

BY THE NUMBERS



by Stephen Miller, director of genetic research

Parental influence

The Angus pedigree is massive, with more than 22 million animals.

It is also complex, with many interrelationships.

In 2017 an Angus Foundation-funded research project was undertaken by Mehdi Sargolzaei with HiggsGene Solutions Inc. of Guelph, Canada. The primary purpose of the analysis was to determine the most influential ancestors in the Angus breed. Table 1 presents these based on their marginal contribution to the current population.

The most influential ancestor is not simply the one with the most progeny or descendants. QAS Traveler 23-4 was the bull with the largest contribution. His genome makes up almost 10% of every animal born today.

After accounting for 23-4, N-Bar Emulation EXT adds another 7%. Together these two bulls account for 17%. Put another way, if we were to sequence these two bulls we would reveal 17% of the genomic material that is born in Angus today.

With genomic samples on the top 10 animals on this list we would capture 50% of the genetic variation in the Angus breed.

This project is Phase 1 in a larger long-term effort to continue to develop better genomic tools, which will include DNA sequence data from these influential ancestors, for Angus breeders. [A](#)

Table 1: Marginal contribution for the 30 most influential ancestors in order

Name	Gender	Date of birth	Marginal contribution, %	Cumulative contribution, %	No. progeny	No. descendants
Q A S Traveler 23-4	Male	1978	9.92	9.92	30,201	7,899,413
N Bar Emulation EXT	Male	1986	7.21	17.12	66,738	4,836,852
Tehama Bando 155	Male	1980	6.66	23.78	16,435	5,611,927
P S Power Play	Male	1977	5.31	29.09	27,295	8,544,906
B/R New Design 036	Male	1990	4.57	33.66	27,120	2,756,022
Pine Drive Big Sky	Male	1980	3.75	37.42	47,656	8,208,623
R R Rito 707	Male	1967	3.72	41.13	1,804	9,838,304
Schearbrook Shoshone	Male	1971	3.40	44.54	15,113	9,028,430
Candolier Forever 376	Male	1972	3.23	47.77	798	7,847,354
Bemindful Maid D H D 0807	Female	1980	2.07	49.84	33	4,223,308
Hanton	Male	1852	1.84	51.68	21	20,680,632
Sitz Traveler 8180	Male	1990	1.71	53.39	12,694	1,946,153
Bon View Dora 56	Female	1986	1.45	54.83	25	2,520,803
Rito 9J9 of B156 7T26	Male	1979	1.44	56.27	3,025	4,466,614
Hoff Band 07 of S C 509	Female	1979	1.37	57.64	49	5,869,586
A A R New Trend	Male	1981	1.28	58.92	11,260	5,394,592
Rito 2100 G D A R	Male	1982	1.19	60.11	18,778	5,132,013
Blackcap Revolution	Male	1919	1.15	61.26	54	20,169,541
Eileenmere 85	Male	1933	1.04	62.30	287	19,079,370
Ankonian Dynamo	Male	1970	1.02	63.32	15,630	8,909,178
Baldrige Oscar	Male	1980	0.98	64.30	4,953	3,663,754
Ken Caryl Mr Angus 8017	Male	1977	0.87	65.17	16,472	7,313,872
Brost Elba 916	Female	1979	0.83	66.00	126	5,348,766
S S Objective T510 0T26	Male	2000	0.77	66.77	38,927	351,850
Emulous Bob of K Pride	Male	1960	0.74	67.51	1,737	11,506,956
Emulation 31	Male	1968	0.72	68.23	6,352	7,859,491
Paramont Ambush 2172	Male	1982	0.69	68.92	18,696	1,269,069
Evocate Princess T	Female	1962	0.66	69.57	13	6,571,361
Sitz Barbaramere Jet 2698	Female	1988	0.62	70.19	65	1,169,125
Puck of Wickwire	Male	1944	0.61	70.81	186	11,970,763