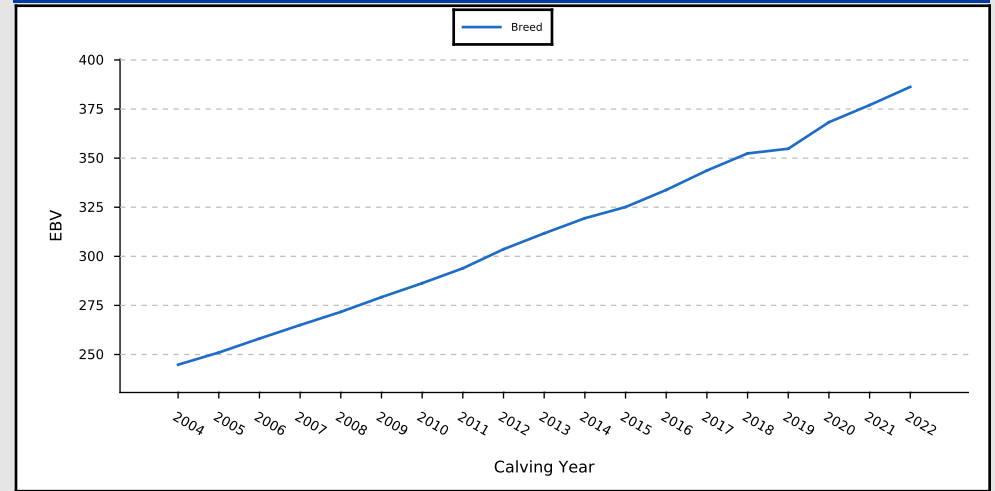
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The reports below assess the change in the average EBVs of Angus seedstock animals born in each year for each respective trait.

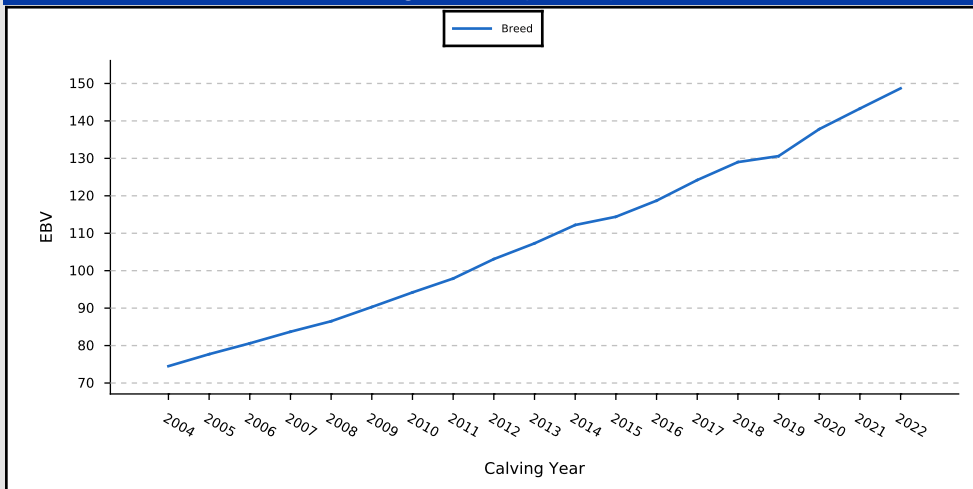
Heavy Grain Low Feed Cost (\$GN-L)



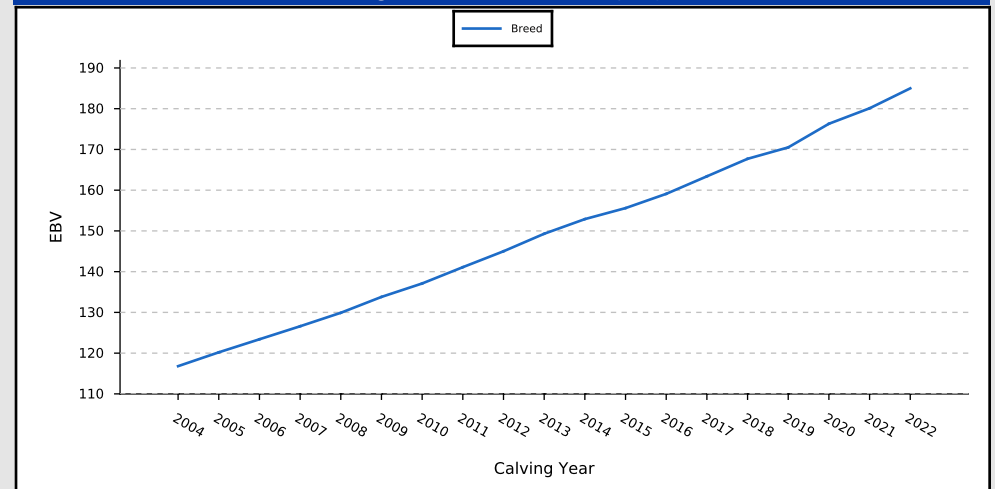
Heavy Grass Low Feed Cost (\$GS-L)



AngusPRO (\$PRO)

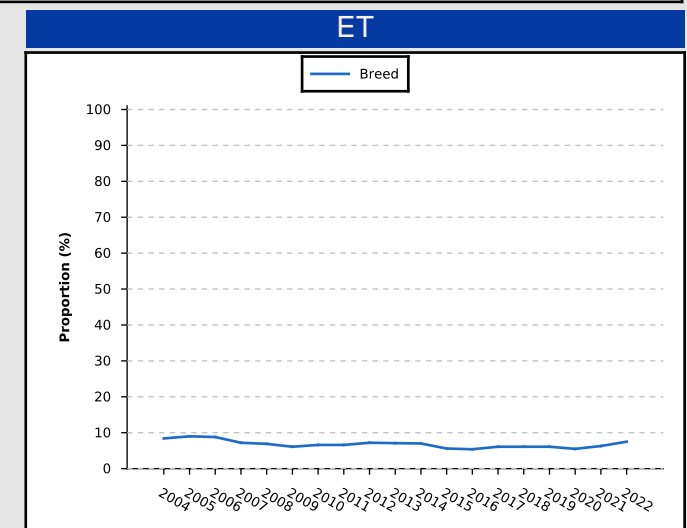
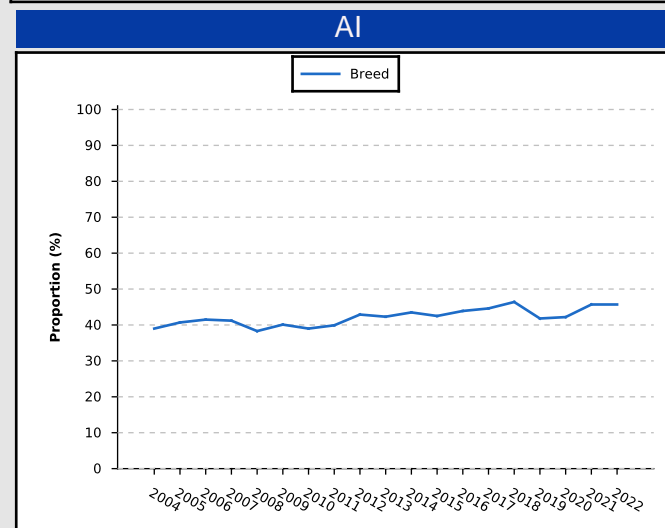
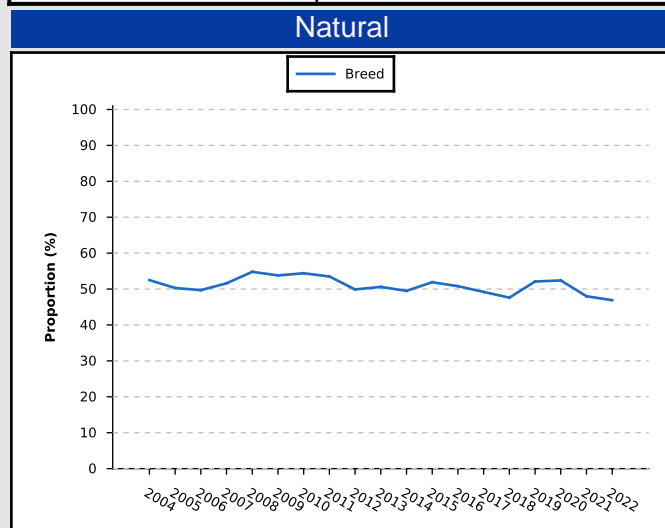
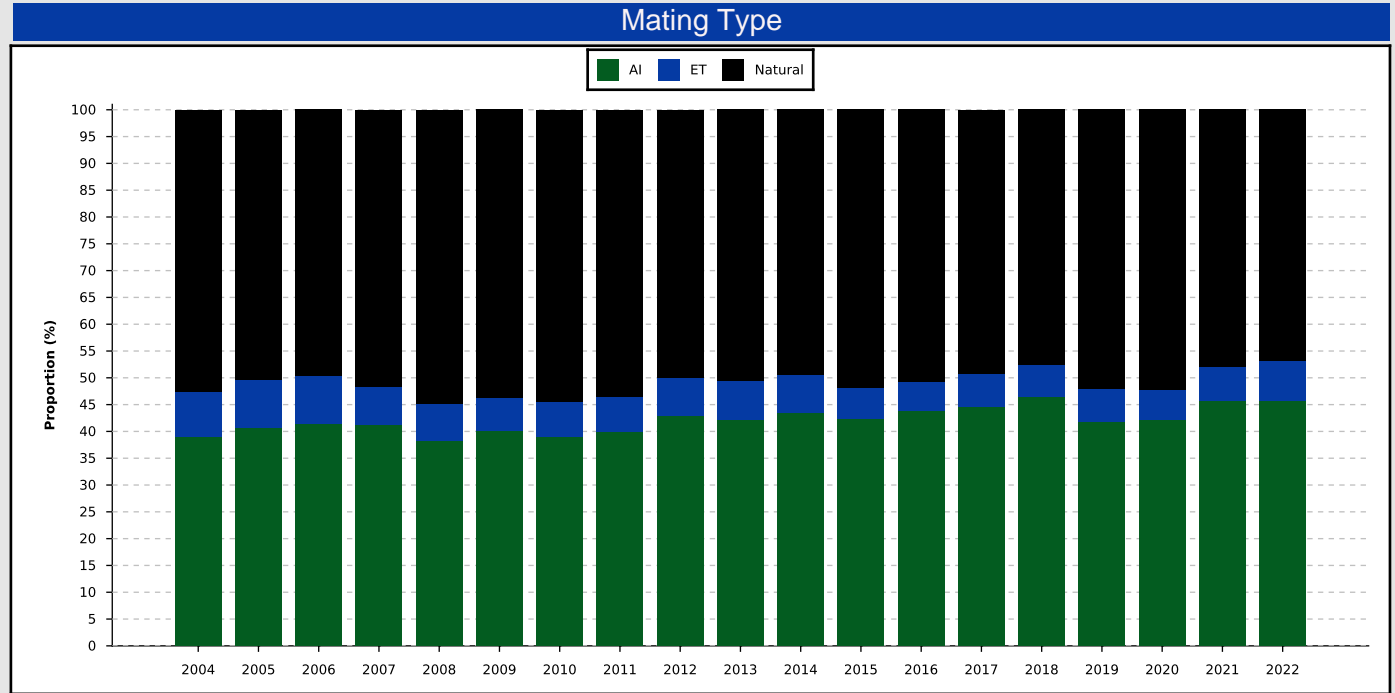


Angus Terminal Sire (\$T)



This report assesses the utilisation of reproductive technologies within the Angus breed by summarising the number of animals born in each year that have been bred by artificial insemination and embryo transfer.

Calving Year	Animals	Mating Type		
		Natural	AI	ET
2004	67053	35227	26174	5652
2005	69673	35040	28355	6278
2006	70732	35129	29345	6258
2007	67427	34805	27764	4858
2008	67829	37142	26004	4683
2009	66633	35874	26695	4064
2010	67311	36613	26272	4426
2011	73424	39267	29282	4875
2012	79484	39671	34099	5714
2013	81813	41377	34643	5793
2014	80668	39903	35121	5644
2015	81321	42224	34575	4522
2016	82310	41809	36096	4405
2017	85777	42232	38277	5268
2018	86002	40929	39868	5205
2019	85568	44605	35761	5202
2020	82769	43349	34900	4520
2021	94949	45594	43355	6000
2022	103419	48478	47214	7727



Generation Length

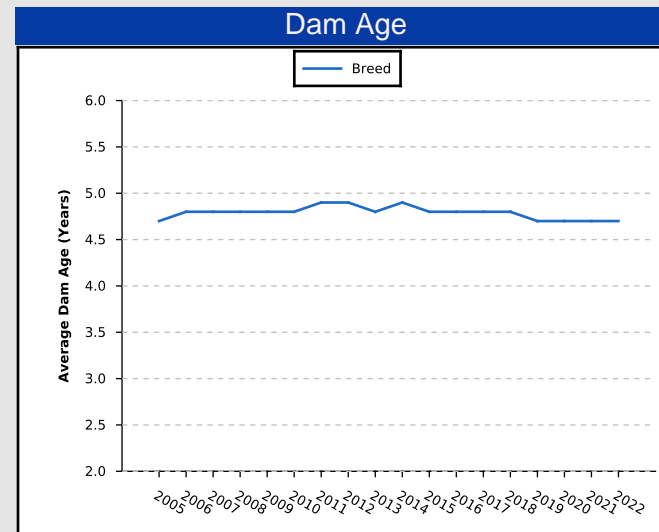
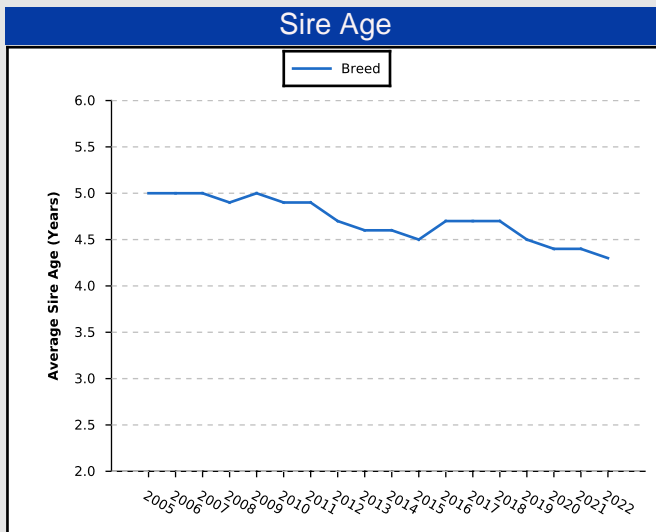
Average Sire and Dam Age By Year

Date: June 18, 2024

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This report summarises the average age of the sires and dams of Angus seedstock animals over time. The statistics are calculated as the age of the sire and dam when their progeny are born, and are weighted according to the number of progeny that a sire or dam has in a particular year. For example, if a sire has 50 calves in a particular calving year, its age will make a greater contribution to the average age statistics than a sire with 5 calves.

Calving Year	Animals	Sire Age (Years)				Dam Age (Years)			
		All	Natural	AI	ET	All	Natural	AI	ET
2005	63456	5.0	3.6	6.3	7.9	4.7	4.6	4.5	6.3
2006	64557	5.0	3.7	6.2	7.7	4.8	4.7	4.4	6.4
2007	62619	5.0	3.7	6.3	7.6	4.8	4.7	4.4	6.4
2008	63350	4.9	3.7	6.4	7.8	4.8	4.8	4.4	6.7
2009	62881	5.0	3.7	6.5	7.9	4.8	4.7	4.5	6.9
2010	63380	4.9	3.7	6.1	7.6	4.8	4.8	4.5	6.5
2011	69591	4.9	3.7	6.1	7.6	4.9	4.9	4.5	6.8
2012	74927	4.7	3.7	5.6	6.7	4.9	4.9	4.5	6.7
2013	77166	4.6	3.7	5.4	6.4	4.8	4.8	4.5	6.8
2014	76070	4.6	3.7	5.4	6.7	4.9	4.9	4.5	6.9
2015	77705	4.5	3.7	5.3	6.7	4.8	4.8	4.5	6.9
2016	78309	4.7	3.8	5.5	6.7	4.8	4.9	4.5	6.8
2017	80851	4.7	3.8	5.5	6.6	4.8	4.8	4.5	6.8
2018	81324	4.7	3.7	5.5	6.5	4.8	4.8	4.5	6.9
2019	81122	4.5	3.6	5.3	6.8	4.7	4.7	4.4	6.5
2020	79206	4.4	3.6	5.2	5.9	4.7	4.7	4.3	6.8
2021	90186	4.4	3.5	5.2	6.5	4.7	4.7	4.3	6.9
2022	96967	4.3	3.5	4.9	5.8	4.7	4.7	4.3	6.8



Genetic Diversity

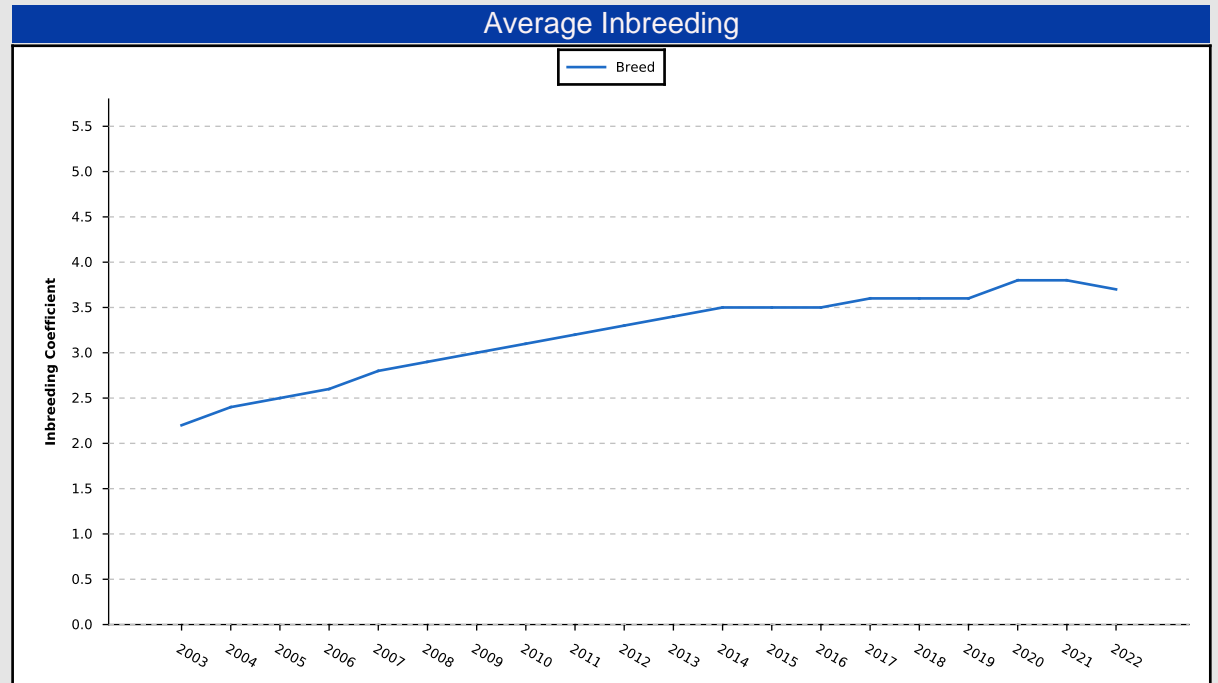
Average Inbreeding By Year

Date: June 18, 2024

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This report assesses the genetic diversity within the Angus breed by summarising the average inbreeding co-efficient of animals born in each year.

Calving Year	Animals	Inbreeding Coefficient (%)	
		Breed	
2003	59491		2.2
2004	61491		2.4
2005	63456		2.5
2006	64557		2.6
2007	62619		2.8
2008	63350		2.9
2009	62881		3.0
2010	63380		3.1
2011	69591		3.2
2012	74927		3.3
2013	77166		3.4
2014	76070		3.5
2015	77705		3.5
2016	78309		3.5
2017	80851		3.6
2018	81324		3.6
2019	81122		3.6
2020	79206		3.8
2021	90186		3.8
2022	96967		3.7



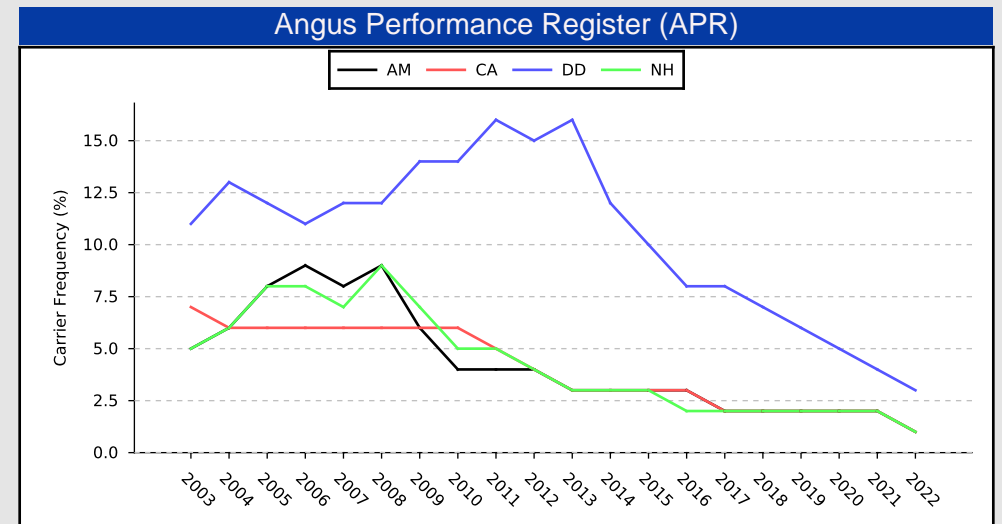
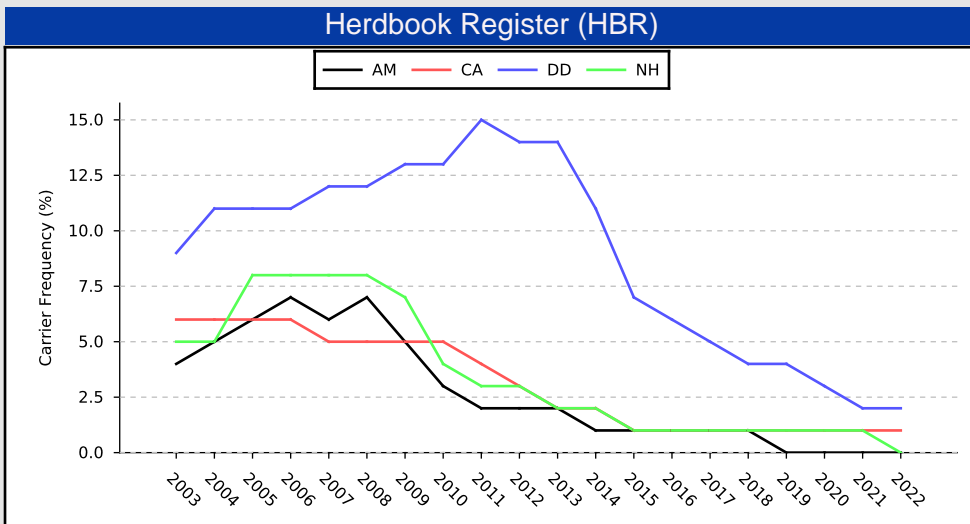
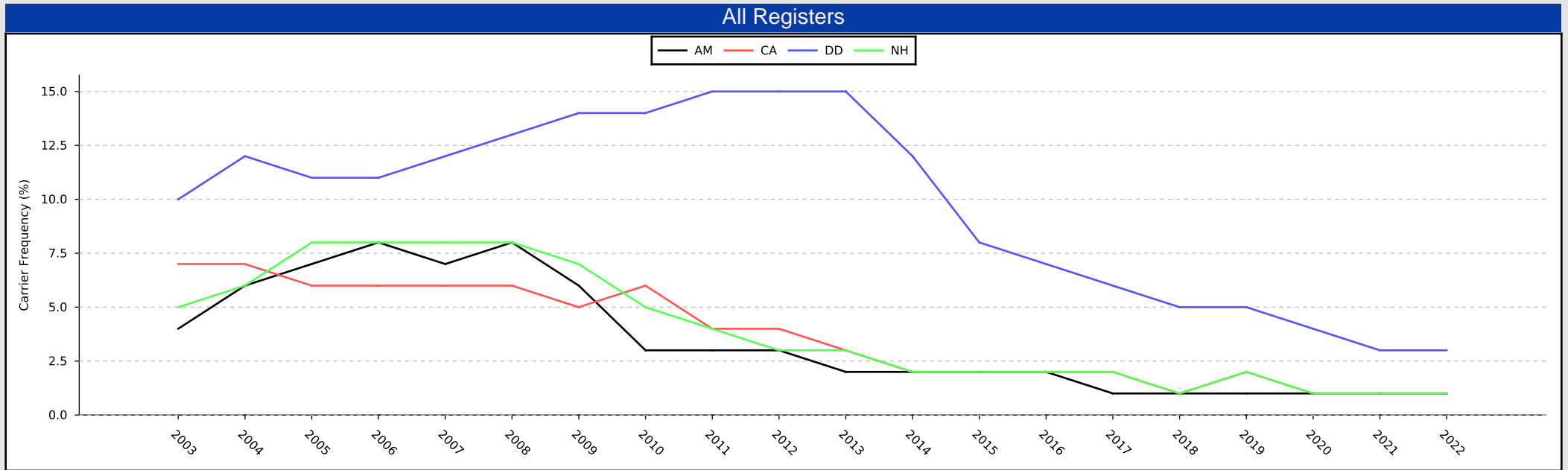
Genetic Conditions

Carrier Frequency By Register

Date: June 18, 2024

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This report assesses the frequency of carriers for recessive genetic conditions over time. The statistics are calculated based on the results of the gene probability analyses conducted by Angus Australia.



Appendix 2 Breed Genetic Trends

Date: June 18, 2024

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This report provides the average EBVs for all animals recorded with Angus Australia over time.

Year	Count	Estimated Breeding Values																															
		Calv-Ease		Birth		Growth				Fert		Carcase					Feed		Temp	Structural			Selection Index										
		Dir	Dtrs	GL	BW	200	400	600	Mwt	Milk	SS	DC	CW	EMA	RIB	P8	RBV	IMF	NFI-F	DOC	Claw	Angle	Leg	\$A	\$D	\$GN	\$GS	\$A-L	\$D-L	\$GN-L	\$GS-L	\$PRO	\$T
2004	61491	-0.2	-0.2	-2.2	+4.1	+33	+61	+79	+71	+12	+1.2	-3.8	+42	+3.0	+0.4	+0.2	+0.8	+1.2	+0.20	+16	+0.89	+1.01	+1.05	+123	+104	+160	+108	+220	+194	+259	+245	+75	+117
2005	63456	-0.1	+0.0	-2.3	+4.2	+34	+63	+81	+72	+13	+1.3	-3.8	+43	+3.2	+0.2	+0.1	+0.8	+1.2	+0.17	+15	+0.87	+0.99	+1.04	+127	+107	+166	+112	+226	+198	+266	+251	+78	+120
2006	64557	-0.2	+0.0	-2.4	+4.2	+35	+64	+84	+74	+13	+1.3	-3.8	+45	+3.4	+0.2	+0.0	+0.8	+1.3	+0.16	+16	+0.87	+0.99	+1.04	+130	+109	+170	+115	+232	+202	+273	+258	+81	+123
2007	62619	-0.3	-0.1	-2.5	+4.3	+36	+66	+86	+77	+13	+1.3	-3.9	+46	+3.6	+0.1	-0.1	+0.8	+1.3	+0.15	+16	+0.87	+0.99	+1.05	+134	+112	+175	+119	+238	+207	+280	+265	+84	+127
2008	63350	-0.4	+0.0	-2.5	+4.4	+37	+68	+89	+79	+14	+1.4	-3.9	+48	+3.8	-0.1	-0.2	+0.8	+1.3	+0.14	+16	+0.86	+0.97	+1.04	+137	+115	+179	+122	+243	+212	+287	+272	+87	+130
2009	62881	-0.2	+0.2	-2.6	+4.3	+39	+70	+91	+81	+14	+1.5	-3.9	+49	+3.7	-0.1	-0.3	+0.7	+1.4	+0.12	+17	+0.86	+0.98	+1.03	+141	+118	+185	+126	+250	+218	+295	+279	+90	+134
2010	63380	-0.3	+0.2	-2.7	+4.4	+39	+72	+93	+83	+14	+1.6	-4.0	+51	+4.0	-0.1	-0.3	+0.7	+1.4	+0.14	+17	+0.86	+0.97	+1.03	+145	+121	+189	+130	+256	+223	+302	+286	+94	+137
2011	69591	-0.2	+0.3	-2.7	+4.4	+40	+73	+96	+85	+14	+1.6	-4.0	+52	+4.2	-0.2	-0.3	+0.7	+1.5	+0.13	+17	+0.86	+0.98	+1.03	+149	+124	+195	+134	+263	+228	+310	+294	+98	+141
2012	74927	-0.2	+0.3	-2.9	+4.4	+42	+75	+98	+87	+14	+1.7	-4.2	+54	+4.5	-0.3	-0.4	+0.8	+1.5	+0.13	+17	+0.86	+0.98	+1.03	+154	+129	+201	+139	+271	+236	+320	+304	+103	+145
2013	77166	-0.1	+0.4	-3.0	+4.4	+43	+77	+101	+89	+15	+1.7	-4.2	+56	+4.7	-0.3	-0.5	+0.7	+1.6	+0.13	+17	+0.87	+0.97	+1.03	+159	+132	+208	+143	+278	+241	+329	+312	+107	+149
2014	76070	+0.2	+0.5	-3.2	+4.3	+43	+78	+102	+89	+15	+1.7	-4.3	+57	+4.8	-0.2	-0.3	+0.7	+1.8	+0.13	+17	+0.86	+0.97	+1.03	+164	+136	+214	+148	+285	+247	+338	+319	+112	+153
2015	77705	+0.2	+0.9	-3.3	+4.3	+44	+79	+104	+91	+15	+1.7	-4.3	+58	+5.0	-0.2	-0.4	+0.7	+1.8	+0.14	+18	+0.86	+0.97	+1.02	+167	+138	+218	+151	+290	+251	+344	+325	+114	+156
2016	78309	+0.3	+1.1	-3.5	+4.3	+45	+81	+106	+93	+16	+1.8	-4.4	+59	+5.1	-0.2	-0.4	+0.7	+1.8	+0.14	+18	+0.86	+0.98	+1.03	+171	+142	+223	+155	+298	+258	+353	+334	+119	+159
2017	80851	+0.6	+1.3	-3.6	+4.3	+46	+83	+109	+95	+16	+1.9	-4.5	+61	+5.4	-0.2	-0.4	+0.6	+1.8	+0.15	+18	+0.86	+0.98	+1.02	+176	+146	+230	+160	+306	+265	+363	+344	+124	+163
2018	81324	+0.9	+1.8	-3.8	+4.2	+47	+85	+111	+96	+16	+1.9	-4.5	+62	+5.5	-0.1	-0.4	+0.6	+1.9	+0.16	+18	+0.85	+0.97	+1.02	+181	+150	+237	+165	+314	+272	+373	+352	+129	+168
2019	81122	+1.0	+2.0	-3.8	+4.2	+48	+86	+112	+96	+16	+2.0	-4.3	+63	+5.7	-0.1	-0.4	+0.6	+2.0	+0.17	+19	+0.85	+0.97	+1.02	+183	+152	+241	+167	+317	+274	+378	+355	+131	+171
2020	79206	+1.2	+2.1	-4.1	+4.1	+49	+89	+115	+100	+17	+2.1	-4.5	+65	+5.9	-0.2	-0.4	+0.6	+2.1	+0.18	+19	+0.85	+0.96	+1.01	+190	+157	+250	+174	+329	+284	+392	+368	+138	+176
2021	90186	+1.5	+2.4	-4.3	+4.0	+50	+90	+116	+100	+17	+2.1	-4.6	+66	+6.1	-0.1	-0.4	+0.5	+2.2	+0.20	+20	+0.84	+0.95	+1.01	+195	+162	+257	+179	+336	+291	+401	+377	+143	+180
2022	96967	+1.7	+2.7	-4.4	+4.0	+51	+92	+119	+102	+17	+2.2	-4.6	+67	+6.4	-0.1	-0.3	+0.5	+2.3	+0.22	+21	+0.83	+0.94	+1.00	+201	+166	+264	+185	+345	+298	+412	+386	+149	+185

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