

Functional Longevity Research EPD

02/12/2024

Registration No.	Name	Birth Yr	FL EPD	FL Acc	FL Prog
16541214	EXAR Upshot 0562B	2010	+1.02	.85	2,367
16551184	Sitz Tebow 11860	2010	+.92	.61	154
16559096	Sitz Top Seed 539X	2010	+.98	.60	183
16559105	Sitz Top Game 561X	2010	+1.06	.76	740
16562441	Sitz Final Statement 618X	2010	+.97	.66	300
16591455	Sitz JLS Game Day 9630	2010	+1.07	.59	238
16608684	Diamond in the Rough	2010	+.92	.64	331
16644974	C C A Uno 049	2010	+1.13	.65	266
16644975	Tombstone 050	2010	+1.02	.72	438
16645185	44 Conveyance 0X52	2010	+.99	.53	100
16647203	Stevenson Rockmount RX933	2010	+1.02	.69	404
16648841	Sinclair Fortunate Son	2010	+1.01	.67	299
16649387	Whitestone Black Arrow Z101	2010	+1.02	.55	119
16650219	Sinclair Boss	2010	+.86	.54	134
16651533	Riverbend Peerless 0016	2010	+1.03	.61	190
16656280	Byergo Andy 0115	2010	+.95	.54	90
16661690	S John Wayne	2010	+.99	.50	114
16678311	CCC Merritt 030	2010	+.81	.54	85
16687591	S A V Beacon 0008	2010	+.95	.57	147
16687592	S A V Platinum 0010	2010	+.95	.71	504
16687641	S A V Paramount 0115	2010	+1.09	.51	82
16687663	S A V Pursuit 0160	2010	+.92	.56	120
16687683	S A V Potential 0205	2010	+1.00	.62	214
16687685	S A V First Class 0207	2010	+.91	.58	165
16687737	S A V Harvester 0338	2010	+.87	.79	855
16690484	Granger Great Falls 053	2010	+1.05	.54	186
16692552	Plattemere Weigh Up K360	2010	+.83	.84	1,865
16701554	Buford Oklahoma X239	2010	+.93	.51	90
16703750	S A V Bullet 0473	2010	+1.06	.50	57
16705566	Marcys Scale Crusher	2010	+1.04	.50	99
16706161	Woodhill Lombardi	2010	+1.08	.50	58
16706194	Woodhill Daybreak U280-X20	2010	+1.06	.52	80
16710463	Koupals B&B Identity	2010	+1.08	.79	841
16710494	Koupals B&B Extra 0011	2010	+.87	.52	94
16711095	SydGen Googol	2010	+1.01	.54	65
16718300	R B Active Duty 010	2010	+.86	.76	664
16731737	Ellingson Scotsman 0010	2010	+1.00	.53	108
16734345	TC Vance 011	2010	+.81	.65	315

Breed average EPD for FL is +1.01. Therefore animals with values greater than breed average are a "breed improver" for that trait. Higher numbers are more desirable for the trait.

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Registration No.	Name	Birth Yr	FL EPD	FL Acc	FL Prog
16742733	PCC FSR Real McCoy 1918X	2010	+1.20	.50	209
16745888	Bushs Unbelievable423	2010	+1.02	.54	104
16748826	Jindra Double Vision	2010	+1.03	.78	951
16748950	Connealy Combination 0188	2010	+1.09	.66	326
16750531	Connealy Heat 0243	2010	+.98	.51	33
16750909	Poss Easy Impact 0119	2010	+.98	.58	48
16752262	Connealy Capitalist 028	2010	+.93	.86	2,485
16760354	Tehama Upward Y238	2010	+.97	.54	66
16761479	Connealy Confidence 0100	2010	+.97	.86	2,454
16761484	Connealy Irish 0204	2010	+1.11	.68	413
16761492	Connealy Consensus 578B	2010	+.90	.50	48
16761497	Connealy Counselor	2010	+.99	.75	714
16761727	Dameron First Impression	2010	+1.00	.56	213
16762739	baldrige Xpand x743	2010	+.94	.63	176
16764044	KM Broken Bow 002	2010	+.95	.77	1,345
16765282	R5 Monument 087	2010	+.90	.58	173
16767972	G A R Advance	2010	+.90	.58	203
16771888	K C F Bennett Homestead	2010	+1.08	.62	210
16772185	PA Safeguard 021	2010	+1.00	.77	815
16796888	KG Solution 0018	2010	+1.03	.75	726
16798964	V A R Upfront 0392	2010	+1.06	.56	112
16804536	GVC Settler 004X	2010	+.81	.52	112
16805884	PVF Insight 0129	2010	+1.01	.80	1,664
16822472	EF Authentic 0829	2010	+1.01	.61	183
16829413	SandPoint Butkus X797	2010	+.91	.69	358
16832604	EXAR Counsel 1016B	2011	+1.01	.51	81
16832612	EXAR Comancho 1022B	2011	+.95	.54	134
16838893	EXAR Declaration 1686B	2011	+1.07	.52	86
16852500	Sitz Superior 10971	2011	+.85	.55	98
16858775	Bruin Uproar 0070	2010	+.98	.66	325
16860273	Thomas Top Hand 0536	2010	+1.02	.62	227
16879074	Coleman Charlo 0256	2010	+1.00	.79	1,398
16880262	Coleman Manning 0299	2010	+1.09	.51	76
16882870	EXAR Combination 1750B	2011	+.96	.52	82
16884386	EXAR Significant 1769B	2011	+.92	.63	254
16890372	CFCC Black Jack 001	2010	+.94	.51	71
16895931	Connealy Consensus 014E	2010	+.96	.51	62
16896296	Connealy Uptown 098E	2010	+1.04	.65	278

Breed average EPD for FL is +1.01. Therefore animals with values greater than breed average are a “breed improver” for that trait. Higher numbers are more desirable for the trait.

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16898985	2 Bar Cash 1723	2010	+1.01	.52	33
16899059	Musgrave Boulder	2011	+.93	.60	225
16899430	BV Pinpoint 1045	2011	+1.06	.52	99
16905775	McKellar Now Look	2010	+.91	.52	106
16915162	EXAR Classen 1422B	2011	+.80	.54	131
16916267	Boyd Signature 1014	2011	+.86	.59	194
16916944	V A R Reserve 1111	2011	+1.00	.80	1,404
16924332	WR Journey-1X74	2010	+1.01	.79	1,558
16925771	Quaker Hill Rampage 0A36	2010	+.95	.85	3,332
16933585	G A R Daylight	2010	+.90	.57	96
16933958	G A R Sunrise	2010	+1.05	.77	1,320
16944751	GDAR Heisman 1705	2011	+1.04	.51	104
16947281	Sitz 4 Aces 4551	2011	+.88	.53	114
16957718	Vermilion Sirloin	2011	+.83	.60	169
16969554	Connealy Gold Rush 026E	2010	+1.02	.62	162
16969555	Connealy Earnan 076E	2010	+1.00	.80	953
16972676	T C A Visionary 158	2011	+1.01	.57	146
16980412	EXAR Blue Chip 1877B	2011	+.84	.59	202
16981588	PA Full Power 1208	2011	+1.00	.77	834
16983331	MAR Innovation 251	2011	+.99	.76	1,098
16984170	R B Tour Of Duty 177	2011	+1.00	.86	3,170
16984187	R B Resolute 1844	2011	+.86	.51	108
16992096	Vision Unanimous 1418	2011	+.98	.80	1,209
16997078	Riverbend None Better Y095	2011	+.92	.56	140
17001224	Riverbend SF Montana 104	2010	+.95	.53	86
17005549	OCC Ultimate Answer 118	2011	+.96	.54	131
17005710	S A V Radiance 0801	2010	+.88	.54	97
17007891	S Whitlock 179	2011	+.89	.74	1,117
17007979	S McCoy 124	2011	+1.05	.50	103
17007985	S Titlest 1145	2011	+1.09	.59	228
17011364	K Bar D Joe Canada 18Y	2011	+.99	.61	218
17012433	FF Dempsey Y11	2011	+.65	.53	149
17013539	CB Block Party 156	2011	+.89	.59	180
17016597	S A V Resource 1441	2011	+.99	.88	4,944
17016630	S A V Angus Valley 1867	2011	+1.02	.80	1,267
17028951	Connealy Cavalry 1149	2011	+.94	.71	370
17028963	Connealy Black Granite	2011	+1.00	.87	3,543
17028989	Connealy KW 1664 Consensus	2011	+.95	.52	66

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17029809	Connealy Front & Center	2011	+1.05	.59	224
17030115	SCC First-N-Goal GAF 114	2011	+.81	.50	111
17031216	Connealy Sandhills 122	2011	+.96	.53	104
17031279	Connealy Guinness	2011	+.94	.67	519
17031441	Connealy United 1116	2011	+.96	.55	86
17031465	Connealy Comrade 1385	2011	+1.00	.81	1,601
17032619	Connealy Stingray 9618	2011	+1.06	.60	223
17032793	Mohnen Wolf Creek 1871	2011	+.93	.50	85
17038724	Basin Payweight 1682	2011	+.85	.86	3,753
17041452	V D A R Cedar Wind 8111	2011	+1.20	.67	374
17044981	Bushs Sure Deal 33	2011	+1.01	.52	86
17049149	A A R Ten Gauge 1501	2011	+.87	.59	187
17057160	G A R Missouri 5761	2011	+.89	.50	58
17057287	G A R Anticipation	2011	+.96	.63	273
17065105	Schiefelbein Effective 61	2011	+1.08	.64	346
17065973	Benfield Reality 6211	2011	+.97	.50	85
17072305	Ellingson Plateau 1155	2011	+1.04	.55	52
17074451	Baldrige Willie Y34	2011	+.92	.60	136
17076135	MCR Horizon 081	2011	+.97	.52	119
17082311	EF Commando 1366	2011	+.95	.77	1,014
17083470	WMR Infinity 141	2011	+1.12	.67	419
17091363	Thomas Up River 1614	2011	+.96	.57	183
17094445	Nichols Final Answer Y34	2011	+.95	.54	118
17095762	Musgrave Foundation	2011	+.97	.64	251
17102085	Mogck Bullseye	2011	+1.01	.80	942
17109321	Ideal 1281 of 6469 Jilt	2011	+.91	.58	184
17109523	Ideal 1168 of 9814 Lady	2011	+.98	.54	137
17115754	REM Natural 1812	2011	+.85	.51	97
17121627	K C F Bennett Consent Y75	2011	+.99	.58	106
17131890	Rito 12E7 of 5F56 Rito 5M2	2011	+.87	.62	220
17138110	HARB Stur-D 191 JH	2011	+1.05	.52	65
17145326	Barstow Cash	2011	+.89	.83	1,282
17160560	EXAR Denver 2002B	2012	+.99	.83	1,801
17160668	EXAR Powerhouse 2077B	2012	+1.01	.59	136
17160844	EXAR Slap Shot 2504B	2012	+.97	.54	91
17171587	V A R Generation 2100	2012	+.99	.82	1,534
17175957	Sitz Dollar Up 489Z	2012	+.99	.62	291
17176063	Sitz Lightning 659Z	2012	+1.21	.59	170

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17179073	Sitz Longevity 556Z	2012	+1.01	.59	152
17179119	Sitz Investment 660Z	2012	+1.03	.79	1,042
17217486	B3R Pioneer Wave Y409	2011	+1.03	.51	90
17228402	GDAR Leupold 298	2012	+1.00	.66	413
17234737	HF Rebel 53Y	2011	+1.06	.63	212
17236055	SydGen Black Pearl 2006	2012	+.96	.62	325
17246314	Still in the Rough 201	2012	+.80	.57	189
17250190	Mohnen South Dakota 402	2012	+.94	.69	504
17255860	Coleman Knight 209	2011	+1.03	.58	198
17257723	Musgrave Invision	2012	+.96	.56	115
17259012	K C F Bennett Fortress	2011	+.93	.78	1,784
17262374	JMB Traction 292	2012	+.92	.79	1,381
17262835	V A R Discovery 2240	2012	+.94	.85	2,859
17264322	Yon Future Force Z77	2011	+1.03	.60	184
17264774	Musgrave Aviator	2012	+.99	.75	928
17286792	Mohnen Long Haul 502	2012	+1.07	.59	172
17287387	S S Niagara Z29	2012	+.96	.74	1,732
17292558	Mohnen Substantial 272	2012	+1.02	.67	403
17297654	CW 7783 Passport 322	2012	+1.04	.50	56
17298481	S Chisum 255	2012	+.93	.68	620
17302232	Connealy Union 215X	2012	+.97	.58	181
17302235	Connealy Greeley	2012	+.94	.64	229
17302304	Connealy Courage 25L	2012	+1.04	.74	709
17302340	Connealy Balance	2012	+1.01	.52	94
17304082	Connealy Spur	2012	+1.14	.74	928
17304232	Connealy Western Cut	2012	+1.03	.65	274
17305776	Riverbend SF Cameron 223	2011	+.94	.53	81
17307074	Deer Valley All In	2012	+1.00	.84	2,094
17309098	Connealy Beef Bank	2012	+.98	.50	45
17309718	SITZ Logic Y46	2011	+.95	.66	329
17310103	Varilek Product 2010 04	2012	+.98	.50	31
17314326	Koupal Advance 28	2012	+1.12	.69	409
17314528	Connealy Arsenal 2174	2012	+.90	.71	559
17314910	Baldrige Download Z013	2012	+.79	.59	185
17314954	Baldrige Jennings Z064	2012	+.98	.64	286
17314957	Baldrige Territory Z068	2012	+.95	.50	69
17315700	Mead Final Choice L239	2012	+1.01	.52	101
17318795	S A V International 2020	2012	+.84	.76	938

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Registration No.	Name	Birth Yr	FL EPD	FL Acc	FL Prog
17318919	S A V West River 2066	2012	+1.00	.52	90
17318928	S A V Registry 2831	2012	+.98	.70	409
17318946	S A V Hesston 2217	2012	+.96	.64	297
17320042	S A V Final Answer 0035 II	2011	+.98	.67	28
17322011	Ellingson Dominance 2079	2012	+1.03	.50	103
17322785	Koupals B&B Fort Knox 2077	2012	+.85	.52	105
17326601	PA Valor 201	2011	+.98	.62	300
17328461	G A R Sure Fire	2012	+.94	.80	2,187
17331233	CTS Remedy 1T01	2011	+.97	.72	820
17338585	Mc Cumber Tremendous 2008	2012	+1.05	.52	82
17351674	Mill Bar Hickok 7242	2012	+1.00	.72	1,122
17354047	G A R Scale House	2012	+.99	.52	182
17354145	G A R Momentum	2012	+.95	.73	603
17354178	G A R Early Bird	2012	+.90	.54	106
17362475	Schiefelbein Protocol 392	2012	+1.18	.53	87
17365830	Jindra 3rd Dimension	2012	+.72	.53	100
17367599	Prairie Pride Next Step 2036	2012	+.98	.65	391
17379591	EATHINGTON SUB-ZERO	2012	+.97	.58	219
17383988	Poss Element 215	2012	+1.12	.62	241
17399875	KG High Regard 2073	2012	+.96	.64	317
17417464	Ponca Creek Pepper	2012	+.88	.54	127
17418539	PA Fortitude 2500	2011	+1.01	.72	614
17420717	M A F Tanker 23	2012	+.90	.55	178
17425053	Rathbun Accelerate Z523	2012	+1.10	.50	79
17427037	Hilltop Open Range 2279	2012	+.93	.51	121
17434364	EXAR Stetson 3704B	2013	+.88	.59	206
17434366	EXAR Resistol 3710B	2013	+.92	.65	410
17448751	44 Envision	2013	+.96	.53	89
17449802	Tex Demand 2791	2012	+1.02	.60	185
17453152	Bruin Breaking News 2201	2012	+.94	.54	120
17455083	V A R Ranger 3008	2013	+.76	.56	141
17455084	V A R Xfinity 3009	2013	+.86	.52	63
17455111	V A R Empire 3037	2013	+.90	.61	210
17467126	Sitz Reinvested 636a	2013	+.83	.56	137
17470682	SF Speedway A187	2013	+.96	.58	295
17470735	Sitz Sensation 693A	2013	+.98	.58	166
17471320	Dameron C-5 American Classic	2012	+.88	.52	126
17479034	EXAR EZX 3772B	2013	+.87	.56	164

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17489103	Sitz Conformation 689A	2013	+ .90	.51	96
17501893	SydGen Exceed 3223	2013	+ .94	.61	287
17513381	V A R Index 3282	2013	+ .97	.71	531
17521423	SydGen FATE 2800	2012	+ .92	.66	469
17524723	Shipwheel Montana 2600	2012	+ .91	.55	171
17526276	GDAR Regulator 364	2013	+1.05	.55	142
17532083	Mohnen Impressive 1093	2013	+1.07	.67	386
17570263	Crouthamel Protocol 3022	2013	+ .85	.53	203
17571309	Styles Cash R400	2013	+ .90	.56	201
17572789	Mc Cumber Titanium 3127	2013	+ .88	.52	104
17577916	Deer Valley Patriot 3222	2013	+ .95	.66	339
17584215	Woodhill Broker	2013	+ .95	.51	73
17585502	Connealy Power Surge 3115	2013	+ .99	.61	285
17585505	Connealy Conservative 3129	2013	+ .95	.51	71
17585522	Connealy Countdown	2013	+ .97	.68	449
17585550	Connealy Trooper 3682	2013	+1.01	.51	76
17585576	Connealy Confidence Plus	2013	+ .89	.77	836
17586776	Connealy Cool 39L	2013	+1.08	.56	271
17597915	Basin Advance 3134	2013	+ .97	.67	385
17602762	Mc Cumber Fortunate 307	2013	+ .98	.50	95
17603620	Hoover Elation M123	2013	+1.05	.56	196
17603627	Hoover Hawkeye	2013	+1.05	.52	99
17607585	V A R Foreman 3339	2013	+ .88	.56	148
17608412	Vin-Mar Johnny Cash 3513	2013	+1.02	.57	212
17608631	Koupals B&B Titan 3013	2013	+ .93	.53	144
17612134	M A R Double XL 320	2013	+ .91	.55	161
17614182	A A R Frontman 3132	2013	+1.03	.50	148
17614813	Musgrave Big Sky	2013	+1.01	.77	923
17623634	G A R Phenom 7953	2013	+ .86	.52	67
17623660	G A R Prophecy	2013	+ .84	.54	140
17628853	V D A R Churchill 1063	2013	+ .99	.54	103
17632447	Raven Powerball 53	2013	+ .96	.69	630
17633557	S A V Privilege 3030	2013	+ .96	.65	326
17633563	S A V Ten Speed 3022	2013	+ .93	.74	961
17633578	S A V 707 Rito 3438	2013	+ .96	.53	51
17633838	S A V Recharge 3436	2013	+ .95	.74	562
17633839	S A V Renown 3439	2013	+ .99	.82	2,446
17649083	Bushs Easy Decision 98	2013	+ .91	.62	326

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17651088	HA Outside 3008	2013	+ .93	.59	61
17663847	Ox Bow Ozzie 3233	2013	+1.07	.50	133
17666102	LD Capitalist 316	2013	+1.00	.74	2,121
17668327	Kramers Apollo 317	2013	+1.04	.60	256
17670691	Rito 3S10 of 9Q15 Progress	2013	+ .88	.51	73
17677997	Poss Lasting Impact 3118	2013	+ .94	.51	32
17689665	A & B SpotLite 3065	2013	+ .94	.55	250
17707279	KG Justified 3023	2013	+ .99	.69	1,080
17709960	Gardens Cache	2013	+ .90	.58	167
17740199	EXAR PowerSource 4723B	2014	+ .93	.56	192
17741161	Bridges Double Down	2014	+ .96	.51	33
17746620	SITZ Logo 12964	2014	+ .92	.63	628
17748846	4M Element 405	2014	+1.05	.58	214
17752952	Bartels Columbus 310	2013	+1.01	.50	80
17762778	AB-LVS Capitalist 4507	2014	+ .97	.52	144
17765302	EXAR Hi-Tech 4769B	2014	+ .89	.57	200
17774305	G A R 100X	2013	+ .95	.65	371
17783509	Coleman Charlo 3212	2013	+ .97	.52	103
17784803	JVC Cavalry V3326	2013	+ .95	.62	411
17786050	Quaker Hill Firestorm 3PT1	2013	+ .91	.54	167
17793480	Vintage Commander 4152	2014	+ .84	.55	104
17799492	G A R Prophet K263	2013	+ .86	.52	231
17803074	Byergo Black Magic 3348	2013	+ .88	.63	839
17805943	Gaffney Game Time 370	2013	+1.01	.50	74
17805944	Gaffney Game Changer 371	2013	+1.02	.52	103
17807052	Sitz Bullseye 9994	2014	+ .99	.52	114
17808532	SAC Conversation	2013	+ .96	.67	496
17816333	E W A High Weigh 3123	2013	+ .92	.50	161
17817177	Tehama Tahoe B767	2013	+1.00	.64	1,322
17820603	SydGen Rock Star 3461	2013	+ .83	.53	162
17821946	Baldrige Titan A139	2013	+ .95	.60	238
17821966	Baldrige Atlas A266	2013	+ .97	.54	111
17822045	Baldrige Breakthrough A091	2013	+ .98	.62	315
17831034	Quaker Hill Manning 4EX9	2014	+ .99	.60	300
17836370	Thomas Big River 4081	2014	+ .82	.53	166
17848388	Mohnen Global 1274	2014	+ .95	.51	42
17849954	K C F Bennett TheRock A473	2013	+ .93	.65	421
17850885	HF Who's That 7A	2013	+1.06	.52	157

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17853196	BUBS Southern Charm AA31	2013	+ .93	.66	1,999
17857587	44 Arsenal 4W07	2014	+ .81	.50	110
17873666	Deer Valley Old Hickory	2014	+ .93	.59	294
17877012	RB Black Ranger 458	2014	+1.00	.50	47
17877778	McConnell Altitude 3114	2013	+ .98	.56	254
17882682	Hoover No Doubt	2014	+ .88	.72	709
17888624	Connealy Glory 4127	2014	+1.04	.54	167
17888696	Connealy Conquest	2014	+ .96	.60	247
17888762	Connealy Armory	2014	+ .99	.62	280
17888826	Connealy Big Money	2014	+1.00	.53	131
17892063	Woodside Rito 4P26 of 0242	2014	+ .97	.62	262
17893917	Koupals B&B Atlas 4061	2014	+ .91	.55	182
17893985	Connealy Regulator	2014	+1.10	.51	72
17894794	44 Bragging Rights 4372	2014	+ .97	.53	189
17904142	Basin Bonus 4345	2014	+1.04	.62	327
17905508	Basin Yuma 4286	2014	+ .90	.57	167
17908266	EXAR Stud 4658B	2014	+ .89	.72	919
17913751	Basin Rainmaker 4404	2014	+ .92	.56	619
17918412	DL Sonic 444	2014	+ .95	.59	233
17919726	BSF Hot Lotto 1401	2014	+ .97	.61	333
17921462	S A V Universal 4038	2014	+ .92	.54	115
17921485	S A V Pedigree 4834	2014	+1.08	.53	239
17923290	S A V Cutting Edge 4857	2014	+ .91	.60	267
17923480	S A V Seedstock 4838	2014	+1.02	.67	620
17923520	S A V Regard 4863	2014	+ .99	.64	327
17924903	Spring Cove Crossbow	2014	+ .97	.54	254
17925323	HAYNES Outright 452	2014	+ .96	.70	665
17926446	Spring Cove Reno 4021	2014	+1.18	.62	584
17928462	Mill Brae Identified 4031	2014	+1.01	.59	299
17932714	Ellingson Chaps 4095	2014	+1.02	.63	396
17933463	Ellingson Roughrider 4202	2014	+ .97	.60	413
17935497	Mytty Source	2014	+1.05	.52	143
17938417	Schiefelbein Allied 514	2014	+ .92	.51	115
17943466	HA Prime Cut 4493	2014	+ .85	.64	535
17950219	3F Epic 4631	2014	+ .89	.70	1,067
17952324	Bushs Tundra 602	2014	+1.00	.51	92
17960531	Ideal 4223 of 1168 Blkbrd	2014	+ .98	.52	200
17960722	Baldridge Beast Mode B074	2014	+ .90	.53	178

Breed average EPD for FL is +1.01. Therefore animals with values greater than breed average are a “breed improver” for that trait. Higher numbers are more desirable for the trait.

EPDs reflect data sent in on or before 02/09/2024

Functional Longevity Research EPD

02/12/2024

Registration No.	Name	Birth Yr	FL EPD	FL Acc	FL Prog
17967159	V D A R Sonny Boy 1194	2014	+1.03	.55	134
17972810	Jindra Acclaim	2014	+.78	.74	2,011
17974692	ICC Pay Raise 4886	2014	+1.00	.56	323
17991528	Bruns Blaster	2014	+.99	.60	275
17992571	Young Dale Xcaliber 32X	2010	+.90	.61	147
17993084	Circle L Gus	2014	+.96	.53	227
18025296	G A R Method	2014	+.86	.58	372
18036327	Barstow Bankroll B73	2014	+.85	.62	552
18060260	Angus Hill Steadfast 854B	2014	+1.07	.53	133
18066037	V A R Legend 5019	2015	+.94	.62	653
18066052	V A R Heritage 5038	2015	+1.10	.50	135
18069951	Brooking Bank Note 4040	2014	+.96	.64	437
18086964	Sitz Dividend 649C	2015	+1.03	.53	140
18088092	Sitz Upward 307R II	2014	+1.03	.67	2
18094501	Werner Flat Top 4136	2014	+1.01	.60	640
18109016	Freys Appearance	2014	+.94	.54	185
18116133	EXAR Rapture 5844B	2015	+1.04	.50	107
18148348	Connealy Concord	2014	+1.14	.56	171
18150495	Yon Full Force C398	2014	+.94	.54	286
18156972	MGR Treasure	2015	+1.13	.68	811
18159093	S Powerpoint WS 5503	2015	+1.04	.59	385
18170041	SydGen Enhance	2015	+.96	.72	3,597
18181431	Ellingson Top Shelf 5050	2015	+.96	.50	168
18184147	Basin Paycheck 5249	2015	+1.02	.51	132
18194415	Musgrave Sky High 1535	2015	+1.02	.62	437
18200213	S Foundation 514	2015	+1.17	.56	285
18212186	V A R Rubicon 5414	2015	+1.13	.50	74
18217198	G A R Ashland	2015	+.98	.65	1,336
18217480	Colburn Primo 5153	2015	+.80	.50	181
18219638	SITZ Response 405C	2015	+1.12	.55	174
18219911	Baldrige Command C036	2015	+.86	.61	455
18220552	Sitz Asset 402C	2015	+.98	.57	208
18227118	Connealy Rampart	2015	+1.16	.52	82
18227124	Connealy Niobrara 5451	2015	+.93	.55	139
18229425	Baldrige Bronc	2015	+.99	.74	1,172
18229487	Baldrige 38 Special	2015	+.97	.62	559
18229488	Baldrige Compass C041	2015	+1.04	.61	259
18230666	Connealy Doc Neal	2015	+.92	.53	81

Breed average EPD for FL is +1.01. Therefore animals with values greater than breed average are a “breed improver” for that trait. Higher numbers are more desirable for the trait.

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Functional Longevity Research EPD

02/12/2024

Registration No.	Name	Birth Yr	FL EPD	FL Acc	FL Prog
18236795	TEF Outside 514	2015	+ .84	.50	148
18248293	Bruin Torque 5261	2015	+1.08	.53	303
18250419	SITZ Reload 411C	2015	+1.10	.57	242
18258149	S A V Sensation 5615	2015	+ .99	.69	961
18272797	Schiefelbein Attractive 4565	2015	+ .99	.52	189
18286467	HA Cowboy Up 5405	2015	+ .97	.80	2,989
18315953	Young Dale Believe 46B	2014	+ .91	.52	165
18333424	G A R Proactive	2015	+ .97	.53	210
18379347	EXAR Monumental 6056B	2016	+ .99	.64	1,221
18389838	Bar R Jet Black 5063	2015	+ .90	.61	1,226
18397542	Sitz Stellar 726D	2016	+ .79	.57	1,240
18414912	TEX Playbook 5437	2015	+1.04	.72	1,800
18423726	KB-Full Measure C40	2015	+ .95	.50	232
18429666	Deer Valley Unique 5635	2015	+1.04	.51	387
18434747	Stevenson Turning Point	2016	+ .91	.54	316
18459815	G A R Storm	2015	+1.06	.51	140
18467508	Musgrave 316 Stunner	2016	+ .95	.66	1,477
18476755	K C F Bennett Citation	2015	+1.00	.56	189
18493773	Baldrige Colonel C251	2015	+1.04	.73	1,259
18510183	EZAR Gold Rush 6001	2016	+ .95	.51	299
18511911	Basin Payweight Plus 6048	2016	+1.07	.52	245
18534952	Connealy Legendary 644L	2016	+1.00	.58	591
18538178	Connealy Blackhawk 6198	2016	+1.02	.50	371
18542959	Ellingson Homegrown 6035	2016	+1.03	.50	288
18543019	Ellingson Homestead 6030	2016	+1.02	.54	418
18543414	Mead Magnitude	2015	+1.09	.52	458
18577290	FF Rito Righteous 6R41	2016	+1.06	.51	186
18578963	S A V Rainfall 6846	2016	+ .96	.65	1,468
18578964	S A V President 6847	2016	+1.02	.64	919
18578965	S A V Raindance 6848	2016	+ .98	.65	1,293
18608253	DL Dually	2016	+1.02	.54	446
18631344	Poss Achievement	2016	+ .95	.55	385
18636043	G A R Inertia	2016	+ .98	.53	585
18658677	Casino Bomber N33	2016	+1.00	.65	1,058
18672855	Panther Cr Incredible 6704	2016	+ .94	.53	194
18675107	E W A Peyton 642	2016	+1.09	.53	402
18717078	V A R Power Play 7018	2017	+ .92	.56	584
18734838	Coleman Bravo 6313	2016	+ .95	.55	722

Breed average EPD for FL is +1.01. Therefore animals with values greater than breed average are a “breed improver” for that trait. Higher numbers are more desirable for the trait.

EPDs reflect data sent in on or before 02/09/2024

Functional Longevity Research EPD

02/12/2024

Registration No.	Name	Birth Yr	FL EPD	FL Acc	FL Prog
18741751	Diablo Deluxe 1104	2016	+ .92	.50	227
18827828	Deer Valley Growth Fund	2017	+ .88	.60	1,515
18837398	Baldrige Alternative E125	2017	+ .97	.55	786
18876777	Woodhill Blueprint	2017	+ .98	.54	576
18962396	Poss Maverick	2017	+1.02	.54	573

Breed average EPD for FL is +1.01. Therefore animals with values greater than breed average are a “breed improver” for that trait. Higher numbers are more desirable for the trait.

EPDs reflect data sent in on or before 02/09/2024

Background

Profitability and sustainability of beef cattle production depend on many factors and cow longevity is certainly one of them. Angus breeders have ranked cow longevity as a priority, along with associated research and the development of new tools and programs, within the American Angus Association.

With that in mind, Angus Genetics Inc. (AGI®) set their sights on additional research around the topic starting in 2018. This was not the first time that research around the topic had commenced. In fact, about 8 years prior, similar research had been conducted. At that time, however, more whole herd data was needed to support this evaluation. Therefore in 2012, the MaternalPlus® program, now included within the AHIR® Inventory Reporting program, was created to capture when females were successful in the calving season; and if they weren't, when and why they left the herd.

Since then, a lot of research has been done both internally and in collaboration with universities, such as the University of Guelph, Purdue University, and the University of Georgia. Recent efforts focused on data exploration and trait definition.

Several trait definitions and statistical models have been proposed in scientific literature and utilized to evaluate maternal function in both beef and dairy cattle. A few examples are traditional longevity (TL), functional longevity (FL), productive life (PL), stayability (STAY), survival models (SM), etc.

After researching different models, the **functional longevity** definition made the most sense to accommodate the data reported by Angus breeders within the Association's database and for its alignment with selection goals.

Despite modeling differences, the selection objective is often the same: to select sires that will produce daughters that remain in the herd and produce a calf every year. With that in mind, the word functional in the name of this trait is not without reason. Being functional means staying in herd and producing a calf every year. This contrasts with early stayability models where cows were only assessed as to whether they survived in the herd to a certain age.

Our research also explored the dam production data provided by breeders in the form of disposal codes, which allows separating active versus culled females in the database and provides insight as to why those cows are leaving the herd. From those data, there is variability for the reasons why females leave the herd. When available, disposal codes will be leveraged in the FL research evaluation.

Additionally, several analyses were conducted to determine the optimal window of data to be included in the evaluation. The initial research started by including cows with data reported from 2 to 15 years of age. However, for the purpose of estimating variance components, heritability estimates, and predicting the FL expected progeny difference (EPD) to rank sires, data from cows that are between 2 to 10 years of age was optimal, and only data up to 10 years of age is used for the genetic evaluation of FL. The FL evaluation includes records from cows born after 1990 and it also includes data from the Canadian Angus Association, bringing additional phenotypic data to predict the research EPDs.

Breeders are still encouraged to record and submit breeding, calving and culling records on all cows for as long as they stay in the herd, as this data is valuable for management and studying maternal characteristics.

If you want more technical details about the initial development of the functional longevity trait, two peer-reviewed papers have been published by Oliveira et al., 2020 and Oliveira et al., 2021.

Functional longevity research EPD

The research FL EPD predicts on average, the number of calves a sires' daughter is expected to produce by 6 years of age compared with other sires' daughters in the population.

The unit of the trait is number of calves produced by 6 years of age, with a higher EPD meaning that on average, sires' daughters are predicted to produce more calves by 6 years of age, compared with a lower EPD.

As an example, if sire A has a FL EPD of 1.5 and sire B has a FL EPD of 0.5, on average, the daughters of sire A are expected to produce one more calf by age 6 compared with the daughters of sire B.

	FL EPD
Sire A	1.5
Sire B	0.5
<i>Difference</i>	1.0

The breed average for the FL EPD is 1.01, ranging from 0.39 to 1.48, with a standard deviation of 0.08. Because functional longevity is both a new EPD and a lowly heritable trait, the initial spread in the EPD is not wide, but breeders will still be able to make selection decisions and achieve genetic gain over time.

In addition, an investigation of sires born up to 2010 with at least 10 daughters showed that daughters of sires in the top 1 percentile produced on average 1.3 more calves in their lifetime compared with daughters of sires in the bottom 99 percentile. These results need to be interpreted with caution as there are many non-genetic factors that impact the actual number of calves a female will produce in her lifetime, but they demonstrate nonetheless that the FL EPD is appropriately ranking sires.

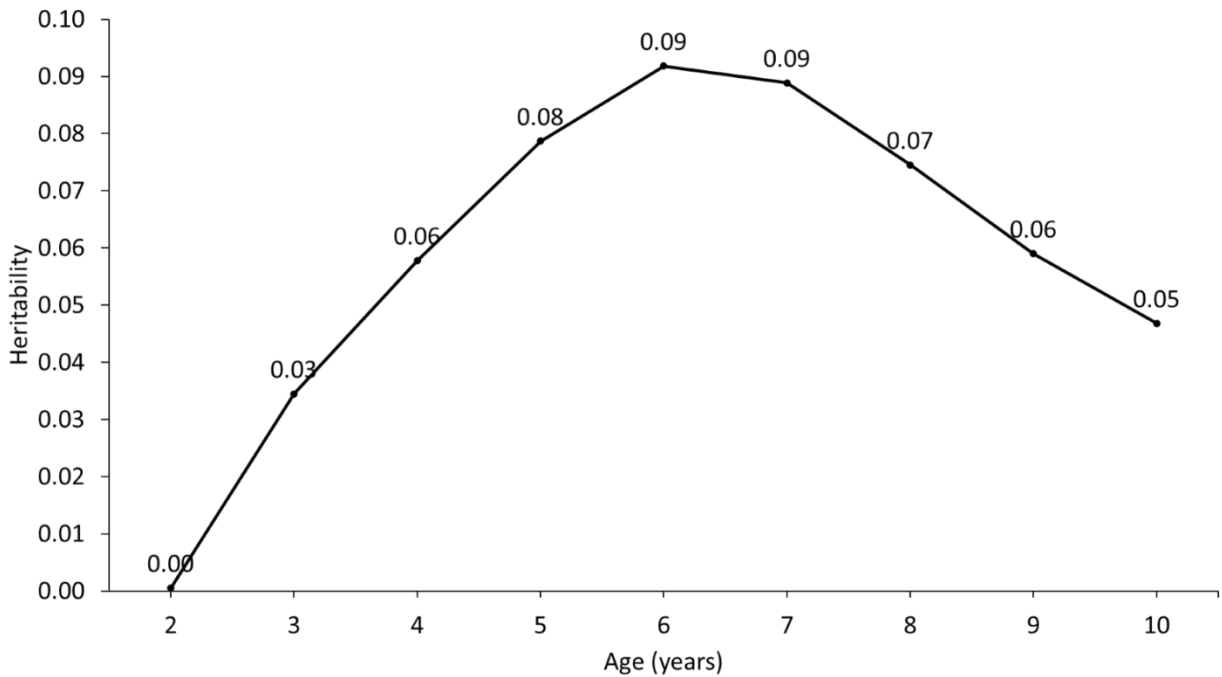
Heritability and genetic correlation across ages

The FL evaluation implements a random regression model, which allows the creation of the heritability estimates and variance components across time. Figure 1 shows the heritability trajectory for FL from ages 2 to 10.

From Figure 1, there are at least two notes to make. First, the heritability is close to 0 at ages 2 and 3. This is because the variability is very small at this stage. All females must calve at 2 years of age to enter the evaluation; therefore, all females have the same number of calves (n=1) recorded as she enters the evaluation. Second, there is a clear pattern in the trajectory as

heritability increases until age 6, then plateaus until age 7, and finally levels off from years 8 to 10. This demonstrates the maximum amount of genetic variation in the trait is captured by year 6, and therefore supports predicting the FL research EPD at year 6, with a heritability of 0.09.

Figure 1: Functional longevity heritability trajectory across ages.



Another feature of the random regression model is the ability to calculate the genetic correlation across ages. Table 1 shows the heritabilities (diagonals) and genetic correlations (off-diagonals) across ages for FL.

Table 1: Heritabilities and genetic correlations across ages.

Age	3	4	5	6	7	8	9	10
3	0.03	0.99	0.97	0.94	0.9	0.84	0.79	0.73
4		0.06	0.99	0.97	0.94	0.91	0.86	0.81
5			0.08	0.99	0.98	0.95	0.91	0.87
6				0.09	0.99	0.98	0.95	0.92
7					0.09	0.99	0.98	0.96
8		<i>symmetric</i>				0.07	≥0.99	0.98
9							0.06	≥0.99
10								0.05

*Correlations to age 2 were ignored because the genetic variance and heritability are close to 0.

The genetic correlations in Table 1 indicate that while there would be some reranking between EPD predicted at ages 3-5, for ages 6 and older the correlations are ≥ 0.92 and the sire reranking is minimal.

The random regression model allows us to utilize all the records, and then predict the EPD at both a time point when heritability is maximized and a point that aligns with production objectives and selection goals.

The results in Figure 1 and Table 1 help us understand that within the Angus population, using the data from cows up to 10 years of age, the heritability is maximized at age 6, and genetic correlations are high across the ages greater than 6 years, which makes it the optimal point to predict the EPD.

Conclusion

The current research completed by AGI® in collaboration with universities supports the release of a research EPD for functional longevity predicted at 6 years of age, with a heritability of 0.09. While the current FL research EPD is a good tool to help Angus breeders start to understand how sires rank for this important trait, data recording and participation in Inventory Reporting are of the utmost importance to allow further research. Ideally, in the future the functional longevity model be able to leverage only data inside of Inventory Reporting, which will continue to add accuracy to this new evaluation.

It is also imperative to understand that the Association will take the next several months to hear feedback from the membership and industry to continue to make this tool the best it can be. Members involved in Inventory Reporting who have access to the FL research EPD on their females, as well as all members with access to the sire list are encouraged to submit feedback.

Producers wanting to see the FL research EPD on females in their herd need to enroll in Inventory Reporting. The next enrollment period is open from November 1 to January 15 and is best suited for primarily spring calving herds. Primarily fall calving herds should enroll May 1 to July 15.

Together, we may find details that need to be critiqued, and updates to the research FL EPD may be warranted between now and when this trait moves into the final production stage. Currently, the final production stage is slated for June 2024 during the annual updates to the genetic evaluation.

Oliveira, H.R.; Brito, L.F.; Miller, S.P.; Schenkel, F.S. Using Random Regression Models to Genetically Evaluate Functional Longevity Traits in North American Angus Cattle. *Animals* 2020, 10, 2410. <https://doi.org/10.3390/ani10122410>

Oliveira, H.R.; Miller, S.P.; Brito, L.F.; Schenkel, F.S. Impact of Censored or Penalized Data in the Genetic Evaluation of Two Longevity Indicator Traits Using Random Regression Models in North American Angus Cattle. *Animals* 2021, 11, 800. <https://doi.org/10.3390/ani11030800>