A Seven Year Summary of Feeding Cull Market Cows

A.S. Leaflet R2409

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Summary and Implications

Nine groups totaling 457 culled market cows were fed high concentrate rations at two locations in SW Iowa to demonstrate the possibilities of finishing for the "White Fat Cow" market. Average profit per head was $16.54 with a range $174.36 to -$91.45. Adjusted final weights ranged from 1484 to 1646 pounds, while average daily gains ranged from 2.88 to 4.55 pounds daily during a 70 to 91 day feeding program. Dry matter feed conversions on a shrunk basis ranged from 8.70 to 12.78 pounds per pound of gain with an average of 10.91. From 78.4 to 98.8 percent of the cows within the fed groups qualified in the "Premium White Fat" grades with an average of 85.5%. Total cost of gain averaged $98.03 with a range of $70.81 to $156.85. Delivery weight had a significant impact on average daily gain, feed cost of gain and total cost of gain; however body condition score had no significant impact on performance traits or cost of gain.

Introduction

Beef cow-calf producers typically have 20% of their gross income come from the marketing of cull breeding stock. Added income from these animals could impact the profitability of the operation. In recent years fed cows that reach the market with the finish that is designated as "white fat" bring premiums over normal cows that are sold into the cutter, canner, utility or commercial grades. These premium prices are attractive, but do they and the practice of feeding cows to obtain this market condition return additional profits? Demonstration projects managed by the Tri-County Steer Carcass Futurity Cooperative at Lewis, Iowa and the Iowa Beef Center at Iowa State University have been done to partially answer this question.

Materials and Methods

Since 2002 the Tri-County Steer Carcass Futurity fed out nine groups of cull cows for a total of 604 head. Also included in these groups were a few first-calf heifers and open heifers, all of which were removed from this analysis. In continuation from a demonstration project done in 2001-02 reported on in 2004 (AS Leaflet R1888), these feedouts further examined whether high energy feeding programs would achieve white fat status in market cows and accrue to greater returns to the producer. All cows were consigned by local producers and fed at two Tri-County cooperating commercial feedlots in Southwest Iowa. A great deal of variation existed at delivery time for weight and condition score (Table 1). A delivery market value was assigned to each individual cow by staff based on condition, estimated dressing percent and appeal to the live market.

New to the previous report was that four of these nine groups were fed during summer months. Because cow-calf producers suffer losses during spring calving or have non-pregnant fall calving cows in the spring months this option was made available by Tri-County. Cows were delivered in November and December for the winter fed groups and during the month of May for the summer fed groups and implanted upon feedlot arrival with Revalor-H. Vaccinations included using a modified live program, this included the overeating toxoids. Cows were started on feed slowly using lower energy rations at the start and worked up to typical finishing rations containing MGA and an ionophore after 30 days. Final rations contained net energy for gain of 61 megacalories per hundred pounds of dry matter.

Winter fed cows were harvested in January and February while summer fed cows were harvested in July and August. Data collected at the harvest facility was hot carcass weight, and for part of the cows fat cover between the 12th and 13th rib, ribeye area, an estimate of percent kidney, heart and pelvic fat, calculated yield grade, and the plant house grade and price. Feed intakes and conversions were calculated utilizing the Cornell Net Carbohydrate Model. Yardage charge averaged $.345 per head daily while other per head costs were: vaccination, implant and health treatments - $8.90; miscellaneous - $7.12; trucking, insurance and checkoff - $23.93; and accounting and carcass data collection fees - $8.00.

Results and Discussion

Weight gains, final weights, ADG, feed conversion on a dry matter basis and costs of gain are shown in table 2. As expected there is a year-to-year difference, but when tested statistically using General Linear Models there were no differences in these traits due to season of the year, with the exception of days on feed. Summer fed cows were on feed an average of 6.7 days longer. As expected cows are not efficient converters of feed to gain, largely due to fat gain rather than lean tissue development.

Tri-County management were unable to market every group or even cows within a group in a manner that would return final plant grade in all cases. However, 304 head out of 457 did have final plant grades determined. As shown in table 3 85.5 percent of cattle graded made it into the Premium White Fat grouping. Therefore, it does appear that 70 to 91 days on feed will achieve white fat cover in culled breeding cows. Market groups of cows ranged in dressing percent from 53.9 to 58.0 percent with an average of 55.4 percent.

Due to the low feed efficiency and higher feed prices in 2007-08, the feed cost per hundredweight ranged from $46.58 (winter 2002 group) to $122.62 (summer 2008 group). Additionally, non-feed cost was high in comparison to most other finishing cattle programs with a range of $70.81 to $156.85. This is due to many factors, including: increased transportation costs (fewer cattle per truck load) and higher yardage fees due to additional bunk space requirements on a per head basis. However, there are certain parts of the cattle marketing cycle when added returns are possible as seen in these nine groups. The average net profit for these nine groups of cows averaged over $16.54 per head with a range of $174.36 to a -$91.45. Five groups were fed in winter months and had a weighted aveage profit per head of $7.75, while the four summer fed groups averaged $35.84 per head profit.

Producers often ask what size and body condition score perform best for making premium white fat cows. An analysis delivery body weight and condition score is contained in table 5. Statistical analysis utilizing General Linear Models showed that delivery weight category had a significant impact on average daily gain, feed cost of gain and total cost of gain. Cows weighing in the medium categories out gained cows in both of the extremes and heavier cows trended to be less efficient and as a result of lower efficiency and slower gain were more costly to feed and finish. This latter result should come as no surprise to feeders that have fed heavy feeder cattle to weights that result in high yield grades (4 and 5). Surprisingly delivery body condition score had little impact on the performance traits as well as cost of gains. Condition score 6 and 7 cows tended to have higher dressing percents than cows with body condition scores between 2 and 5.

Acknowledgments

The authors wish to thank Tri-County staff for data collection and processing and the staff at American Foods Group at Green Bay, WI and Gibbon Packing, Gibbon, NE for harvesting the cattle and allowing data collection.

Table 1. Beginning head counts, market values, weights and condition scores.

Year	No of Head	Market value $/cwt	Average Delivery Wt	Average Condition Score
2002 Winter	58	$35.76	1297 (range 896-1674)	4.67 (range 2.5 - 7)
2003 Winter	71	$50.00	1203 (range 870-1574)	4.70 (range 2 – 7.5)
2003 Summer	48	$45.00	1218 (range 968-1650)	5.08 (range 4 – 6.5)
2004 Summer	14	$52.00	1267 (range 956-1472)	4.50 (range 3.5 – 5.5)
2005 Winter	59	$49.86	1215 (range 914-1624)	4.48 (range 3 – 6.5)
2005 Summer	52	$57.00	1241 (range 940-1566)	4.02 (range 2.5 – 7)
2006 Winter	63	$45.00	1323 (range 1000-1732)	5.14 (range 4 – 6.75)
2007 Winter	63	$42.50	1356 (range 1028-1622)	5.70 (range 4 - 7)
2008 Summer	29	$53.10	1263 (range 770-1700)	5.12 (range 4 – 6.5)
Average	457	$46.98	1266 (range 770 – 1732)	4.85 (range 2 – 7.5)

Table 2. Gain, efficiency and gain cost of market cows at three locations.

Item	2002 Winter	2003 Winter	2003 Summer	2004 Summer	2005 Winter	2005 Summer	2006 Winter	2007 Winter	2008 Summer	9 Group Average
Days on Feed	77	81	91	81	80	84	86	80	70	81.6
Adjusted Feedlot Weight	1646	1487	1536	1628	1484	1504	1608	1585	1525	1551
ADG	4.55	3.51	3.47	4.46	3.32	3.13	3.33	2.88	3.75	3.50
Feed Conversion, dry matter	8.70	10.57	10.09	8.87	10.84	11.68	12.37	12.78	9.97	10.91
Feed cost/cwt	$46.58	$58.28	$50.66	$52.72	$47.29	$51.22	$88.83	$113.01	$122.62	$69.44
Total cost/cwt	$70.81	$83.69	$78.25	$74.85	$77.21	$81.71	$115.71	$147.69	$156.85	$98.03

Table 3. Carcass data on market cows.

Item	2002 Winter	2003 Winter	2003 Summer	2004 Summer	2005 Winter	2005 Summer	2006 Winter	2007 Winter	2008 Summer	9 Group Average
Hot Carcass Wt	890	849	829	944	836	821	868	891	870	860
Dress %	54.0%	57.0%	53.9%	58.0%	56.1%	54.6%	54.1%	56.1%	57.0%	55.4%
%Premium White Fat	88.3% (93.1)*	97.6% (98.8)*				77.4% (78.4)*	71.0% (80.3)*	96.2%	89.7%	57.0% (85.5%)*
% Boner / Breaker	2.6%	1.2%				21.3%	17.4%	3.8%	10.3%	8.8%
% Sold In the Beef	5.2%	1.2%	100%	100%	100%	1.3%	11.6%			33.5%
% Choice	3.9%									.7%

*(%) % Premium White Fats with In the Beef marketings excluded.

Table 4. Carcass data on market cows.

Item	2002 Winter	2003 Winter	2003 Summer	2004 Summer	2005 Winter	2005 Summer	2006 Winter	2007 Winter	2008 Summer	9 Group Weighted Average
Carcass Price $/cwt	$84.17	$93.00	$101.60	$116.00	$102.00	$105.00	$95.00	$110.00	$127.00	$100.86
Calculated Live Price $/cwt	$45.54	$52.98	$54.77	$67.31	$56.28	$57.34	$51.38	$61.76	$72.38	$55.84
Gain in Live Price	$8.99	$1.49	$9.77	$15.31	$6.41	$0.34	$6.38	$19.26	$19.28	$8.49
Profit $/head	$51.96	-$58.28	$57.15	$174.36	$50.95	-$34.99	-$91.45	$100.21	$60.68	$16.54

Table 5. Impact of delivery weight and body condition score category on performance traits and profitability, LS Means.

Delivery Weight Category	Profit	Adjusted Final Weight	Dry Matter/lb of Gain	Overall ADG	HCW	Dress Percent	% Premium White	Feed Cost/cwt	Total cost/cwt
800 to 900	-$1.69	1090	10.29	2.93	621.4	56.8%	66.7%	$90.14	$63.19
900 to 1000	$17.75	1213	11.03	3.27	683.3	56.1%	80.0%	$111.62	$72.56
1000 to 1050	$34.95	1325	9.66	3.70	752.6	56.5%	100.0%	$88.31	$65.06
1050 to 1100	$32.87	1360	10.22	3.68	761.5	56.0%	73.3%	$94.16	$67.83
1100 to 1150	$25.15	1418	12.41	3.68	793.8	55.9%	87.9%	$116.21	$80.12
1150 to 1200	$24.33	1469	10.11	3.75	816.4	55.5%	83.8%	$92.18	$67.48
1200 to 1250	$23.53	1498	9.98	3.43	841.9	56.2%	89.3%	$89.98	$64.94
1250 to 1300	$41.44	1558	10.50	3.64	883.3	56.5%	87.1%	$96.97	$69.73
1300 to 1350	$36.09	1614	10.42	3.68	902.0	55.8%	80.0%	$95.33	$69.42
1350 to 1400	$54.80	1649	10.88	3.62	926.5	56.2%	90.6%	$100.43	$72.02
1400 to 1450	$41.81	1676	11.60	3.28	943.2	56.2%	78.6%	$108.00	$75.68
1450 to 1500	$35.62	1735	11.77	3.32	959.5	55.3%	100.0%	$110.29	$78.92
1500 to 1550	$64.67	1766	11.93	3.14	989.2	56.0%	100.0%	$112.59	$80.53
1550 to 1600	$49.36	1813	12.04	3.08	1007.9	55.5%	100.0%	$117.73	$82.84
1600 to 1650	$43.21	1794	14.80	2.38	996.9	55.5%	100.0%	$162.84	$110.15
1650 to 1700	$17.32	1829	12.77	2.48	997.6	54.8%	100.0%	$124.73	$84.01

Delivery BCS Category	Profit	Final Weight	Dry Matter/lb of Gain	Overall ADG	HCW	Dress Percent	% Premium White	Feed Cost/cwt	Total cost/cwt
2	$42.61	1571	11.15	3.08	868.7	55.3%	100.0%	$110.37	$77.84
3	$33.95	1587	11.94	3.27	859.5	53.9%	77.3%	$114.38	$79.99
4	$28.53	1596	11.19	3.41	875.5	54.8%	83.0%	$107.88	$75.57
5	$38.62	1586	11.10	3.36	890.6	56.2%	86.0%	$106.36	$75.10
6	$46.82	1577	11.06	3.23	895.8	56.9%	96.8%	$103.75	$73.36
7	$28.22	1509	12.93	3.09	883.1	58.4%	100.0%	$129.47	$90.43