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What Is Right For The Beef Business?

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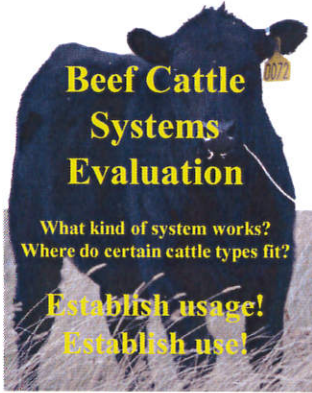
How Big?
How Small?
How Much Muscle?

**A Story Of
Opportunity**




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**Beef Cattle
Systems
Evaluation**



What kind of system works?
Where do certain cattle types fit?
Establish usage!
Establish use!

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**Beef Cattle
Systems Evaluation**

Our research has shown the male calves can work. Data has verified that Lowline influenced steers can produce carcasses suitable for the industry.



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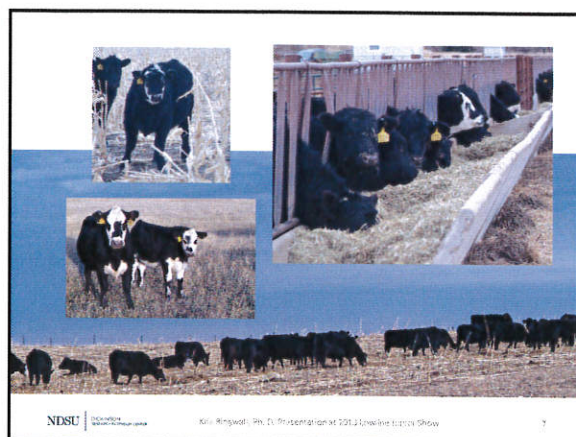
Carcass Data Summary
(Compiled in 2008)



	2004	2005	2006	2007
Arrival Weight	945	994	830	786
Frame Score	4.4	4.7	4.8	5.2
Harvest Weight	1186	1297	1179	1309
Harvest Value (in dollars)	1093	1223	1074	1176
Number of Steers	22	26	38	24
Days on Feed	85	95	110	138
Average Daily Gain	2.85	2.73	3.03	3.81
% Choice or Higher	77%	100%	68%	88%
Percentage YG3 or Lower	86%	76%	97%	75%

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So What? Beef Cattle Systems Evaluation



The Center returned to traditional calving ease bulls.

End of story?

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Opportunity Grows



F1 Lowline heifers grew up!

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We are back!



Lowline influence on males

(Calves born in 2010)

	Weight	IMF	REA	RMPFT	REA/cwt
Average of bulls born in 2010 from Red Angus sires out of Lowline influence females currently on feed or recently harvested.	695	2.82	8.9	0.12	1.28



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Beef Cattle Systems Evaluation



So,
where
do the
females fit?

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Initial Heifer Look

(From 2007 data)

	No.	Hip Height	Avg. Wt
Angus	36	48.6	752.6
Red Angus	11	49.4	758.7
Lowline Influence	38	42.5	515.9

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2010 Replacement Heifers

WW	Hip HT (in)	Frame Score	Winter Weight	REA/cwt	REA	Fat Depth	Spring Weight
Conventional Herd (63 head)							
574	43.3	5.26	626	0.82	5.94	0.25	664
Lowline Influence Herd (58 head)							
487	41.1	3.75	577	0.92	5.31	0.08	552

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Heifers		Hip Height & Frame Score								
Age (months)		1	2	3	4	5	6	7	8	9
5	33.1	35.1	37.2	39.3	41.3	43.4	45.5	47.5	49.6	
6	34.1	36.2	38.2	40.3	42.3	44.4	46.5	48.5	50.6	
7	35.1	37.1	39.2	41.2	43.3	45.3	47.4	49.4	51.5	
8	36.0	38.0	40.1	42.1	44.1	46.2	48.2	50.2	52.3	
9	36.8	38.9	40.9	42.9	44.9	47.0	49.0	51.0	53.0	
10	37.6	39.6	41.6	43.7	45.7	47.7	49.7	51.7	53.8	
11	38.3	40.3	42.3	44.3	46.4	48.4	50.4	52.4	54.4	
12	39.0	41.0	43.0	45.0	47.0	49.0	51.0	53.0	55.0	
13	39.6	41.6	43.6	45.5	47.5	49.5	51.5	53.5	55.5	
14	40.1	42.1	44.1	46.1	48.0	50.0	52.0	54.0	56.0	
15	40.6	42.6	44.5	46.5	48.5	50.5	52.4	54.4	56.4	
16	41.0	43.0	44.9	46.9	48.9	50.8	52.8	54.8	56.7	
17	41.4	43.3	45.3	47.2	49.2	51.1	53.1	55.1	57.0	
18	41.7	43.6	45.6	47.5	49.5	51.4	53.4	55.3	57.3	
19	41.9	43.9	45.8	47.7	49.7	51.6	53.6	55.5	57.4	
20	42.1	44.1	46.0	47.9	49.8	51.8	53.7	55.6	57.6	
21	42.3	44.2	46.1	48.0	50.0	51.9	53.8	55.7	57.7	

BIF Guidelines

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2010 Replacement Heifers

WW	Hip HT (in)	Frame Score	Winter Weight	REA/cwt	REA	Fat Depth	Spring Weight
Conventional Herd (63 head)							
574	43.3	5.26	626	0.82	5.94	0.25	664
Lowline Influence Herd (58 head)							
487	41.1	3.75	577	0.92	5.31	0.08	552

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2010 Lowline Influence Herd Replacements

(Sample of growth variances)

	WW	Hip HT (in)	Frame Score	Winter Weight	REA/cwt	REA	Fat Depth	Spring Weight
Avg	487	41.1	3.75	577	0.92	5.31	0.08	552
Lowline Influence Herd -- 3 Smallest Frame Score								
X0293	288	40.5	1.50	418	1.30	5.43	0.05	450
X0262	364	41.5	1.80	474	0.93	4.40	0.09	480
X0269	360	42.0	2.10	496	1.09	5.38	0.07	506

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2010 Lowline Influence Herd Replacements

(Sample of growth variances)

	WW	Hip HT (in)	Frame Score	Winter Weight	REA/cwt	REA	Fat Depth	Spring Weight
Avg	487	41.1	3.75	577	0.92	5.31	0.08	552
Lowline Influence Herd -- 3 Middle Frame Score								
X0036	532	41	3.80	630	0.91	5.74	0.08	620
X0202	562	40	3.80	610	0.77	4.71	0.11	548
X0054	440	41	3.90	486	1.13	5.48	0.06	496

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2010 Lowline Influence Herd Replacements

(Sample of growth variances)

	WW	Hip HT (in)	Frame Score	Winter Weight	REA/cwt	REA	Fat Depth	Spring Weight
Avg	487	41.1	3.75	577	0.92	5.31	0.08	552
Lowline Influence Herd -- 3 Largest Frame Score								
X0081	654	43.5	5.20	728	0.74	5.38	0.09	728
X0125	554	43.5	5.30	644	0.90	5.82	0.09	592
X0070	586	44.5	5.60	612	0.87	5.34	0.07	616

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2010 Conventional Herd Replacements

(Sample of growth variances)

	WW	Hip HT (in)	Frame Score	Winter Weight	REA/c wt	REA	Fat Depth	Spring Weight
Avg	574	43.3	5.26	626	0.82	5.94	0.25	664
Conventional Herd -- 3 Smallest Frame Score								
X0175	490	39	3.30	662	0.88	5.85	0.09	620
X0168	554	40	3.70	644	1.08	6.96	0.06	648
X0051	582	41	3.90	692	0.77	5.32	0.11	656

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2010 Conventional Herd Replacements

(Sample of growth variances)

	WW	Hip HT (in)	Frame Score	Winter Weight	REA/c wt	REA	Fat Depth	Spring Weight
Avg	574	43.3	5.26	626	0.82	5.94	0.25	664
Conventional Herd -- 3 Middle Frame Score								
X0208	580	43	5.30	590	0.91	5.37	0.07	582
X0205	570	43	5.30	662	0.91	6.04	0.07	634
X0218	620	43	5.40	676	0.88	5.93	0.07	666

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2010 Conventional Herd Replacements

(Sample of growth variances)

	WW	Hip HT (in)	Frame Score	Winter Weight	REA/c wt	REA	Fat Depth	Spring Weight
Avg	574	43.3	5.26	626	0.82	5.94	0.25	664
Conventional Herd -- 3 Largest Frame Score								
X0139	632	46	6.60	734	0.94	8.37	0.09	930
X0181	634	46	6.70	678	0.71	4.82	0.05	676
X0203	650	47	7.30	736	0.8	5.91	0.1	786

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Can they get the job done?

When the first set of Lowline bulls were delivered, I wondered if they were big enough to breed the cows!



Following is what happened.

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Calving Ease

Success in the beef business is predicated upon the principal that one needs a live calf to market. Reaching this goal is the result of careful planning, sire evaluation and good husbandry.

Caesarean section births are not desired in the beef business. Such births place stress on the cow and the calf and can create many other complications.



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Calving Ease

Data collected since 2004

The Dickinson Research Extension Center has been collecting data on low birthweight, Lowline bulls. Following is the chart compiled from data collected at the Center.

Year	No	BW	Unassisted	Assisted
2004	9	68.6	9	0
2005	25	64.9	24	1
2006	48	63.8	48	0
2007	44	74.7	42	2

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Let's continue the story . . .

Cow size and calf birth size

2011 calves

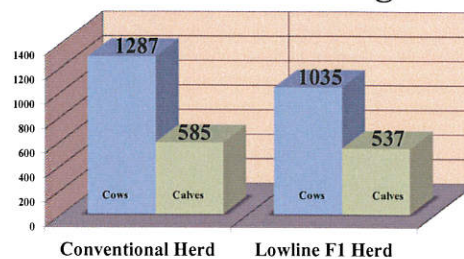
Cow group	No.	Calving Date	Calf BW	Cow Wt
Conventional cows	68	1-Apr	91	1358
Lowline F1 cows	53	17-Mar	68	999

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Cow and Calf Weights

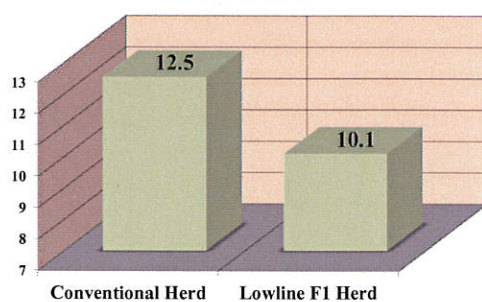


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Acres/Pair

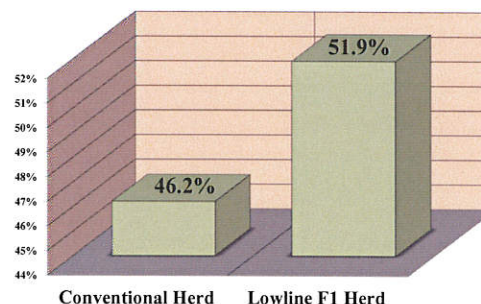


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% Cow Wt Weaned

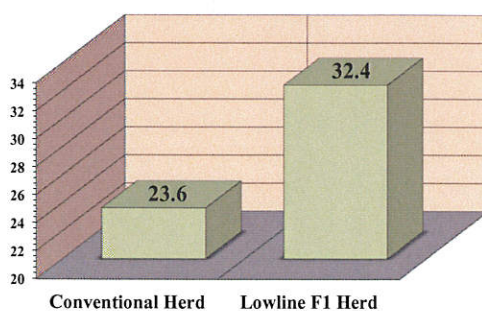


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Gain/Acre



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Conventional Herd Production



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Beef Production Benchmarks

Calving Distribution Matrix			Production Performance		
Time	CHAPS Benchmark	Lowline Average	Calf Production	CHAPS Benchmark	Lowline Average
1st 21 days	63.40%	85.35%	Cow Weight	1396	1052
1st 42 days	88.80%	98.8%	Birth Weight	86	69.5
1st 63 days	95.28%	100%	Age at Weaning (days)	190	192.5
After 63 days	4.72%		Actual WW Steers	572	477
			Actual WW Heifers	545	439
			Actual WW Bulls	604	396
			Average WW	564	455
			WW/female exposed	503	399.5
			Adjusted 205 Weight	635	516
			Weight per day of age (lbs)	3.0	2.4
			Frame Score (BIF scale)	5.7	3.45

Reproduction Performance

Cow CHAPS Benchmark Lowline Average

Reproduction Benchmark Average

Pregnancy % 93.6 98.8

Pregnancy Loss % 0.7 0.6

Calving % 92.9 98.2

Calf Death Loss % 3.1 8.95

Weaning % 91.1 89.25

Replacement Rate % 15.2 22.15

Culling % 13.7



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Calving/Weaning Date Change

In 2012, the Dickinson Research Extension Center switched to May calving.

Points of Interest

	Frame Score		Weaning Weight	
	Conventional	Lowline	Conventional	Lowline
Mid-November	5.3	3.4	485	396
	Weight		Winter Gain	
	Conventional	Lowline	Conventional	Lowline
End April	664	588	178	192

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Red Angus Sires

Growth				
Bull Reg	Visual ID	BW	WW	YW
1473021	Y066	-0.1	63.0	105.0
1317950	W012	0.0	68.0	112.0
1547977	2253	-1.6	43.0	65.0
1547993	2293	0.7	60.0	93.0
1317985	W045	-3.0	58.0	87.0
1473096	Y142	-1.5	61.0	103.0
1548086	2211	-1.4	72.0	97.0
1548050	2184	-1.1	72.0	101.0
1393949	X187	1.1	64.0	103.0
1238616	V131	-4.4	37.0	55.0
DREC Average		-1.1	59.8	92.1
Red Angus Average		-1.3	55.0	83.0

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Red Angus Sires

Maternal				
Bull Reg	Visual ID	MILK	ME	STAY
1473021	Y066	22.0	10.0	7.0
1317950	W012	21.0	7.0	13.0
1547977	2253	29.0	-1.0	8.0
1547993	2293	20.0	4.0	13.0
1317985	W045	22.0	0.0	15.0
1473096	Y142	24.0	2.0	10.0
1548086	2211	17.0	5.0	15.0
1548050	2184	13.0	7.0	15.0
1393949	X187	17.0	2.0	13.0
1238616	V131	27.0	4.0	12.0
DREC Average		21.2	4.0	12.1
Red Angus Average		20.0	3.0	10.0

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Red Angus Sires

Carcass			
Bull Reg	Visual ID	MARB	REA
1473021	Y066	0.3	0.2
1317950	W012	0.4	0.4
1547977	2253	0.4	0.3
1547993	2293	0.4	0.2
1317985	W045	0.5	0.3
1473096	Y142	0.5	0.5
1548086	2211	0.5	0.1
1548050	2184	0.5	0.2
1393949	X187	0.5	0.6
1238616	V131	0.6	0.4
DREC Average		0.5	0.3
Red Angus Average		0.4	0.1

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Limousin Sires

Growth				
Bull Reg	Visual ID	BW	WW	YW
2005690	295Z	-0.8	38.0	68.0
2005695	2100Z	0.6	43.0	76.0
DREC Average		-0.1	40.5	72.0
Limousin Average		1.9	45.0	81.0

Carcass			
Bull Reg	Visual ID	MARB	REA
2005690	295Z	0.0	0.6
2005695	2100Z	0.0	0.7
DREC Average		0.0	0.7
Limousin Average		0.0	0.5

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Conventional Herd Production



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Beef Cattle Systems Evaluation

We know we can put cattle through the feedyard.

So, where
do the
females fit?



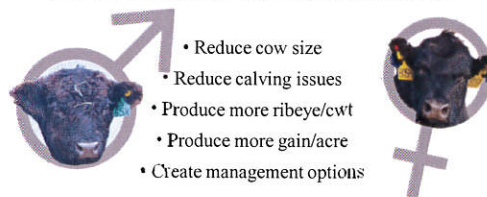
Lowline F1 cow and Lowline influence calves

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Beef Cattle Systems Evaluation Lowline Influence



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Beef Cattle Systems Evaluation

Reduce cow size

Conventional heifers

- Breed Lowline
- Males finished through traditional channels
- Heifers are 1/2 Lowline x 1/2 conventional and become replacement heifers in terminal Lowline herd



Net result

Shave 300 pounds off cows while maintaining muscle and producing mainstream industry beef carcasses



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Beef Cattle Systems Evaluation

Reduce calving issues

Conventional heifers

Data has shown that conventional heifers bred Lowline experienced much reduced calving issues.

Net result

A calf with an eye on the future; looking for milk and green grass under the care of a good mother!



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Beef Cattle Systems Evaluation

More ribeye/cwt

Conventional herd

- Lowline crossbred steers tend to produce more ribeye/cwt



Net result

Lowline crossbred cattle maintain more muscle per pound of body weight. The net result is the ability to downsize cows and maintain muscle.

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Beef Cattle Systems Evaluation

More gain/acre

- Lowline influence cows show the ability to increase total gain per acre



Net result

Additional managerial options matching the number of cows and stocking rate for land use.

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Beef Cattle Systems Evaluation

Management options

- Terminal crossbreeding system mainstreams Lowline genetics with conventional beef genetics.
- Marketing opportunities



Net result

- Establish F1 Lowline females for base cow herd
- Breed more heifers Lowline
- Create marketing opportunity for Lowline steers

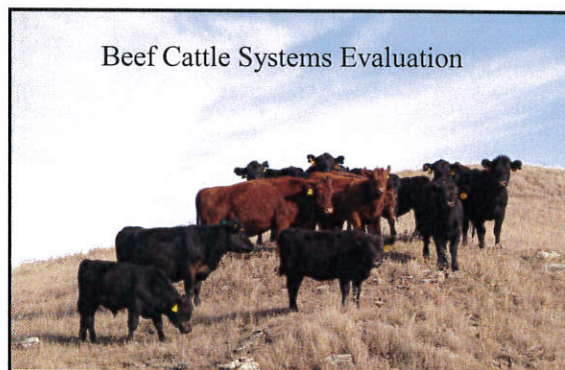
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Beef Cattle Systems Evaluation



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Beef Cattle Systems Evaluation

How we continue!

F1 Lowline Bred Heifers



Conventional Bred Heifers



F1 heifer herd about one-half size of conventional heifer herd!



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What did we do? – Established 2 Herds

Conventional females



Lowline F1 females



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Beef Cattle Systems Evaluation

How we continue!

Conventional
Cows



F1 Lowline
Cows

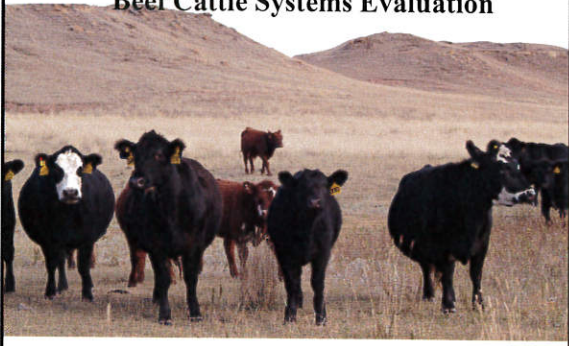


Conventional
Bulls



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Beef Cattle Systems Evaluation

Foundation breed improvement & stability

$\frac{1}{4}$ Lowline Open Heifers



F1 Lowline Open Heifers



$\frac{1}{4}$ heifer herd about one-half size of F1 heifer herd!

Outcome
Transition to PB herd



Outcome
 $\frac{1}{4}$ Lowline

Breed Lowline

Breed Lowline

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Beef Cattle Systems Evaluation

Thoughts

Conventional females



Lowline females



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Beef Cattle Systems Evaluation

Thoughts

Conventional bulls



Lowline bulls
F1 & High %



Work on cows

Work on heifers

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Beef Cattle Systems Evaluation

Thoughts

There are opportunities in the beef business.

You, as the producer, set the course for the future!




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Beef Cattle Systems Evaluation

Lowline Influence



- Reduce cow size
- Reduce calving issues
- Produce more ribeye/cwt
- Produce more gain/acre
- Create management options



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Thank you

for your interest and your dedication
to growing the beef cattle industry!



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