



Department of Animal and Range Sciences
CLAYTON LIVESTOCK RESEARCH CENTER

PROGRESS REPORT

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New Mexico Feeder Calf Study - Growing and Finishing Performance¹

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Newly weaned calves that have been stressed and/or have a deficient immune system may succumb to respiratory disease. Even if these calves recover, their feedlot performance and cost of gain can be affected negatively. Cases of increased morbidity and mortality have been reported in newly weaned calves from large, isolated ranches in the western United States, presumably because calves from these ranches are immunologically naive. In an effort to evaluate the nature and extent of potential health problems, research was conducted at this Center with newly weaned calves from 14 New Mexico ranches. Receiving period performance by these calves was reported in Progress Report No. 75. The purpose of the present report is to present feedlot performance and carcass data for these same calves; information about their immune status will be the subject of a third and final report.

Details about the 14 ranches (223 calves) used in the experiment are given in Progress Report No. 75. Alphabetical ranch codes used in that report also are used in this report. One calf from Ranch N died (chronic respiratory disease) before the feedlot phase began, and one calf from Ranch G was removed from the experiment because of health problems. Following the receiving phase described in Progress Report No. 75, the calves remained in their respective feedlot pens by ranch. A growing phase was initiated at the end of the receiving period, during which calves were fed an 85% concentrate (steam-flaked milo or whole-shelled corn base) diet to provide a gain of approximately 2 lb per day. Calves were weighed as a group by ranch every 28 days, and feed intake was measured for each pen. The feedlot phase began on February 12, 1992. On that date, calves were implanted with Synovex S and given ad libitum access to a 90% concentrate diet. The 90% concentrate diet was composed of (dry matter basis): 5.17% sudangrass hay; 5.14% alfalfa; 15.65% whole-shelled corn; 61.86% steam-flaked milo; 5.0% molasses; 2.05% fat; 1.02% limestone; .65% dicalcium phosphate; .51% salt; .49% urea; .51% ammonium sulfate; and 1.95% hominy-based premix (premix supplied vitamins A and E, Rumensin, Tylan and trace minerals). Steers were weighed as a group by ranch at 28-day intervals throughout the feedlot phase, and slaughtered when 60% of the steers from each ranch (pen) were deemed to have sufficient finish to grade low Choice. Individual final live weights were recorded, and carcass data (Excel Corp. packing plant, Friona, TX) were collected by cooperators at West Texas State University on each of four slaughter dates (three or four ranches at each date). Because of problems at the packing plant, we

were unable to obtain carcass data on the last slaughter date (Ranches F, G and L).

Performance and carcass data during the growing and finishing phases of the trial are shown in Table 1. Average initial weight for the growing phase varied from 467 to 741 lb. Average initial weight for the finishing phase varied from 624 to 910 lb. Considerable variation in daily gain among ranches was evident for both the growing and finishing periods. This variation was most likely attributable to breed and frame size differences. Daily gain for the growing phase ranged from 1.9 to 2.7 lb and from 2.6 to 3.3 lb during the finishing phase. Throughout the growing and finishing phases, steers from Ranch H (large-framed, crossbred steers) consumed the greatest amount of dry matter and had the heaviest initial and final weights. Dry matter intake among ranches ranged from 10.3 to 13.2, and from 15.2 to 21.4 lb per steer daily during the growing and finishing phases, respectively.

As noted above, carcass data were not obtained for Ranches F, G and L. Hot carcass weight ranged from 619 to 798 lb, dressing percentage from 60.5 to 62.6%, rib-eye area from 11.9 to 13.9 square inches, kidney, heart and pelvic fat from 1.9 to 2.4%, fat thickness from .27 to .58 inches, yield grade from 2.1 to 3.1, and marbling and quality grades from 3.9 to 4.3 (small and low Choice, respectively).

Taken with results of the receiving phase, the present results suggest that, under our conditions, calves from New Mexico ranches did not have an abnormally high susceptibility to respiratory disease or other health problems. Further, feedlot performance and carcass traits of these cattle were within expected ranges. Additional research is planned in which native New Mexico calves will be commingled with highly stressed calves from the southeastern U.S. Southeastern calves typically experience high morbidity rates; hence, commingling such calves with New Mexico calves should challenge the health status of New Mexico calves. This approach will presumably allow us to more critically evaluate health and receiving period performance of New Mexico feeder calves.

¹We thank Syntex Animal Health, Inc. for supplying Synovex S and Elanco Products Co. for supplying Rumensin and Tylan.

Table 1. Growing and finishing performance and carcass data by ranch for steers in the New Mexico Feeder Calf Study

Item ^a	Ranch													
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Performance data														
Growing phase														
Days	94	90	84	75	75	75	75	72	72	71	70	68	68	65
Initial BW, lb	563.3	667.0	592.3	701.8	649.1	508.8	466.8	740.5	660.3	549.4	522.1	645.6	520.4	490.7
ADG, lb	2.3	2.1	2.7	2.2	2.3	2.4	2.3	2.4	1.9	2.2	2.2	2.2	2.2	2.0
Daily DMI, lb/steer	12.0	12.7	12.4	12.8	12.4	11.0	10.3	13.2	12.3	11.3	11.0	12.3	11.1	10.2
Finishing phase														
Days	114	120	120	114	106	134	134	114	120	106	106	134	114	120
Initial BW, lb	777.1	857.3	817.8	869.4	822.4	688.0	642.7	910.4	796.4	706.7	677.2	793.1	668.1	623.8
ADG, lb	3.3	2.6	3.1	3.0	3.1	3.2	2.9	3.3	3.1	3.1	3.2	3.1	3.2	3.1
Daily DMI, lb/steer	17.9	15.2	18.4	19.0	19.4	17.1	15.7	21.4	18.3	17.2	17.8	19.5	17.4	15.8
Carcass data														
Hot carcass wt, lb	694.0	723.7	723.9	756.1	718.8	-	-	798.4	714.4	636.8	619.2	-	625.6	620.5
DP	61.2	61.8	61.1	62.6	62.2	-	-	61.8	61.3	61.5	61.0	-	60.5	60.9
REA, sq in.	12.2	12.6	13.0	13.9	12.8	-	-	13.7	12.5	12.3	12.4	-	11.9	12.2
KPH, %	2.3	2.3	2.4	1.9	2.4	-	-	2.0	2.1	2.2	2.1	-	2.3	2.1
Fat, in.	.52	.58	.55	.33	.44	-	-	.27	.53	.52	.50	-	.42	.54
YG	3.0	3.1	3.0	2.1	2.7	-	-	2.2	3.0	2.7	2.5	-	2.6	2.7
Marbling ^b	4.2	4.1	4.2	4.2	4.3	-	-	4.0	4.0	4.0	4.1	-	4.1	3.9
QG ^c	4.2	4.1	4.2	4.2	4.3	-	-	4.0	4.0	4.0	4.1	-	4.1	3.9

^aBW = body weight, DMI = dry matter intake, DP = dressing percentage, REA = ribeye area, KPH = kidney, heart and pelvic fat, YG = yield grade.

^bMarbling: 3 = slight, 4 = small, 5 = modest, 6 = moderate and 7 = slightly abundant.

^cQuality grade: 1 and 2 = Standard, 3 = Select, 4 = low Choice, 5 = medium Choice and 6 = high Choice.

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