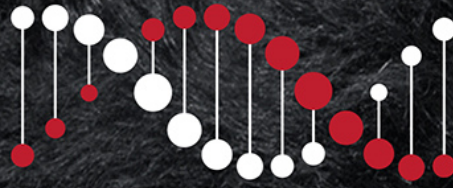


TACE



TransTasman Angus Cattle Evaluation

GENETIC BENCHMARKING REPORT

Angus Australia

DECEMBER 2023

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Genetic Progress Summary

2017 to 2022

Date: November 29,

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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	%	+1.3	+0.3
Calving Ease Daughters	%	+1.4	+0.3
Gestation Length	days	-0.8	-0.2
Birth Weight	kg	-0.4	-0.1
200 Day Growth	kg	+4.7	+0.9
400 Day Weight	kg	+8.7	+1.7
600 Day Weight	kg	+10.2	+2.0
Mature Cow Weight	kg	+7.4	+1.5
Milk	kg	+0.9	+0.2
Scrotal Size	cm	+0.3	+0.1
Days to Calving	days	-0.1	+0.0
Carcase Weight	kg	+6.4	+1.3
Carcase EMA	cm.sq	+1.1	+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	%	+2.8	+0.6
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)	\$	+25.3	+5.1
Domestic (\$D)	\$	+20.7	+4.1
Heavy Grain (\$GN)	\$	+35.5	+7.1
Heavy Grass(\$GS)	\$	+25.4	+5.1
Angus Breeding Low Feed Cost (\$A-L)	\$	+40.1	+8.0
Domestic Low Feed Cost (\$D-L)	\$	+34.3	+6.9
Heavy Grain Low Feed Cost (\$GN-L)	\$	+51.1	+10.2
Heavy Grass Low Feed Cost (\$GS-L)	\$	+44.6	+8.9
AngusPRO (\$PRO)	\$	+25.8	+5.2
Angus Terminal Sire (\$T)	\$	+22.4	+4.5

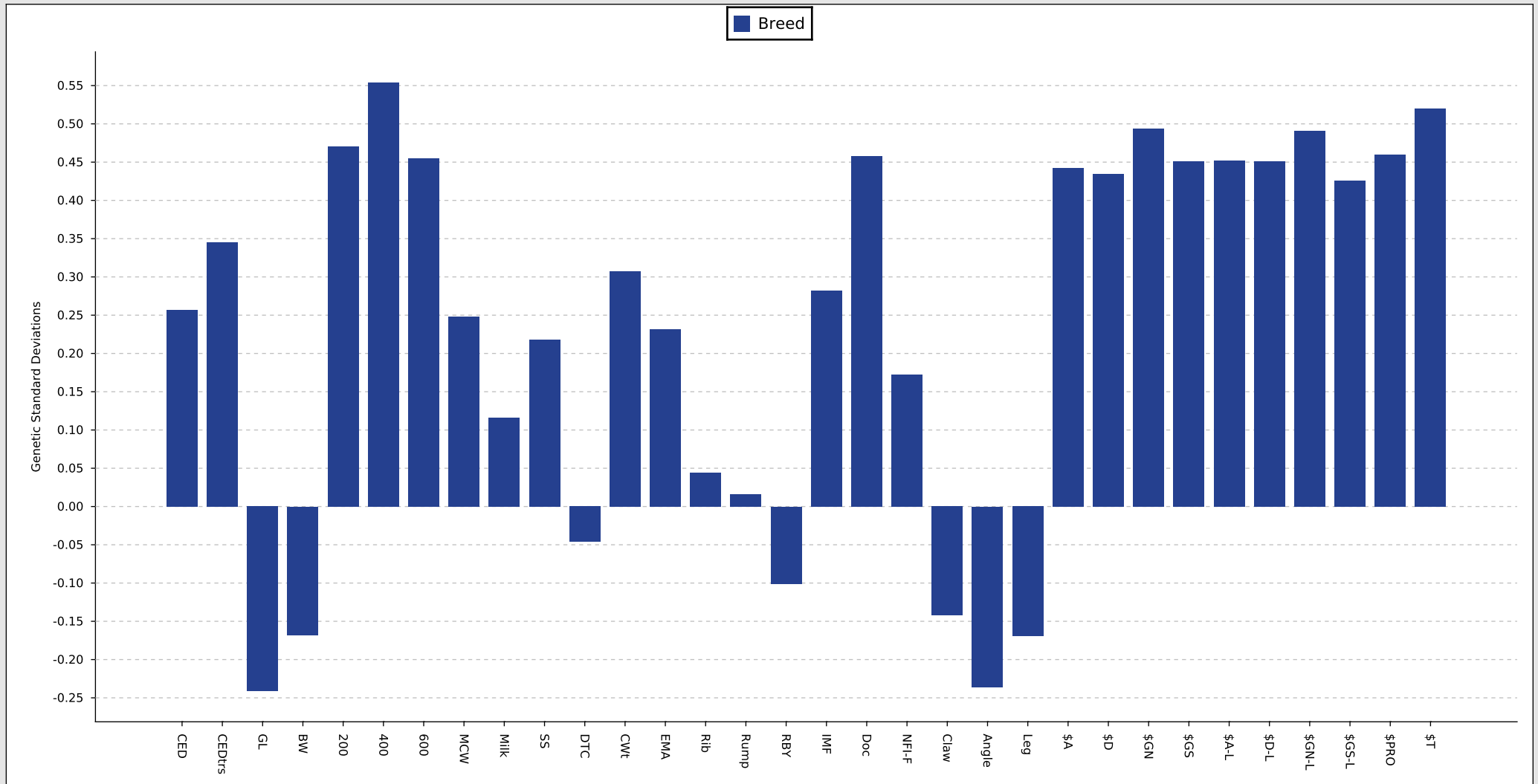
Genetic Progress Summary

Date: November 29,

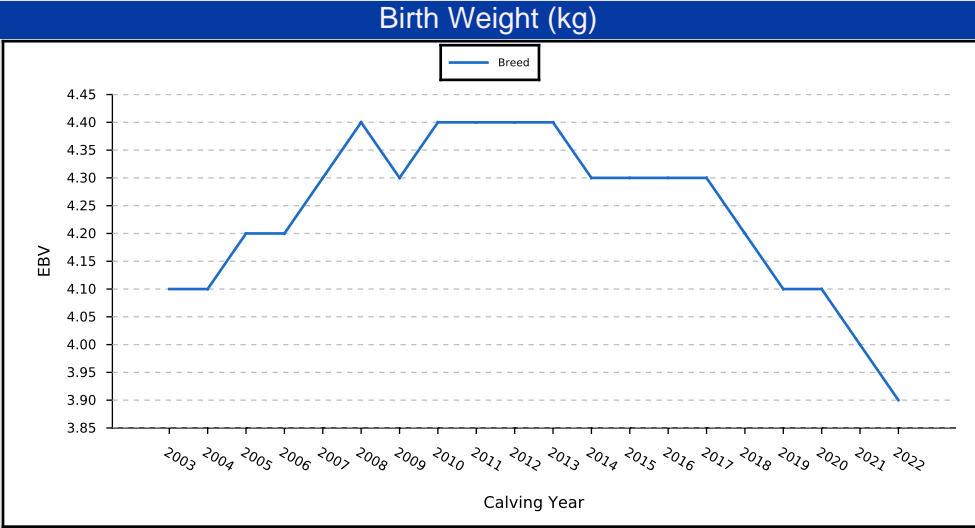
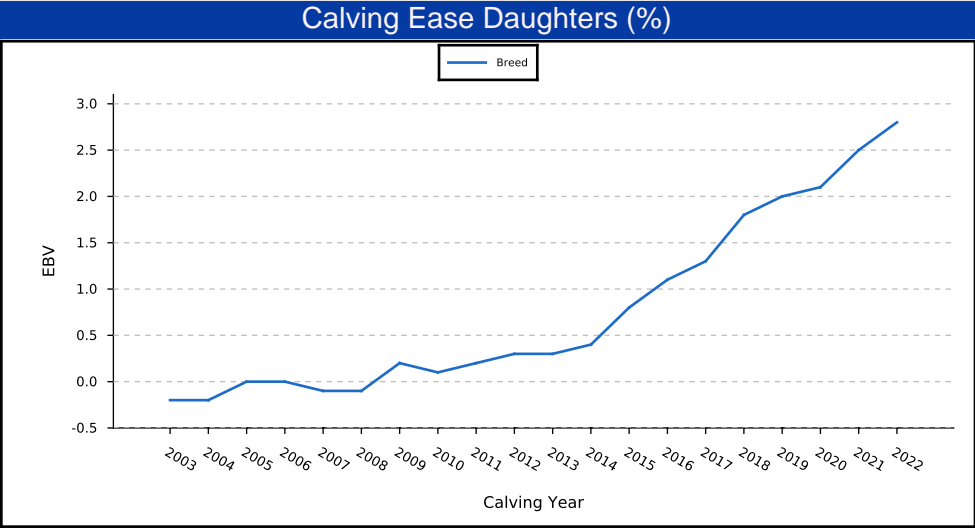
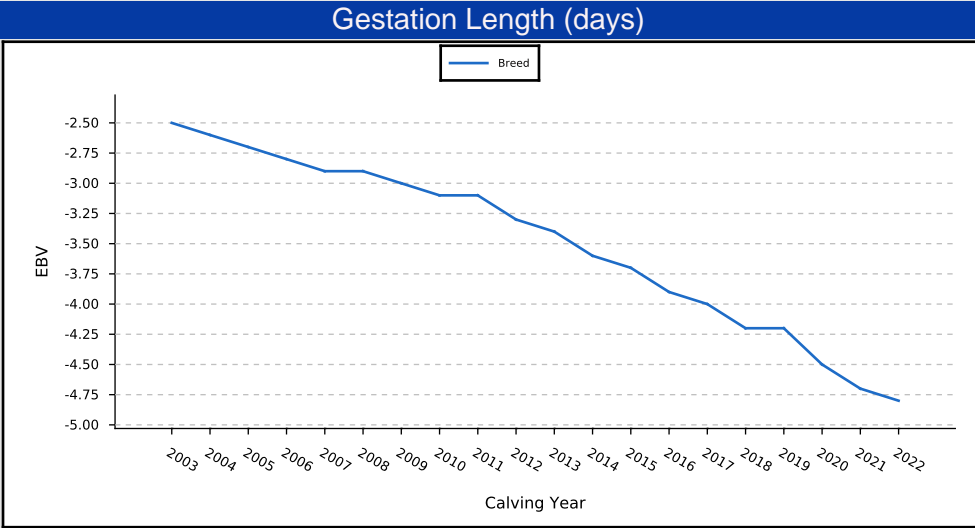
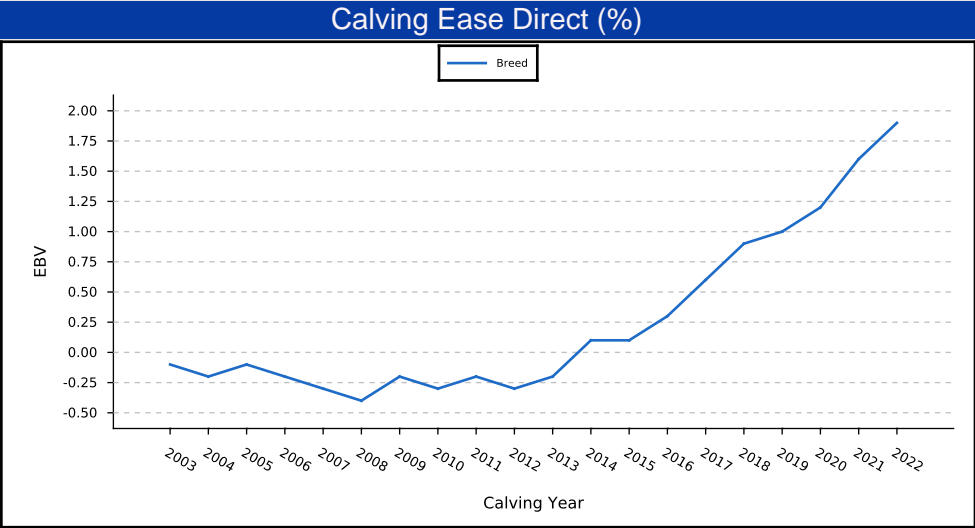
Relative Change in Each Trait - 2017 to 2022

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.

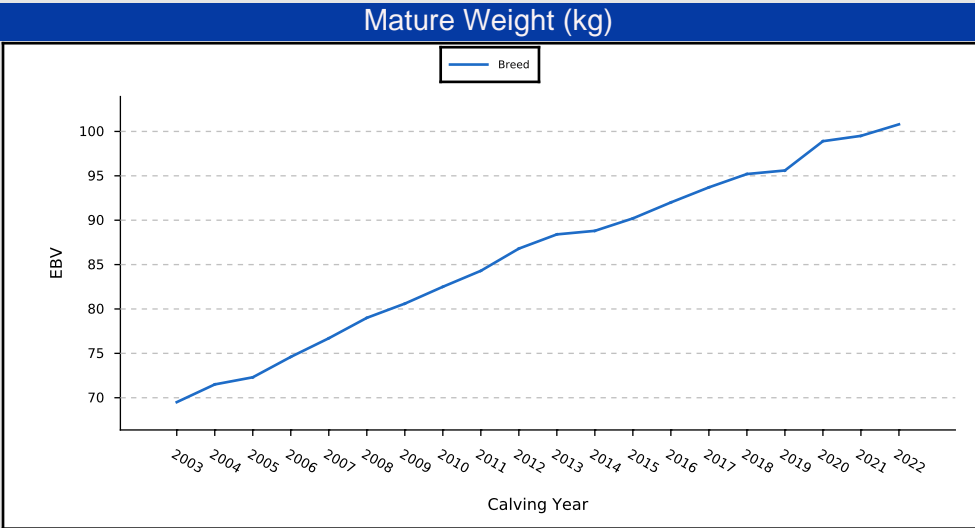
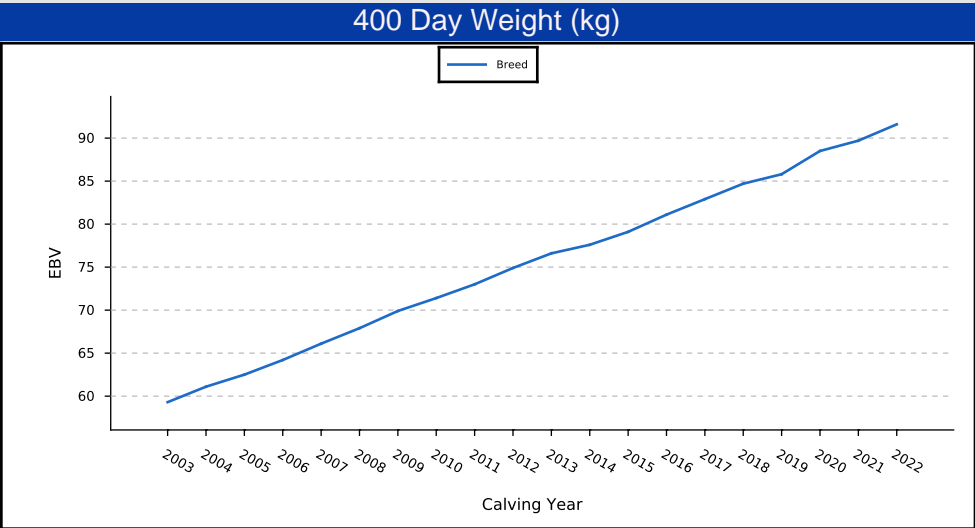
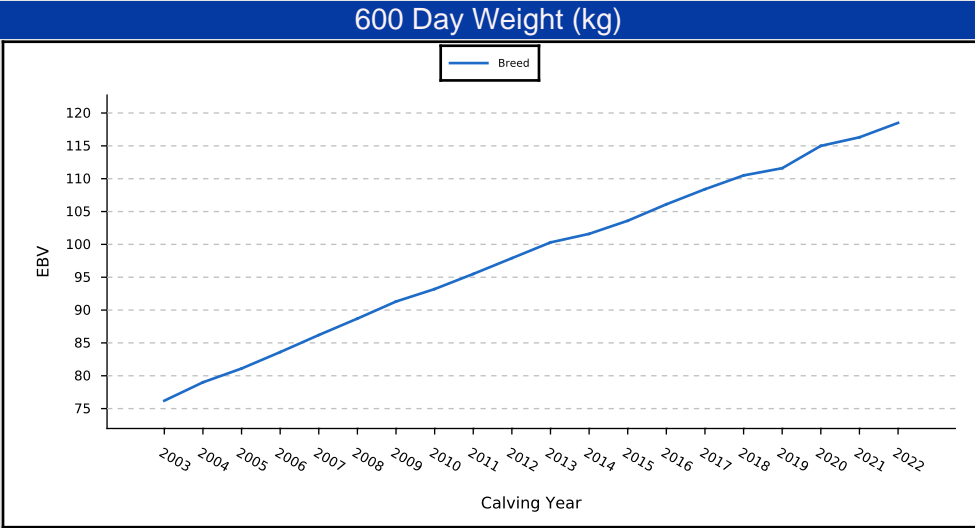
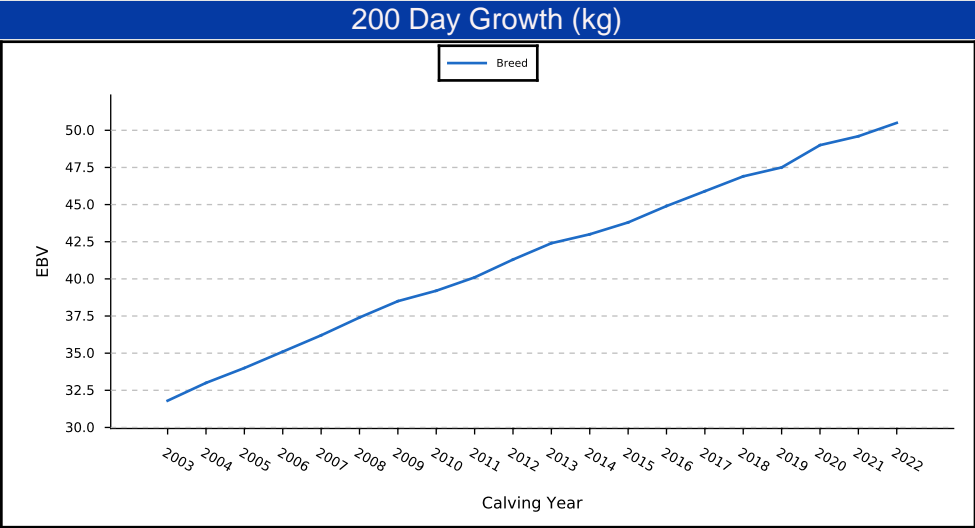


The reports below assess the change in the average EBVs of Angus seedstock animals born in each year for each respective trait.



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.

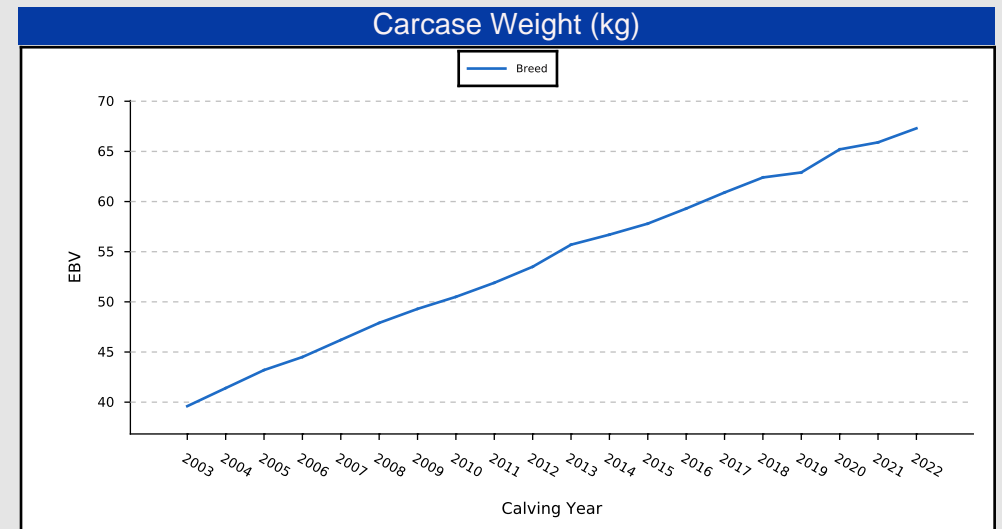
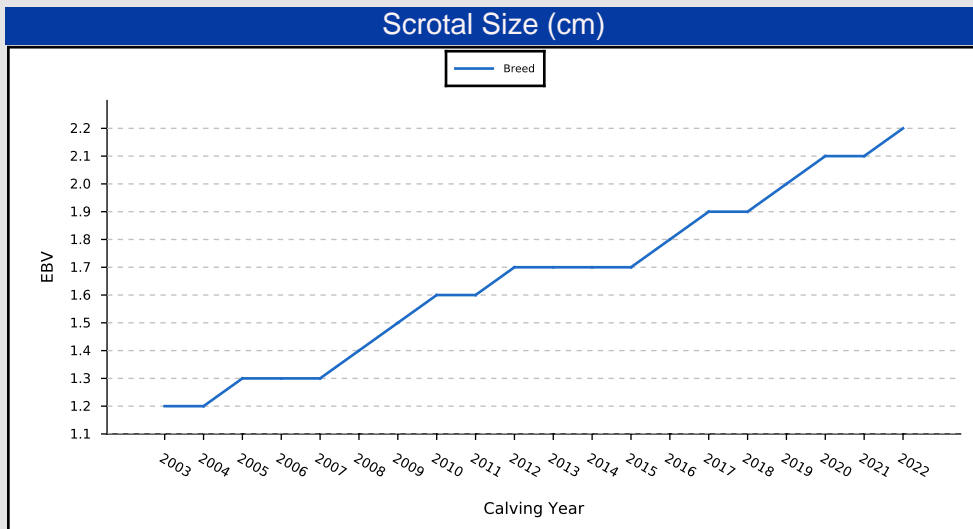
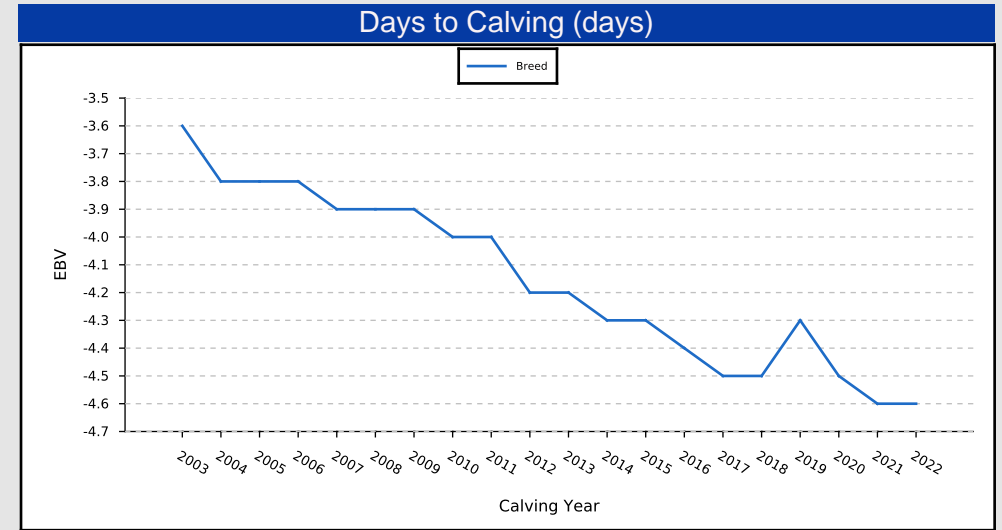
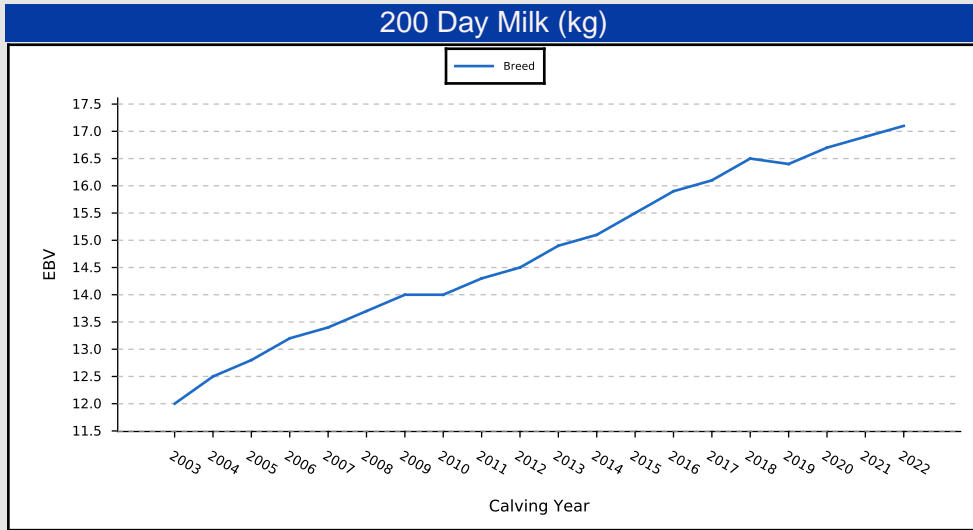


Genetic Progress By Trait

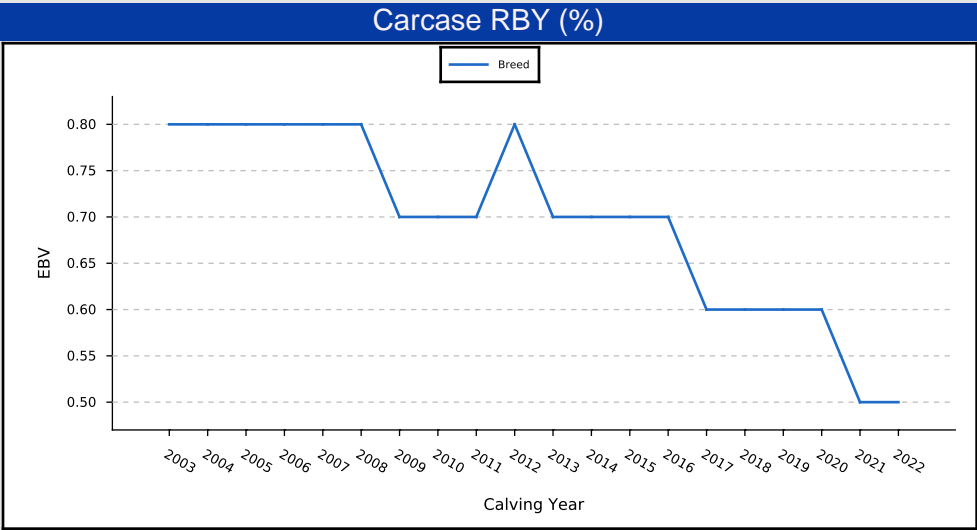
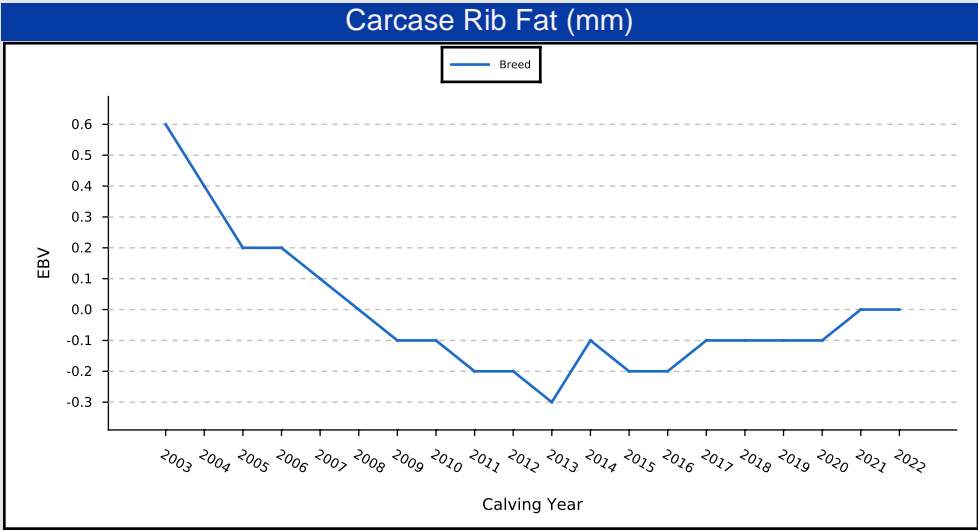
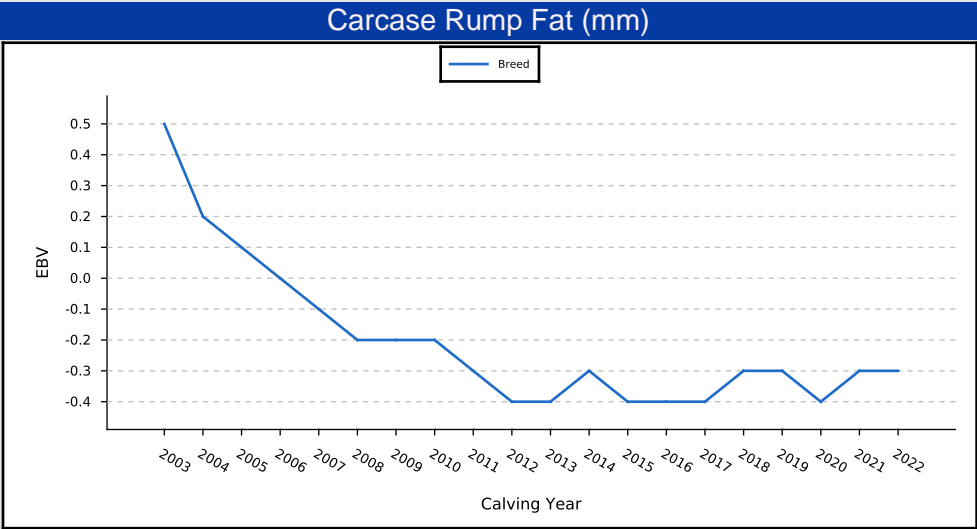
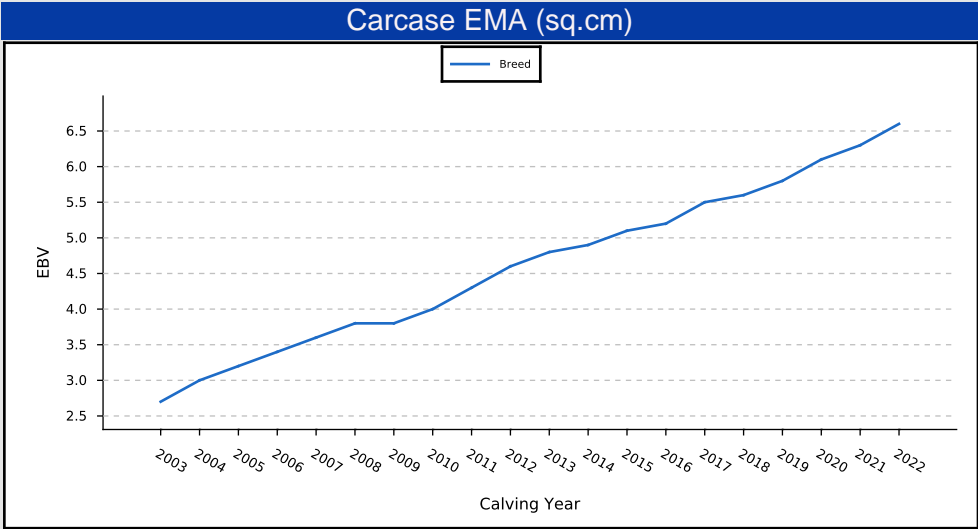
Date: November 29,

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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.

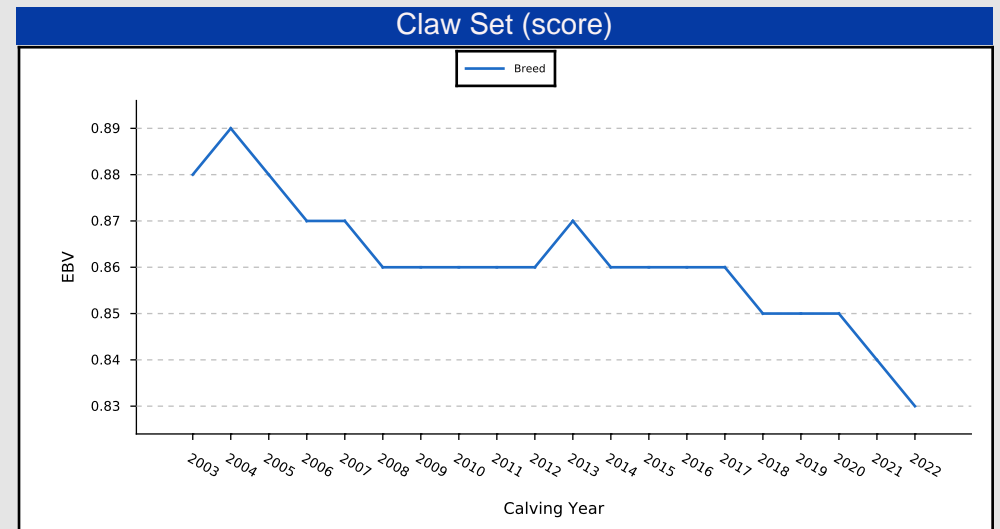
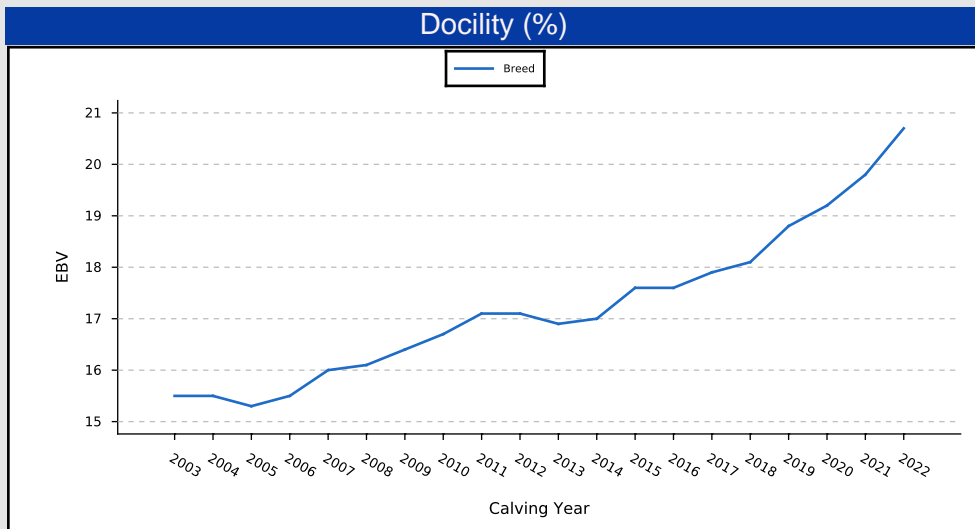
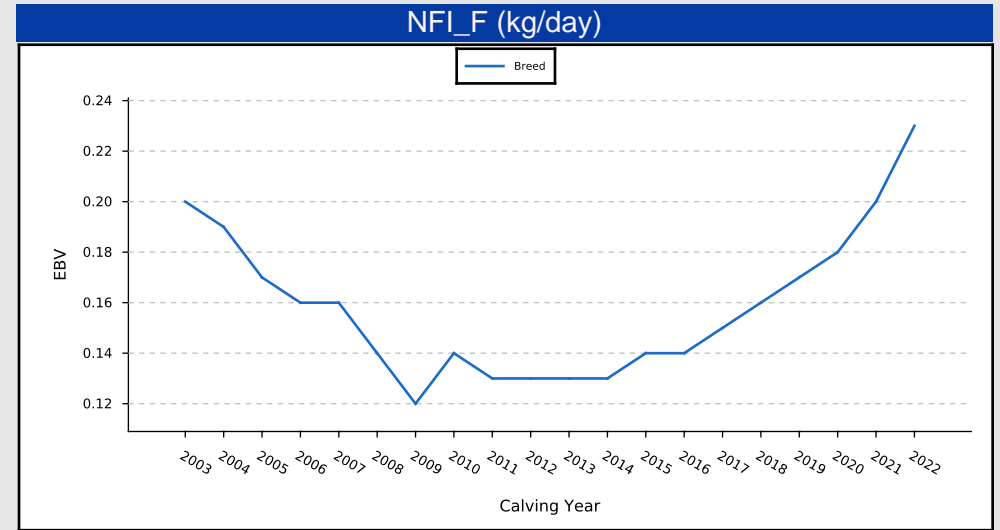
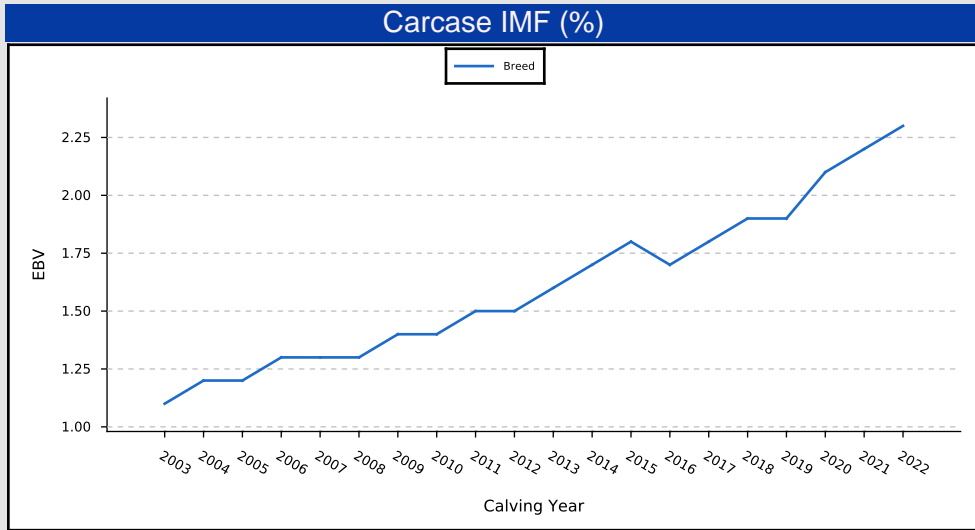


The reports below assess the change in the average EBVs of Angus seedstock animals born in each year for each respective trait.



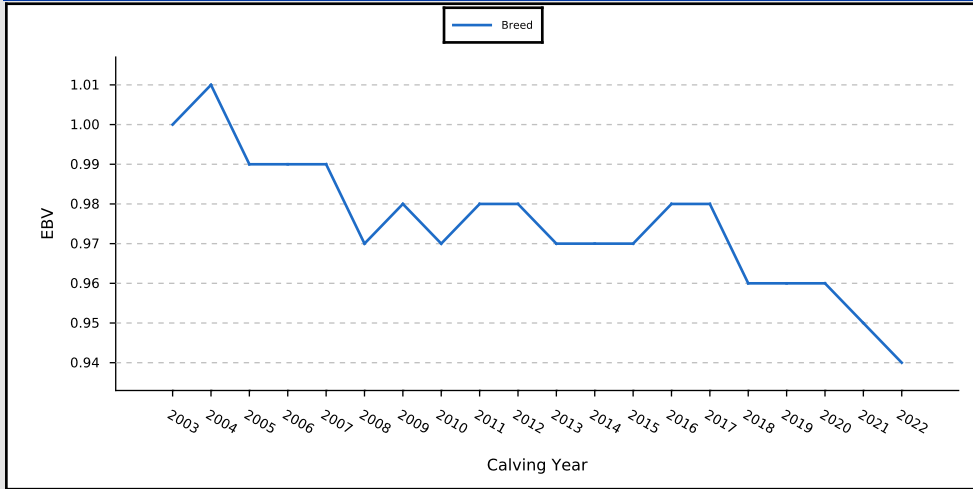
Genetic Progress By Trait

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

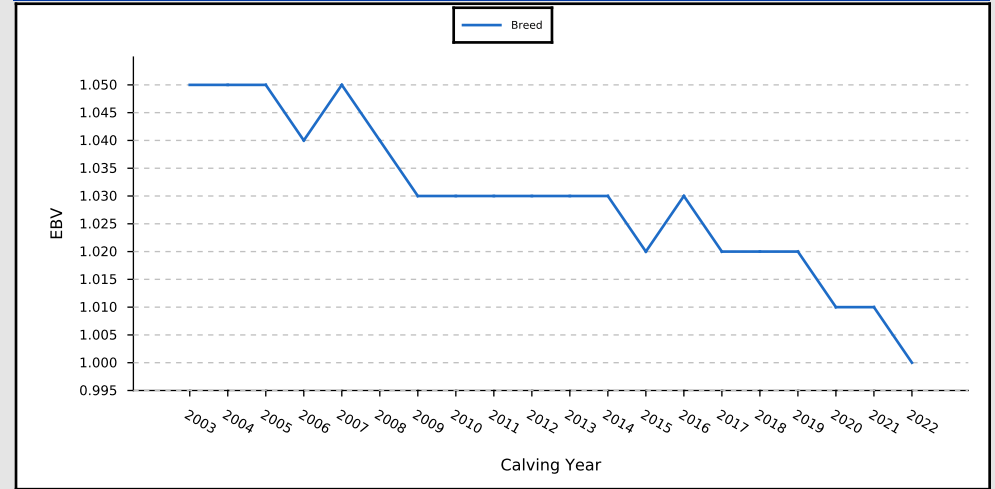


The reports below assess the change in the average EBVs of Angus seedstock animals born in each year for each respective trait.

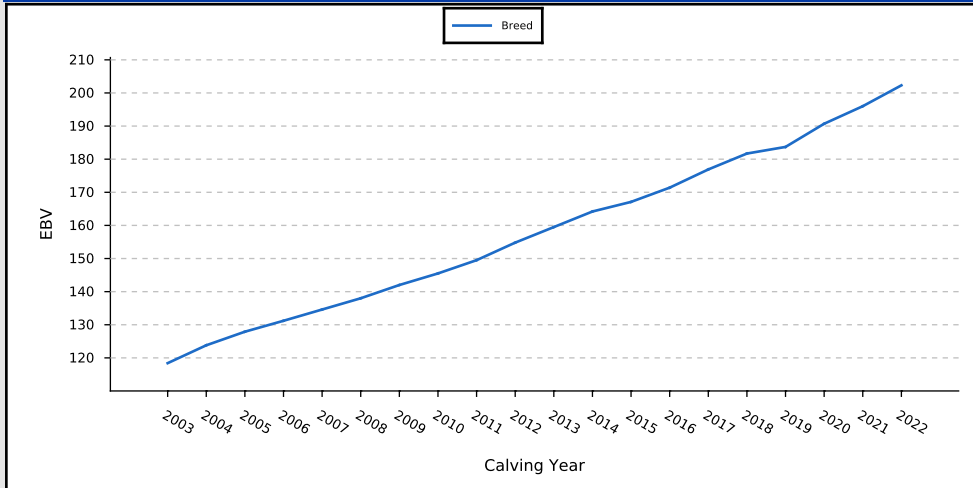
Foot Angle (score)



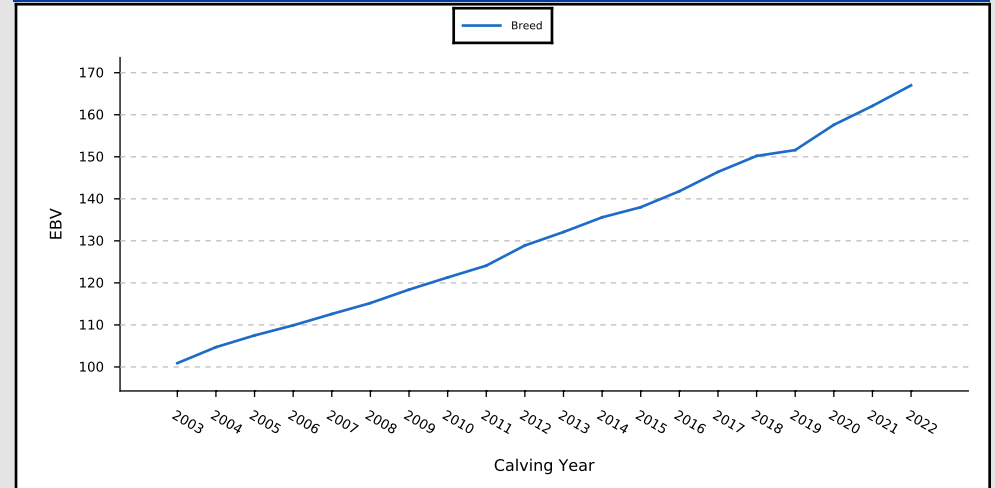
Leg Angle (score)



Angus Breeding (\$A)

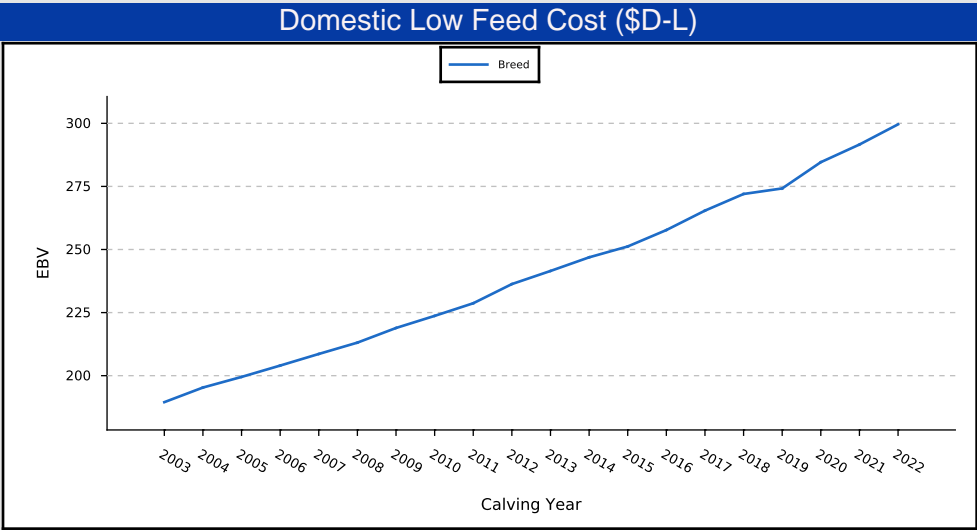
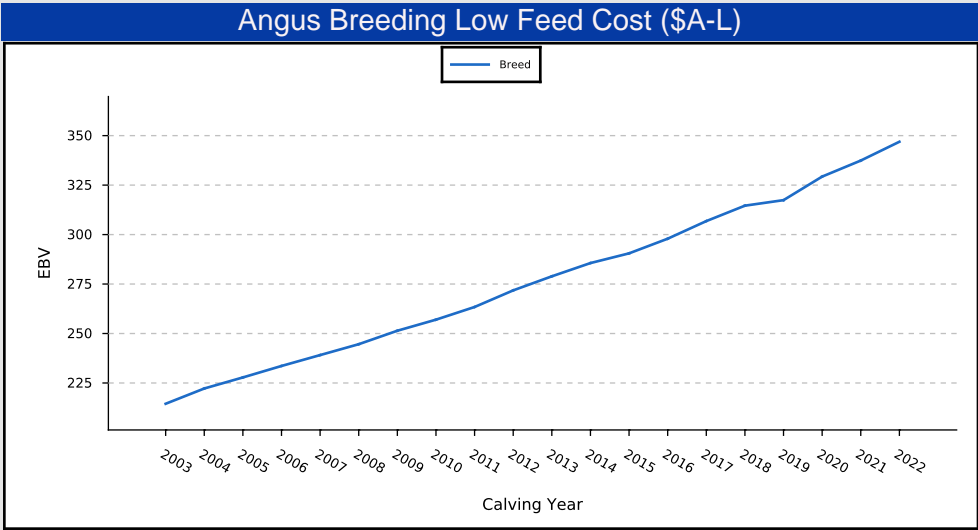
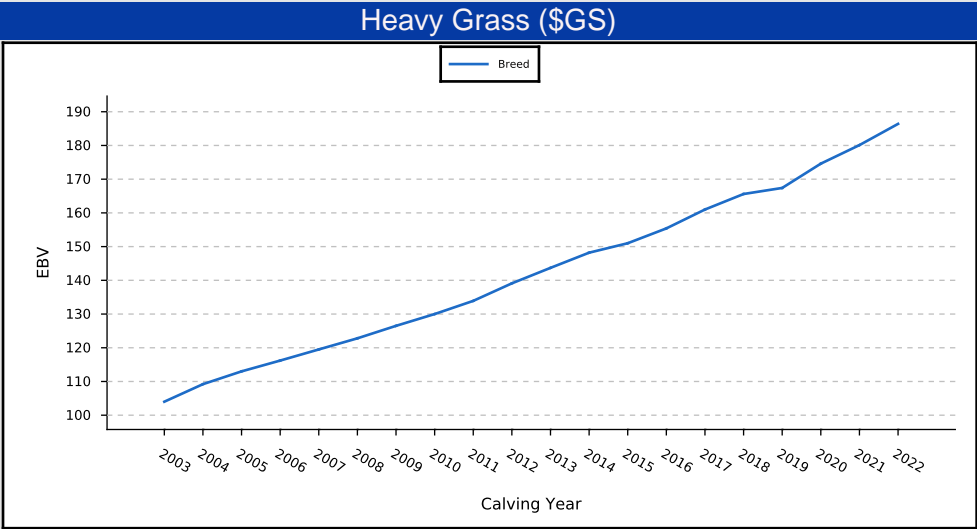
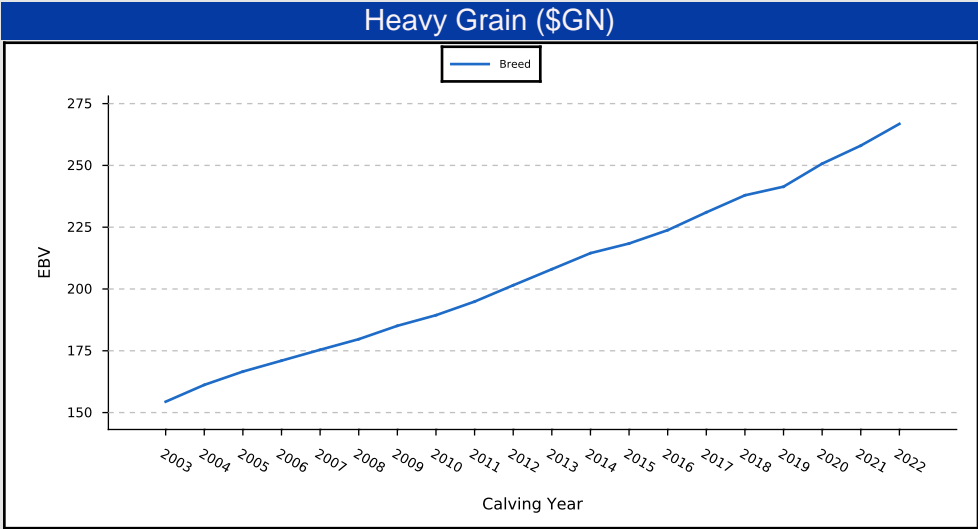


Domestic (\$D)



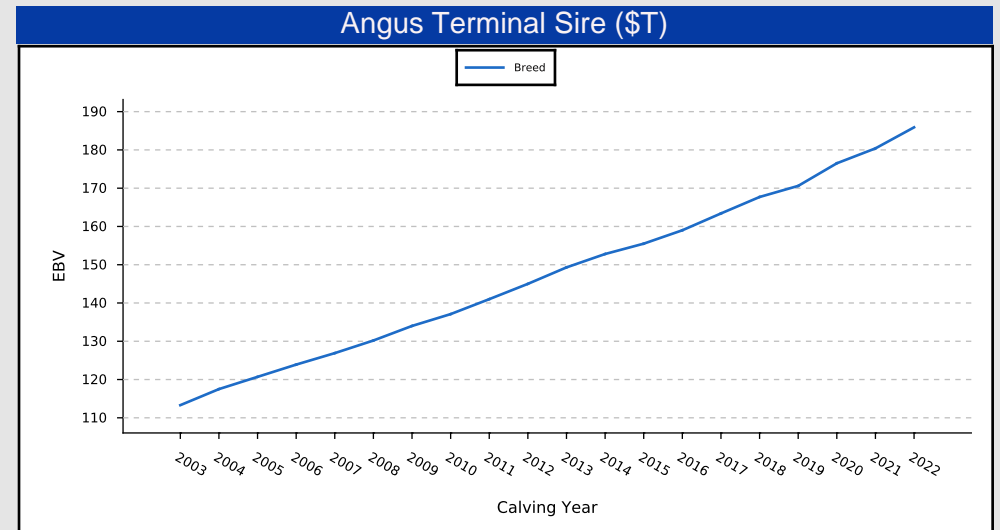
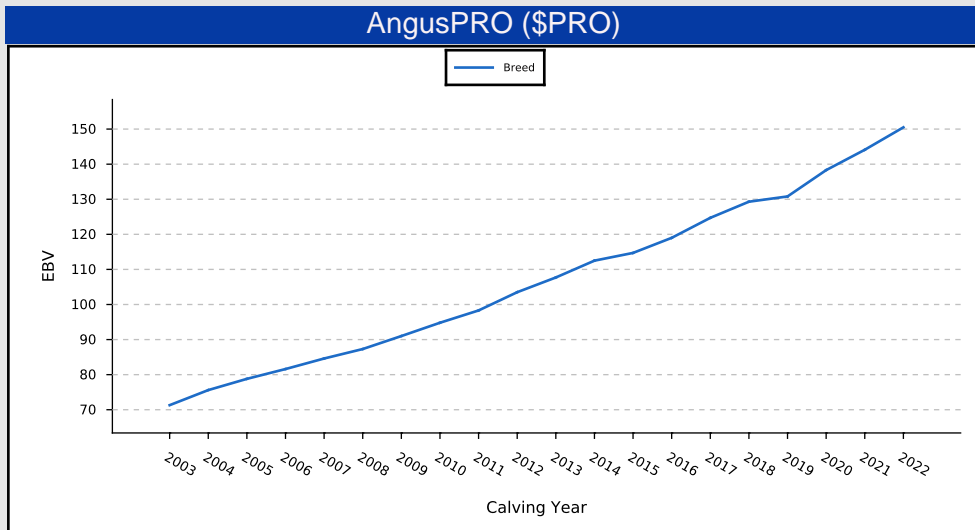
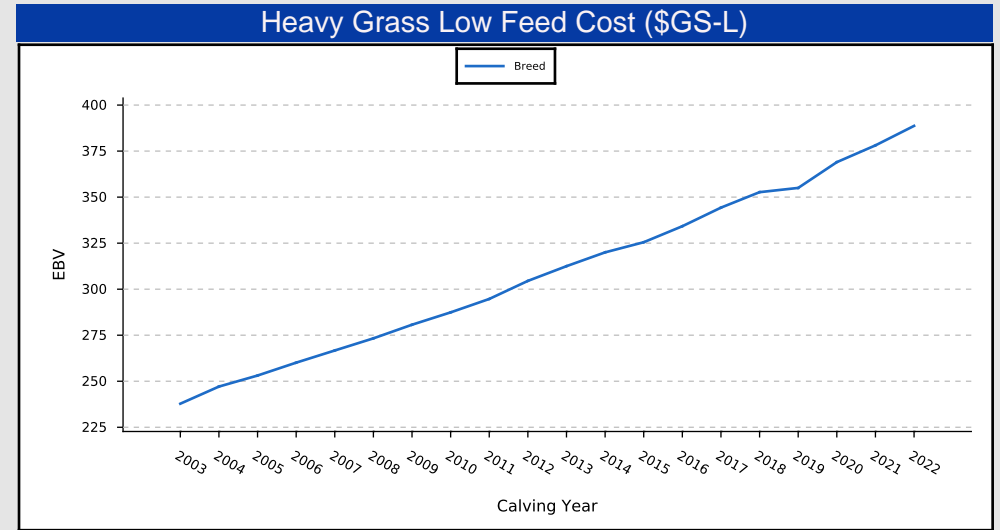
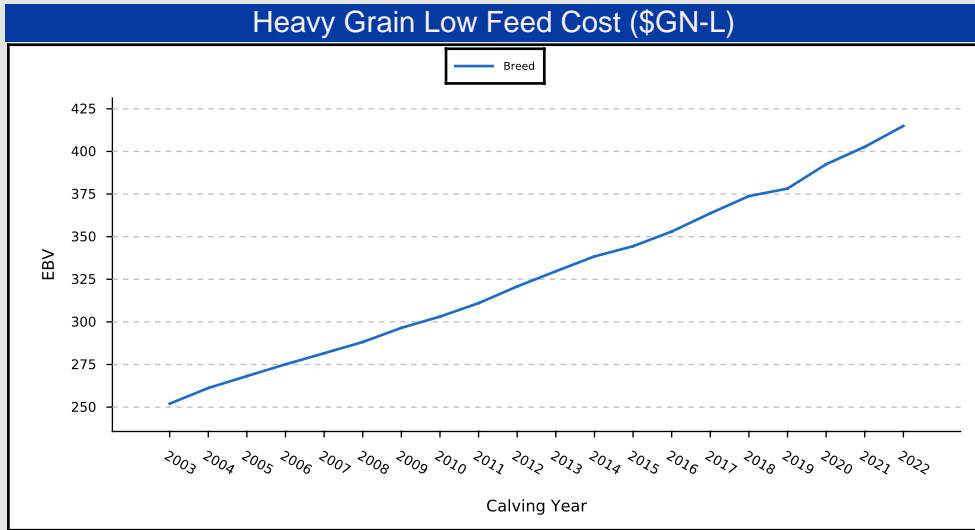
Genetic Progress By Trait

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



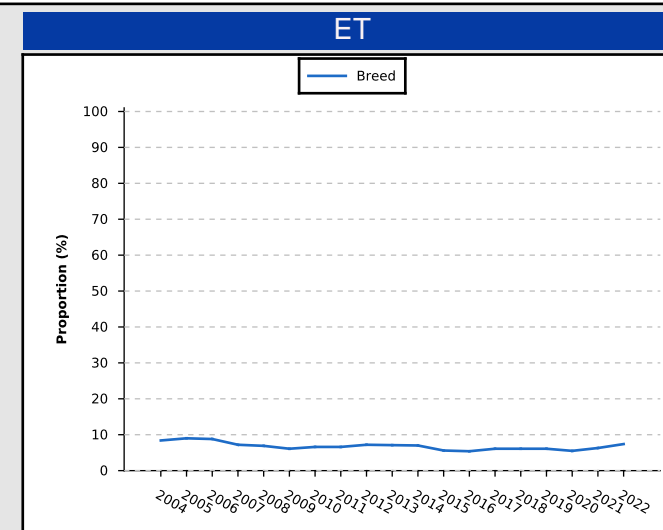
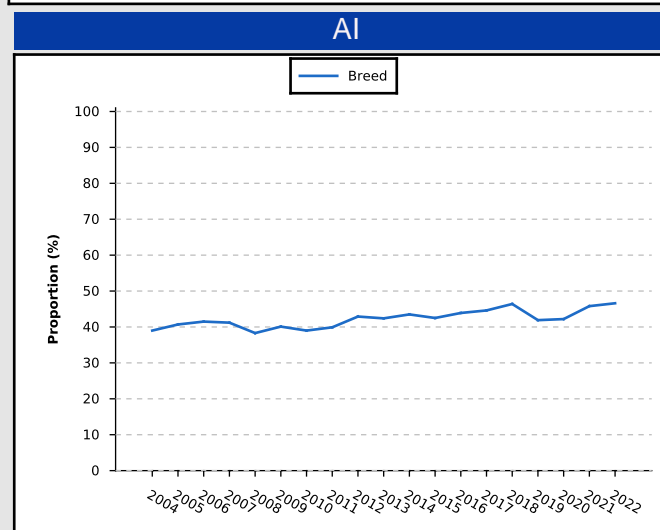
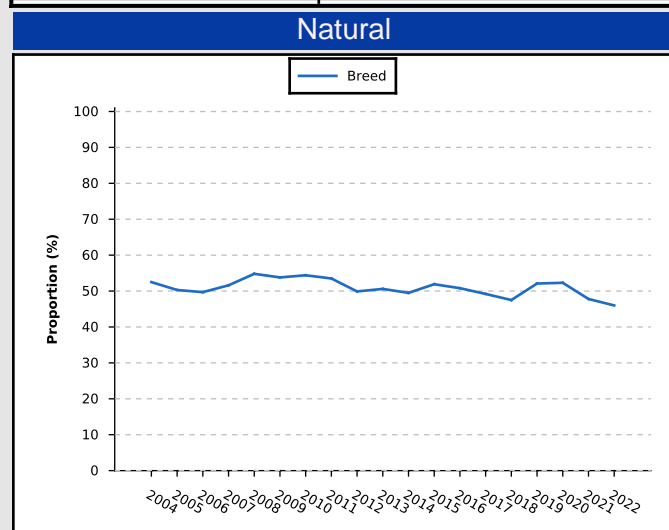
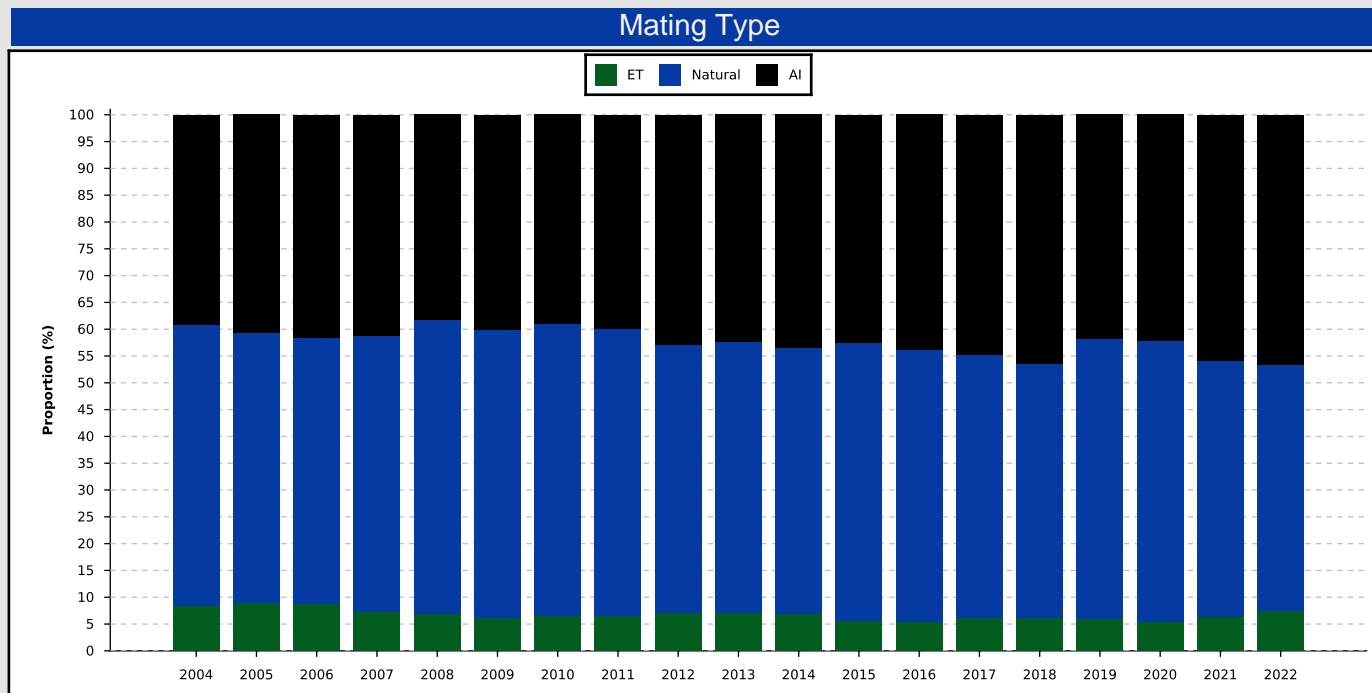
Genetic Progress By Trait

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



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	67045	35223	26170	5652
2005	69668	35038	28353	6277
2006	70730	35127	29345	6258
2007	67421	34801	27762	4858
2008	67824	37140	26001	4683
2009	66620	35861	26695	4064
2010	67287	36599	26266	4422
2011	73399	39242	29282	4875
2012	79466	39654	34098	5714
2013	81794	41360	34642	5792
2014	80644	39885	35117	5642
2015	81258	42168	34572	4518
2016	82234	41739	36093	4402
2017	85718	42184	38270	5264
2018	85897	40843	39853	5201
2019	85422	44476	35751	5195
2020	82500	43139	34852	4509
2021	94307	45109	43227	5971
2022	98091	45087	45755	7249



Generation Length

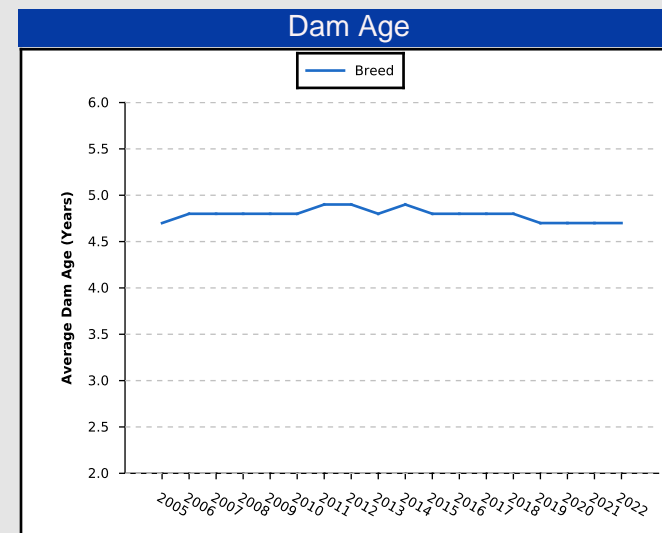
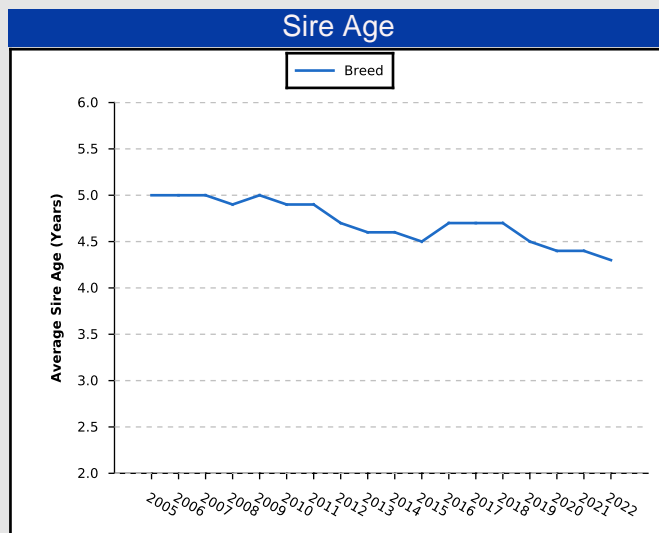
Average Sire and Dam Age By Year

Date: November 29,

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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	63452	5.0	3.6	6.3	7.9	4.7	4.6	4.5	6.3
2006	64555	5.0	3.7	6.2	7.7	4.8	4.7	4.4	6.4
2007	62613	5.0	3.7	6.3	7.6	4.8	4.7	4.4	6.4
2008	63345	4.9	3.7	6.4	7.8	4.8	4.8	4.4	6.7
2009	62868	5.0	3.7	6.5	7.9	4.8	4.7	4.5	6.9
2010	63360	4.9	3.7	6.1	7.6	4.8	4.8	4.5	6.5
2011	69566	4.9	3.7	6.1	7.6	4.9	4.9	4.5	6.8
2012	74910	4.7	3.7	5.6	6.7	4.9	4.9	4.5	6.7
2013	77147	4.6	3.7	5.4	6.4	4.8	4.8	4.5	6.8
2014	76046	4.6	3.7	5.4	6.7	4.9	4.9	4.5	6.9
2015	77642	4.5	3.7	5.3	6.7	4.8	4.8	4.5	6.9
2016	78233	4.7	3.8	5.5	6.7	4.8	4.9	4.5	6.8
2017	80793	4.7	3.8	5.5	6.6	4.8	4.8	4.5	6.8
2018	81220	4.7	3.7	5.5	6.5	4.8	4.8	4.5	6.9
2019	80978	4.5	3.6	5.3	6.8	4.7	4.7	4.4	6.5
2020	78946	4.4	3.6	5.2	6.0	4.7	4.7	4.3	6.8
2021	89561	4.4	3.5	5.2	6.5	4.7	4.7	4.3	6.9
2022	92064	4.3	3.5	4.9	5.7	4.7	4.7	4.3	6.7



Genetic Diversity

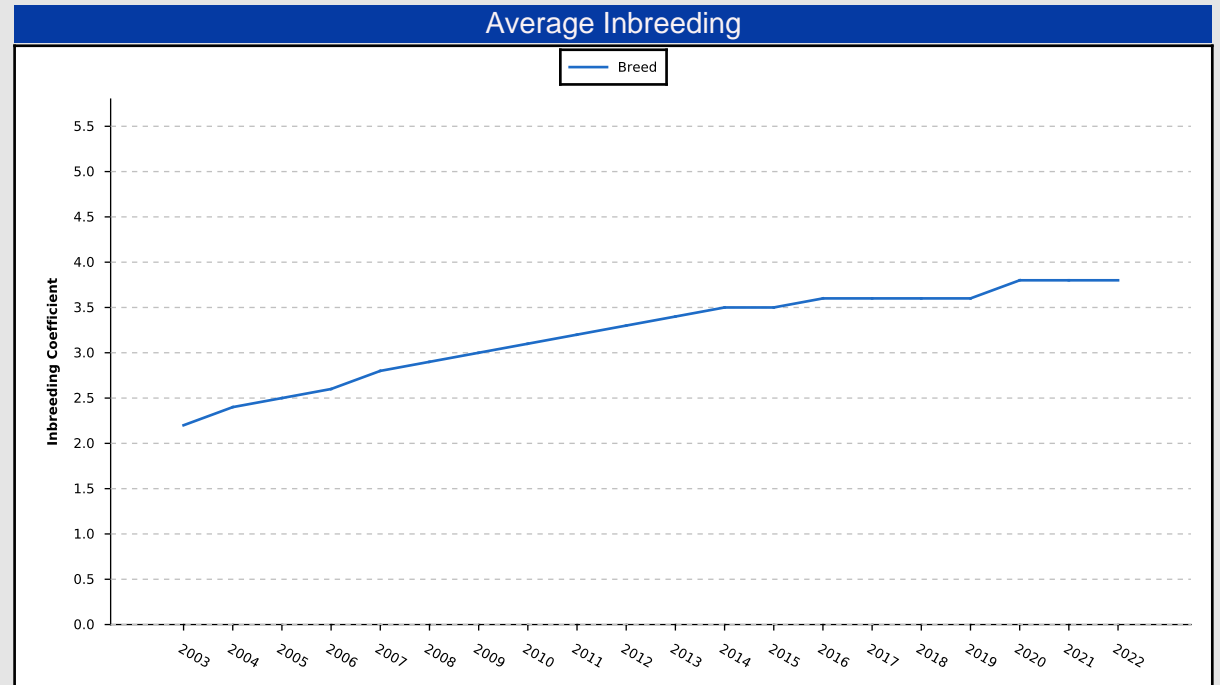
Average Inbreeding By Year

Date: November 29,

Page: 13

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

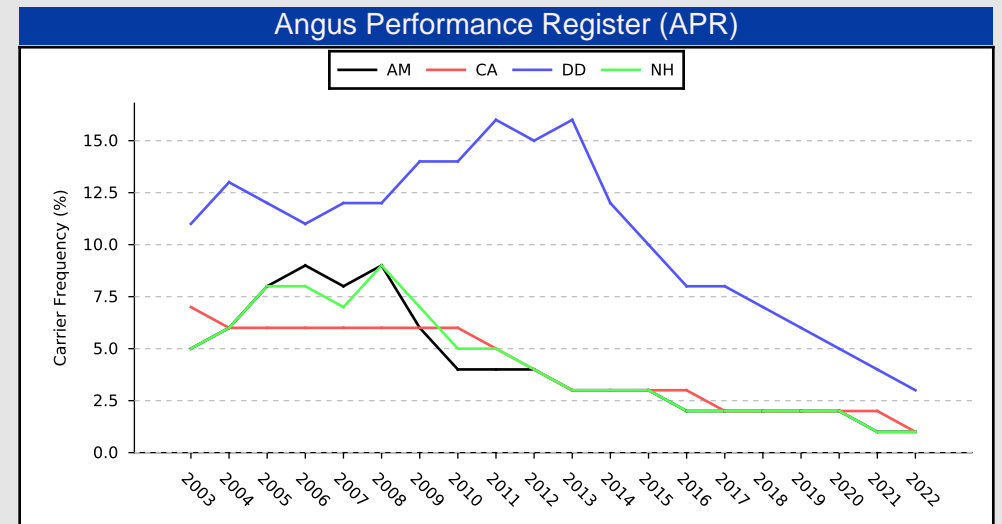
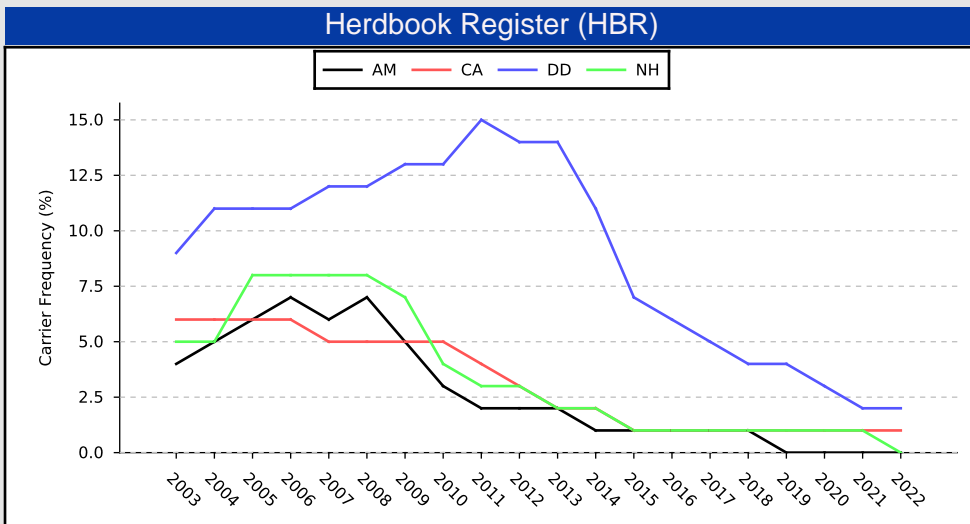
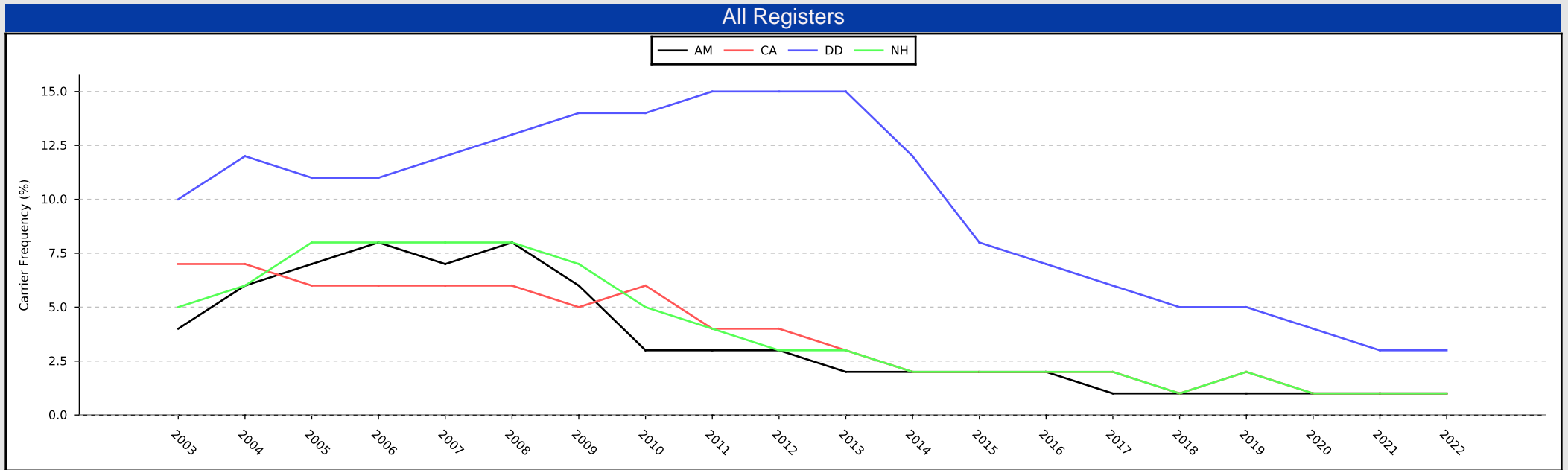
Calving Year	Animals	Inbreeding Coefficient (%)	
		Breed	
2003	59487	2.2	
2004	61483	2.4	
2005	63452	2.5	
2006	64555	2.6	
2007	62613	2.8	
2008	63345	2.9	
2009	62868	3.0	
2010	63360	3.1	
2011	69566	3.2	
2012	74910	3.3	
2013	77147	3.4	
2014	76046	3.5	
2015	77642	3.5	
2016	78233	3.6	
2017	80793	3.6	
2018	81220	3.6	
2019	80978	3.6	
2020	78946	3.8	
2021	89561	3.8	
2022	92064	3.8	



Genetic Conditions

Carrier Frequency By Register

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: November 29,

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

		Estimated Breeding Values																															
		Calv-Ease		Birth		Growth				Fert		Carcase				Feed		Temp	Structural			Selection Index											
Year	Count	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
2003	59487	-0.1	-0.2	-2.5	+4.1	+32	+59	+76	+70	+12	+1.2	-3.6	+40	+2.7	+0.6	+0.5	+0.8	+1.1	+0.20	+16	+0.88	+1.00	+1.05	+118	+101	+154	+104	+215	+190	+252	+238	+71	+113
2004	61483	-0.2	-0.2	-2.6	+4.1	+33	+61	+79	+72	+13	+1.2	-3.8	+41	+3.0	+0.4	+0.2	+0.8	+1.2	+0.19	+16	+0.89	+1.01	+1.05	+124	+105	+161	+109	+222	+195	+261	+247	+76	+118
2005	63452	-0.1	+0.0	-2.7	+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	+0.88	+0.99	+1.05	+128	+108	+167	+113	+228	+200	+268	+253	+79	+121
2006	64555	-0.2	+0.0	-2.8	+4.2	+35	+64	+84	+75	+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	+131	+110	+171	+116	+234	+204	+275	+260	+82	+124
2007	62613	-0.3	-0.1	-2.9	+4.3	+36	+66	+86	+77	+13	+1.3	-3.9	+46	+3.6	+0.1	-0.1	+0.8	+1.3	+0.16	+16	+0.87	+0.99	+1.05	+135	+113	+175	+120	+239	+209	+282	+267	+85	+127
2008	63345	-0.4	-0.1	-2.9	+4.4	+37	+68	+89	+79	+14	+1.4	-3.9	+48	+3.8	+0.0	-0.2	+0.8	+1.3	+0.14	+16	+0.86	+0.97	+1.04	+138	+115	+180	+123	+245	+213	+288	+273	+87	+130
2009	62868	-0.2	+0.2	-3.0	+4.3	+39	+70	+91	+81	+14	+1.5	-3.9	+49	+3.8	-0.1	-0.2	+0.7	+1.4	+0.12	+16	+0.86	+0.98	+1.03	+142	+118	+185	+127	+251	+219	+297	+281	+91	+134
2010	63360	-0.3	+0.1	-3.1	+4.4	+39	+71	+93	+83	+14	+1.6	-4.0	+51	+4.0	-0.1	-0.2	+0.7	+1.4	+0.14	+17	+0.86	+0.97	+1.03	+146	+121	+189	+130	+257	+224	+303	+287	+95	+137
2011	69566	-0.2	+0.2	-3.1	+4.4	+40	+73	+96	+84	+14	+1.6	-4.0	+52	+4.3	-0.2	-0.3	+0.7	+1.5	+0.13	+17	+0.86	+0.98	+1.03	+150	+124	+195	+134	+263	+229	+311	+295	+98	+141
2012	74910	-0.3	+0.3	-3.3	+4.4	+41	+75	+98	+87	+15	+1.7	-4.2	+54	+4.6	-0.2	-0.4	+0.8	+1.5	+0.13	+17	+0.86	+0.98	+1.03	+155	+129	+202	+139	+272	+236	+321	+305	+104	+145
2013	77147	-0.2	+0.3	-3.4	+4.4	+42	+77	+100	+88	+15	+1.7	-4.2	+56	+4.8	-0.3	-0.4	+0.7	+1.6	+0.13	+17	+0.87	+0.97	+1.03	+160	+132	+208	+144	+279	+242	+330	+313	+108	+149
2014	76046	+0.1	+0.4	-3.6	+4.3	+43	+78	+102	+89	+15	+1.7	-4.3	+57	+4.9	-0.1	-0.3	+0.7	+1.7	+0.13	+17	+0.86	+0.97	+1.03	+164	+136	+215	+148	+286	+247	+338	+320	+113	+153
2015	77642	+0.1	+0.8	-3.7	+4.3	+44	+79	+104	+90	+16	+1.7	-4.3	+58	+5.1	-0.2	-0.4	+0.7	+1.8	+0.14	+18	+0.86	+0.97	+1.02	+167	+138	+218	+151	+291	+251	+344	+326	+115	+156
2016	78233	+0.3	+1.1	-3.9	+4.3	+45	+81	+106	+92	+16	+1.8	-4.4	+59	+5.2	-0.2	-0.4	+0.7	+1.7	+0.14	+18	+0.86	+0.98	+1.03	+171	+142	+224	+155	+298	+258	+353	+334	+119	+159
2017	80793	+0.6	+1.3	-4.0	+4.3	+46	+83	+108	+94	+16	+1.9	-4.5	+61	+5.5	-0.1	-0.4	+0.6	+1.8	+0.15	+18	+0.86	+0.98	+1.02	+177	+146	+231	+161	+307	+265	+364	+344	+125	+163
2018	81220	+0.9	+1.8	-4.2	+4.2	+47	+85	+111	+95	+17	+1.9	-4.5	+62	+5.6	-0.1	-0.3	+0.6	+1.9	+0.16	+18	+0.85	+0.96	+1.02	+182	+150	+238	+166	+315	+272	+374	+353	+129	+168
2019	80978	+1.0	+2.0	-4.2	+4.1	+48	+86	+112	+96	+16	+2.0	-4.3	+63	+5.8	-0.1	-0.3	+0.6	+1.9	+0.17	+19	+0.85	+0.96	+1.02	+184	+152	+241	+167	+317	+274	+378	+355	+131	+171
2020	78946	+1.2	+2.1	-4.5	+4.1	+49	+89	+115	+99	+17	+2.1	-4.5	+65	+6.1	-0.1	-0.4	+0.6	+2.1	+0.18	+19	+0.85	+0.96	+1.01	+191	+158	+251	+175	+329	+285	+393	+369	+138	+177
2021	89561	+1.6	+2.5	-4.7	+4.0	+50	+90	+116	+100	+17	+2.1	-4.6	+66	+6.3	+0.0	-0.3	+0.5	+2.2	+0.20	+20	+0.84	+0.95	+1.01	+196	+162	+258	+180	+337	+292	+403	+378	+144	+180
2022	92064	+1.9	+2.8	-4.8	+3.9	+51	+92	+119	+101	+17	+2.2	-4.6	+67	+6.6	+0.0	-0.3	+0.5	+2.3	+0.23	+21	+0.83	+0.94	+1.00	+202	+167	+267	+186	+347	+300	+415	+389	+151	+186

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