Improving Beef Cattle Through Breeding (Project 286)

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The purebred Shorthorn cattle breeding project was continued during 1966 according to the original breeding program. Two inbred lines were established in 1949. The Wernacre Premier line is now in the fifth generation of inbreeding and the Mercury line, in the third generation.

Inheritance of production traits in beef cattle are studied to evaluate effects of inbreeding and to explore the feasibility of using inbred lines to improve production traits of beef cattle.

Because the generation interval for beef cattle is long, progress with increasing levels of inbreeding is slow. Amount of inbreeding now achieved in both lines exceed one-half that aimed for in the study.

Preliminary summaries and analyses of production data taken on cattle produced in this project have been reported previously. Though still inconclusive, complete summaries and analyses for all preweaning and postweaning production data collected to date have been summarized and will be analyzed this year. With relatively low inbreeding prevailing in the two lines, no extensive line crossing has yet been attempted.

The weight of each calf and each cow is taken immediately after calving. Calves are born in the spring; creep feeding is not practiced. All calves are weaned, weighed and scored for type at approximately six months old. Soon after being weaned, they are placed on 182-day individual feeding trials for record-of-performance tests. Individual weight gain and feed consumption records are maintained. Yearling weights and type scores are taken when the feeding trials end.

The full-feed ration bulls consist of 75% cracked corn and 25% chopped alfalfa hay; that for the heifers, 55% cracked corn and 45% chopped alfalfa hay.

Production data for the 1965 calves are summarized in table 23.

Table 23 1965 Shorthorn Calves

Tattoo	Coefficient inbreed	Birth wt.	Wean wt.	Wean Score	Days fed	Initial wt.	Final wt.	Total gain	Average daily gain	Final score	TDN per cwt gain
					Wernacre Premier Line Bulls						
508	33.05	72	448	3+	182	456	920	464	2.51	3+	428
502	29.81	81	406	3	182	447	925	478	2.63	2–	554
516	34.05	91	417	2–	182	435	935	500	2.75	3	422
523	33.48	67	323	2–	182	345	775	430	2.36	3+	358
504	27.35	76	443	2–	182	450	840	390	2.14	3–	432
509	34.05	67	395	3+	182	410	825	415	2.28	3+	533
511	33.05	76	405	2–	182	420	890	470	2.58	3	442
521	28.27	78	365	2–	182	382	890	508	2.79	2–	385
Av.	31.64	76	400	2–	--	418	875	457	2.51	3+	444
					Heifers						
517	33.89	55	275	3	182	285	620	335	1.84	3+	526
522	34.05	70	370	1	182	394	740	346	1.90	2+	511
524	33.05	66	330	3+	182	345	695	350	1.92	2+	416
Av.	33.66	64	325	2–	--	341	685	344	1.89	2	484
					Mercury Line Bulls						
506	7.18	62	370	1	182	385	804	419	2.30	2+	480
531	20.30	64	350	1	182	385	825	440	2.42	2–	420
530	18.75	67	338	1–	182	365	782	417	2.29	2	457
51	16.24	72	392	1–	182	430	900	470	2.58	2+	469
547	20.05	70	385	1–	182	420	900	480	2.64	2	456
513	15.50	73	352	2	182	360	855	495	2.72	1–	435
54	20.50	72	435	2+	182	421	910	489	2.69	2	445
503	14.69	77	360	1–	182	370	812	442	2.43	2+	485
501	10.05	62	375	2	182	415	850	435	2.39	2–	541
515	12.50	69	416	1	182	436	830	394	2.16	3+	525
Av.	15.58	69	377	1–	--	399	847	448	2.46	2	471
					Heifers						
519	20.50	56	290	2	182	320	630	310	1.70	2	626
512	16.50	68	365	1	182	350	650	300	1.65	2–	567
56	18.75	63	280	2	182	270	620	350	1.92	2–	489
514	22.75	57	326	1–	182	335	715	380	2.09	2+	603
505	7.25	68	331	2	182	334	691	357	1.96	2	484
52	18.75	69	413	1–	182	410	740	330	1.81	1–	541
534	14.35	67	337	2+	182	345	725	380	2.09	2–	528
507	15.50	52	295	2–	182	310	655	345	1.90	2–	546
510	19.75	51	330	2+	182	340	680	340	1.87	2+	502
528	16.75	78	262	2–	182	285	607	322	1.77	3+	567
Av.	17.09	63	323	2+	--	330	671	341	1.87	2–	545