

## ***SOUTHWEST FEEDERS PROJECT: 4-State Calf Backgrounding Practicum<sup>a</sup>***

L.P. Anderson<sup>1</sup>, G. Lardy<sup>2</sup>, H.H. Patterson<sup>3</sup>, S.I. Paisley<sup>4</sup>, D.J. Nudell<sup>1</sup>, J.A. Paterson<sup>5</sup>

<sup>1</sup>*NDSU-Hettinger Research Extension Center, Hettinger, ND*

<sup>2</sup>*NDSU-Animal and Range Sciences, Fargo, ND*

<sup>3</sup>*SDSU-West River Ag Center, Rapid City, SD*

<sup>4</sup>*UW-Animal Sciences, Laramie, WY*

<sup>5</sup>*MSU-Animal and Range Sciences, Bozeman, MT*

### **INTRODUCTION**

If there is only a 10% increase of the available cattle retained in a backgrounding environment (56,700 head), there is in excess of \$28.6 million in added economic activity available to the agricultural community of western North Dakota associated with beef backgrounding. Southwest Feeders is designed to actively engage the agricultural community of southwestern North Dakota in value-added livestock production through a coordinated and targeted research and education program in calf backgrounding and lamb finishing.

The calf background feeding facility (24 pens, 192 head capacity) was constructed at the Hettinger R/E Center to directly support the educational and research components of this project. This facility is also used in the summer to augment current lamb finishing research at the center. This multi-faceted project is designed to enhance economic development through education and research programs involving production systems that utilize locally-produced feedstuffs, calves and lambs

In addition to cattle backgrounding and lamb finishing at the Hettinger R/E Center, producers will have additional educational opportunities and resources available. Southwest Feeders hosts a 4-State Backgrounding Shortcourse, a NDSU Feedlot School, multi-agency sponsored tours, additional county meetings and one-on-one farm/ranch visits.

### **4-STATE CALF BACKGROUNDING PRACTICUM**



The 2003 4-State Calf Backgrounding Practicum is part of an integrated research and extension program designed to enhance economic development in the semi-arid four-state area of South Dakota, North Dakota, Montana and Wyoming by strengthening and capturing value from the ruminant livestock industry. Represented in the test were 128 calves from 13 different producers throughout three different states (ND, SD, MT).

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## PROCEDURE

The test began on November 10<sup>th</sup> with weighing all animals on-test. This weight was used as the baseline for all performance and economic analysis of the 58 day test. Two weigh periods at 21 days were used to aid in tracking economic and animal performance while providing report information back to cooperating producers. The test period ended January 7, 2004.

All pens of cattle were valued based on the following assumptions:

- Price on-test and off-test based on weight class and value in the Dakotas according to USDA National Feeder & Stocker Summary for the weeks ending 11/14/03 and 1/9/04
- Yardage, feed and miscellaneous costs associated with the test period
- Ration cost of \$90/ton DM basis

The backgrounding ration consisted of a barley-pea haylage and whole corn base with a locally produced mineral/protein supplement. Pen feed adjustments were based on individual bunk calls prior to cattle being fed once daily (9:00 am). Upon receiving into the backgrounding lot, cattle were provided a seven to 10 day feed acclimation period before starting the backgrounding test. Custom feeding fees were charged back to the cooperating producers according to a signed custom feeding agreement.

Table 1. 2003 Backgrounding Diet.

	Total Diet	Barley-Pea Haylage	Corn	Supplement
% of diet, DM basis	100.00	66.00	30.00	4.00
% DM	48.30	38.90	90.30	91.70
Protein, %	13.30	14.00	11.00	20.00
NEm, Mcal/lb	0.83	0.68	0.99	0.62
NEg, Mcal/lb	0.53	0.41	0.68	0.35
Ca, %	0.72	0.56	0.02	5.50
P, %	0.36	0.33	0.34	0.84
Cu, ppm	21.00	5.00	3.00	308.00
Zn, ppm	82.00	27.00	29.00	1007.00
Mn, ppm	75.00	33.00	11.00	880.00
Deccox <sup>a</sup>	125 mg			125 mg
Rumensin <sup>b</sup>	200 mg			200 mg

<sup>a</sup>Deccox fed from 11/1/03 to 11/28/03

<sup>b</sup>Rumensin fed from 11/29/03 to 1/7/04

Animals were individually weighed prior to the morning feeding for on-test, 21 day interim and off-test weights. A health protocol was established through a local veterinary clinic including a monthly pen walk through by the attending veterinarian.

Data collection and reporting to cooperating producers included:

- Individual calf weights: on-test weight, 21 day interim weights, off-test weight
- ADG for each weigh period and overall

- Pen feed consumption, feed conversions and cost of gain
- Pen close-outs

## RESULTS

Cattle averaged 604 lbs at the start of the backgrounding test (128 hd). After a 58 day feeding period, average daily gain was 2.65 lbs/d for an off-test weight of 758 lbs. Average daily intake per head was 19.71 lbs (dry matter basis) for a feed conversion of 7.45 pounds per pound of gain (dry matter basis).

Overall feed cost per pound of gain was \$0.34. Total cost of gain including yardage and processing was \$0.43. Yardage cost was \$0.25 per head per day and processing expenses averaged \$4.53 per head. The average value of all cattle on-test was \$108.00/cwt and an off-test value of \$88.25/cwt. Calculated net return per head for the overall trial was a loss of \$53.85 (Table 3).

Table 2. Lot feeding performance.

	0-58 d
DMI, lbs	19.71
DMI, %BW	2.89
F:G, (feed:gain)	7.45
Feed cost of gain, \$/lb	0.34
ADG, lb/d	2.65

Although adverse market conditions created a negative net return to the backgrounding enterprise, net return per acre of crop ground is also important in the analysis of the locally produced barley-pea haylage. Forage production of the barley-pea haylage in 2003 was stored in haylage bags. Based on a 2003 production of 7.5 ton/acre (38.9% DM) and a feed value of \$26/ton (as-fed), the barley-pea haylage had a gross return of \$195/acre. With production and harvesting costs of \$120/acre (based on custom charges), net return per acre for the barley-pea haylage was \$75/acre.

To complete the process, calves will be finished as one group in a cooperating custom feedlot in Wyoming to provide feedlot performance and individual carcass data. The 6,000 head lot was rebuilt in 1998 with smaller pen sizes (50-150 hd), modern feed mill and processing equipment to facilitate more efficient cattle feeding, providing an excellent site for producer custom finishing trials. Calves were weighed and ultrasounded on January 15<sup>th</sup> by our University of Wyoming cooperator and coordinator of the finishing trial. The initial ultrasound data set will additionally be used as part of a second research trial. The calves will be ultrasounded prior to slaughter to aid in marketing the cattle.

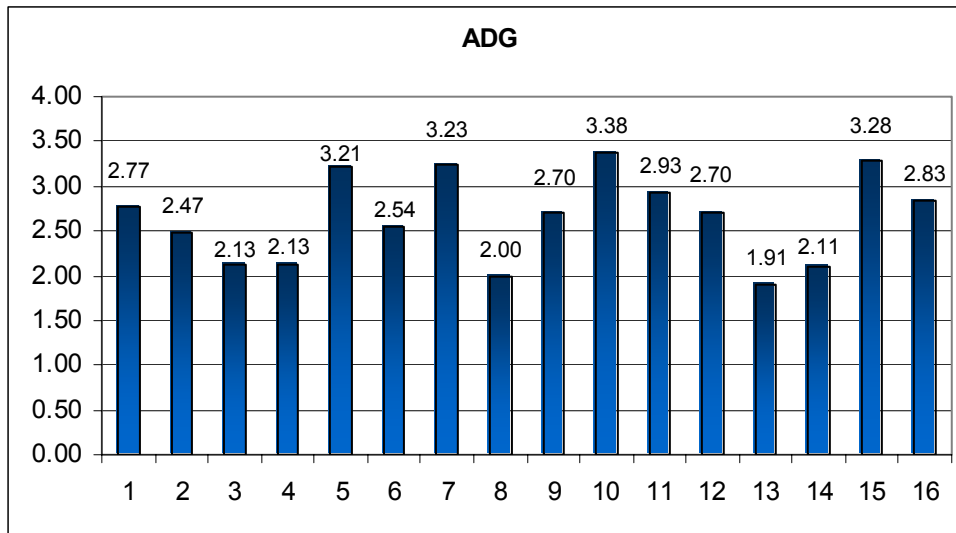
## IMPLICATIONS

Opportunities exist for producers interested in backgrounding calves in the 4-State region. While unforeseen market challenges created a negative return for the backgrounding test, overall calf value and the opportunity to utilize existing resources of equipment, labor and feed for an additional 60 days still creates an economic benefit to the region. However, this also illustrates the need to utilize risk protection strategies for cattle and feed as producers expand their retained ownership ventures.

Table 3. Feeding close-out on all pens for 58 day test.

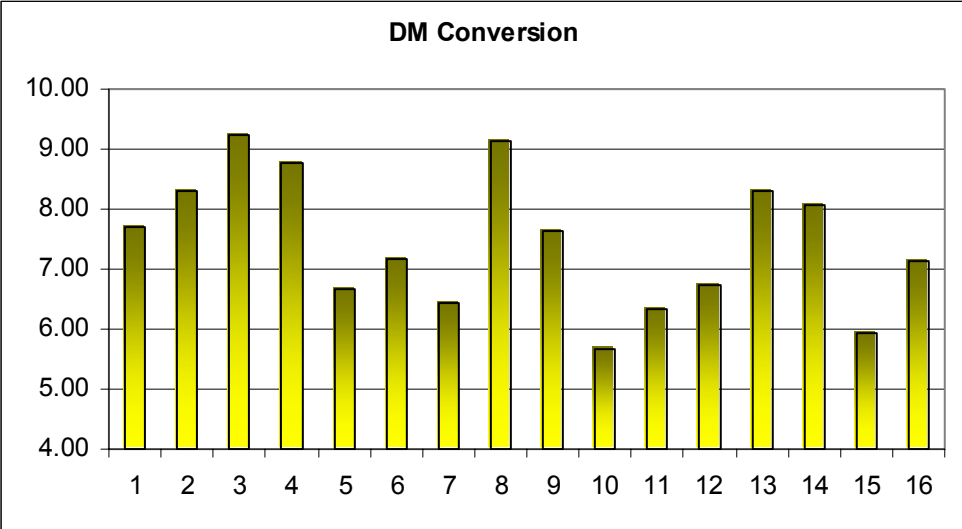
Average WT On-Test (lb)	604	<u>Value/Head</u>
Price On-Test (\$/CWT)	\$ 108.00	\$ 652.32
Number Head	128	
Date On-Test	11/10/2003	
Number Days on Feed	58	
Average Daily Gain	2.65	
Average WT Off-Test (lb)	758	<u>Value/Head</u>
Price Off-Test (\$/CWT)	\$ 88.25	\$ 668.94
Date Off-Test	1/7/2004	
Yardage (\$/hd)	\$ 14.50	
Misc. Costs(\$/hd)	\$ 4.53	
<u>Pen</u>		
Total lbs DM consumed	146,297	
Total Pen Feed Cost	\$ 6,583.37	
Feed Cost / lb Gain	\$ 0.33	
Total Cost / lb Gain	\$ 0.43	
Total Cost of Gain per Head	\$ 70.46	
Net Return per Head	(\$53.85)	
Total Pen Net Return	(\$6,892.49)	
<b>Breakeven Purchase Price</b>	<b>\$ 96.33</b>	
<b>Breakeven Sale Price</b>	<b>\$ 95.35</b>	

Figure 1. Average daily gain by pen for total 58 day backgrounding test.



\*Max Pen ADG = 3.38 lb/d, Min Pen ADG = 1.91 lb/d, Avg Pen ADG = 2.65 lb/d

Figure 2. Dry matter feed required per pound of gain by pen for total 58 day backgrounding test.



\*Highest Pen F:G = 9.25, Lowest Pen F:G = 5.67, Avg Pen F:G = 7.45