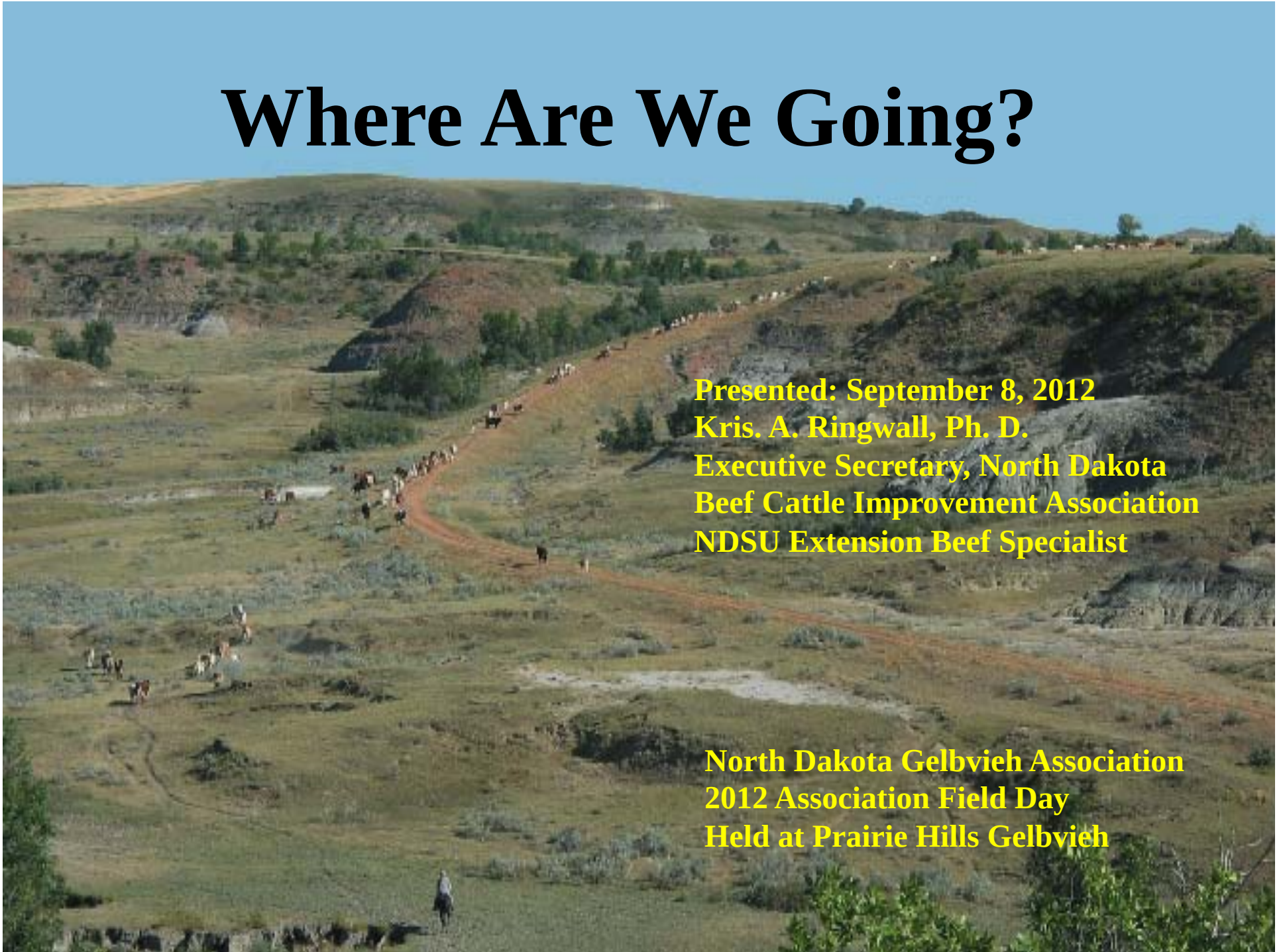


Where Are We Going?

**Presented: September 8, 2012
Kris. A. Ringwall, Ph. D.
Executive Secretary, North Dakota
Beef Cattle Improvement Association
NDSU Extension Beef Specialist**

**North Dakota Gelbvieh Association
2012 Association Field Day
Held at Prairie Hills Gelbvieh**



Just how big are cows?

Quantity of Daily Intake Impacts Stocking rate

Daily Intake is a function of Body Size



Cow Size

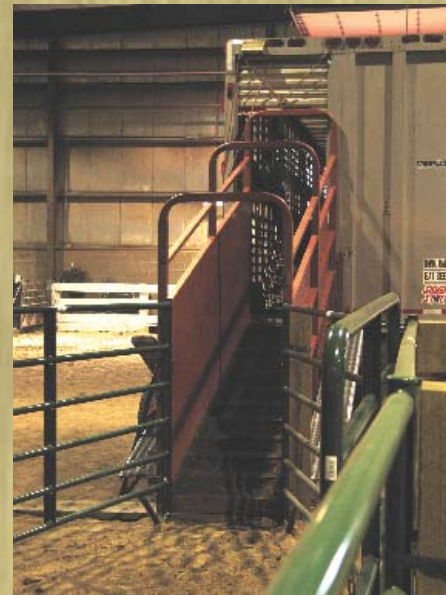
A Foundational Issue

Cow Weights Late Fall and Early Winter

Weight Range	Number of Cows
1,900 – 2,000	3
1,800 – 1,899	6
1,700 – 1,799	24
1,600 – 1,699	30
1,500 – 1,599	56
1,400 – 1,499	47
1,300 – 1,399	43
1,200 – 1,299	21
1,100 – 1,199	31
1,000 – 1,099	24
900 – 999	7
800 – 899	18
700 – 799	14
600 – 699	1

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What cows should stay? What cows should go?



In many cases, the only cows left are productive, solid cows.



Dickinson Research Extension Lazy L Calving Distribution

Age	First 21 days	Second 21 days	Third 21 days	Fourth 21 days	Late
2	84	13	1	0	0
3	37	14	0	4	3
4	31	14	1	1	8
5	25	9	0	5	5
6	19	3	3	1	5
7	7	4	1	1	1
8	18	15	6	4	7
9	10	15	2	3	1
10	2	3	6	0	0
11	20	3	3	0	1
12+	3	1	0	0	2

Lazy L inventory reduction strategy: Draw your lazy L depending on how many cows you need to cull. Sell cows below and to the right of the lazy L to reduce older cows and those that are not calving on time.

Average Cow Weights

	Herd One	Herd Two
Number of Cows	52	50
Average Weight	1,216 lbs.	1,571 lbs.
Weight Range	856 – 1,395 lbs.	1,350 – 1,935 lbs.

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What does this mean?

**355 pounds difference
in Body Weight**

**Impacts on daily feed
intake and stocking rate**



Feed Needs

For Cow-Calf Pairs

June 1 to September 30



Daily Intake of Dry Matter Feed

**Ration that was 60% Total Digestible
Nutrients (TDN) and 9.8% Crude Protein**

	Herd One	Herd Two
Number of Cows	52	50
Average Weight	1,216 lbs.	1,571 lbs.
Estimated Feed Intake	< 28 lbs.	< 34.5 lbs.

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Feed difference

**6.5 pounds per day
of dry matter per cow**

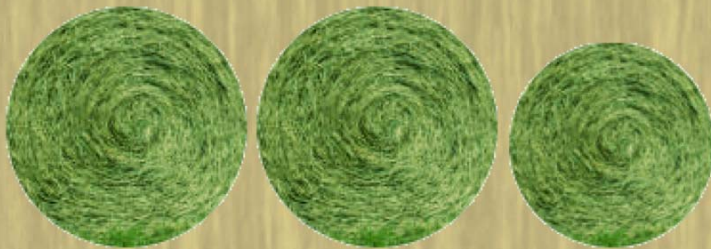


Feed difference

780 pounds per cow for 120 days

Smaller cows

3,360 pounds of
dry matter per cow



Assume 1,200 pound bales

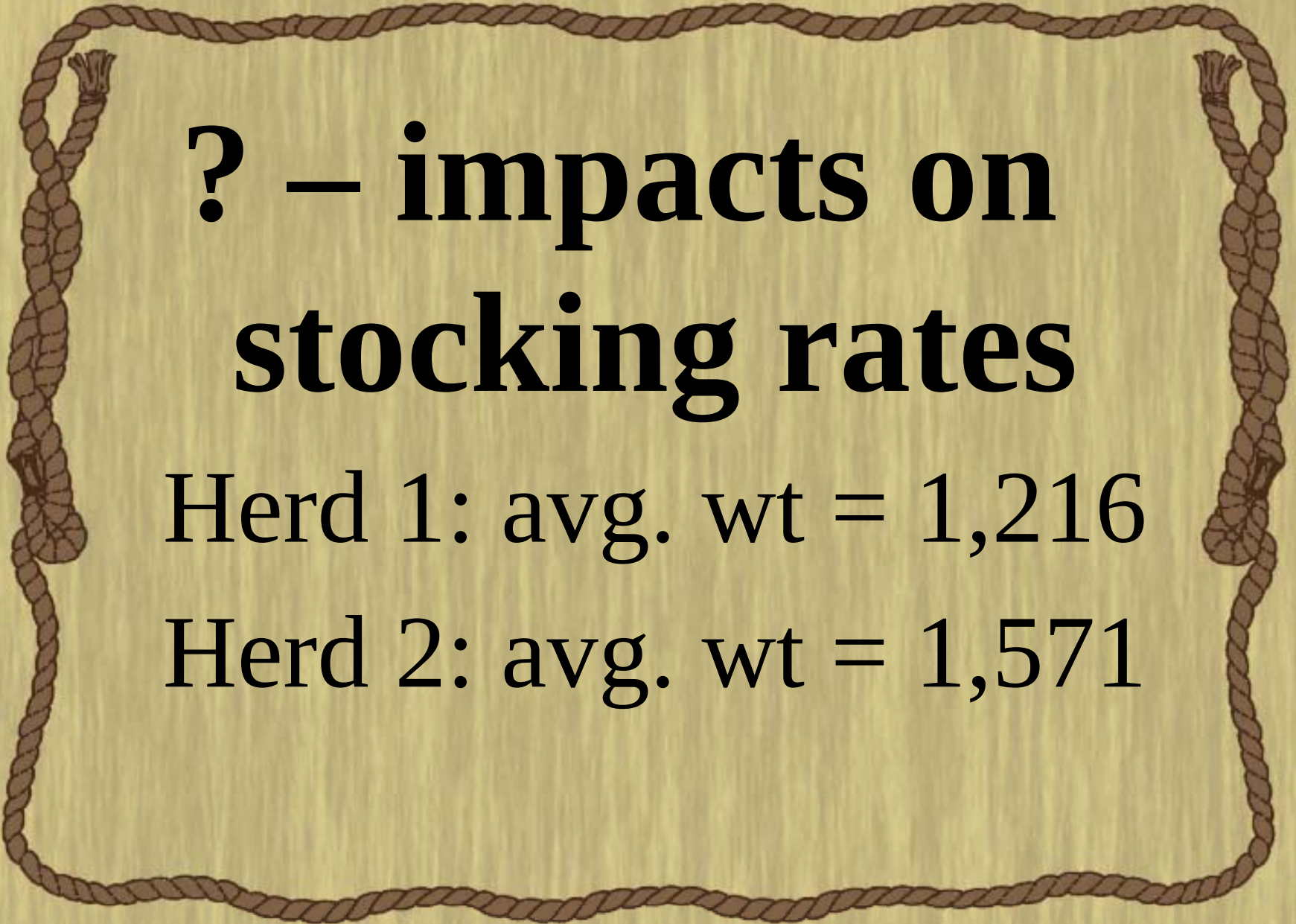


Larger cows

4,140 pounds of
dry matter per cow



**84 tons
difference
in feed needs**



? – impacts on stocking rates

Herd 1: avg. wt = 1,216

Herd 2: avg. wt = 1,571

Animal unit (AU)

- 1,000 pound cow, either dry or with calf up to 6 months of age

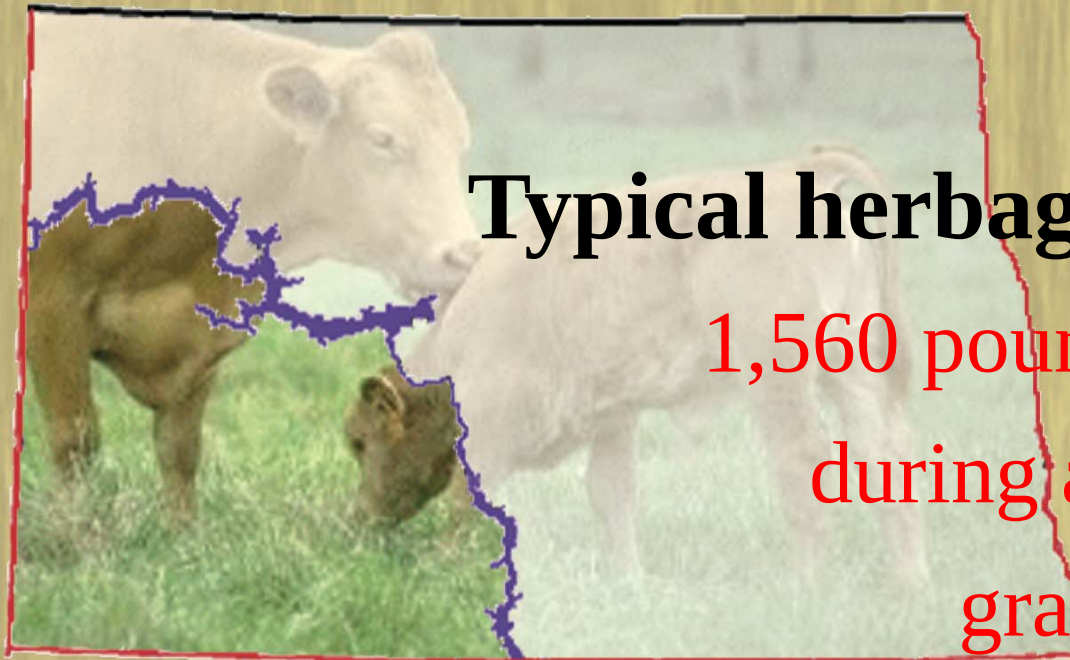


- Animal unit is dry forage required by a 1,000 pound cow for one month based on a forage allowance of 26 pounds per day

Western North Dakota

Stocking Rate for 1,000 pound cow

2.03 acres per month



Typical herbage biomass

1,560 pounds per acre

during a 4.5 month

grazing season

Monthly Dry Matter Intake*

	Herd One	Herd Two
Number of Cows	52	50
Average Weight	1,216 lbs.	1,571 lbs.
Estimated Dry Matter	854 lbs.	1,053 lbs.
Stocking Rate	2.35 acres	2.85 acres

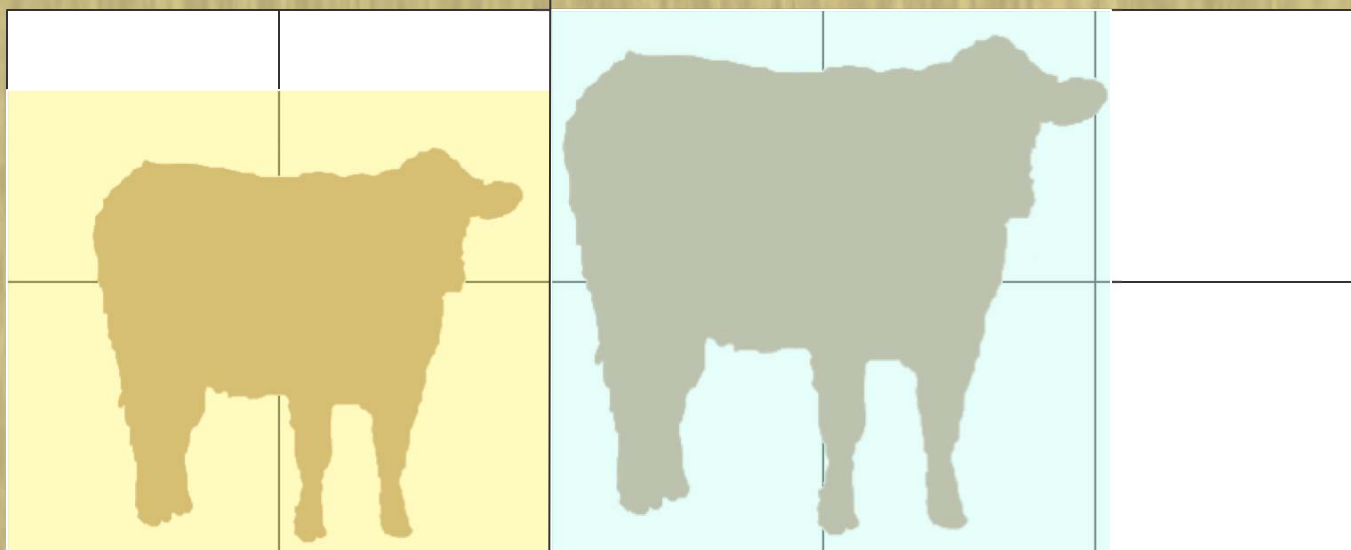
* Intake in dry lot of a ration that was 60% total digestible nutrients (TDN) and 9.8% crude protein versus acres per month grazing pasture in western North Dakota producing 1,560 pounds of herbage per 30.5 day months.

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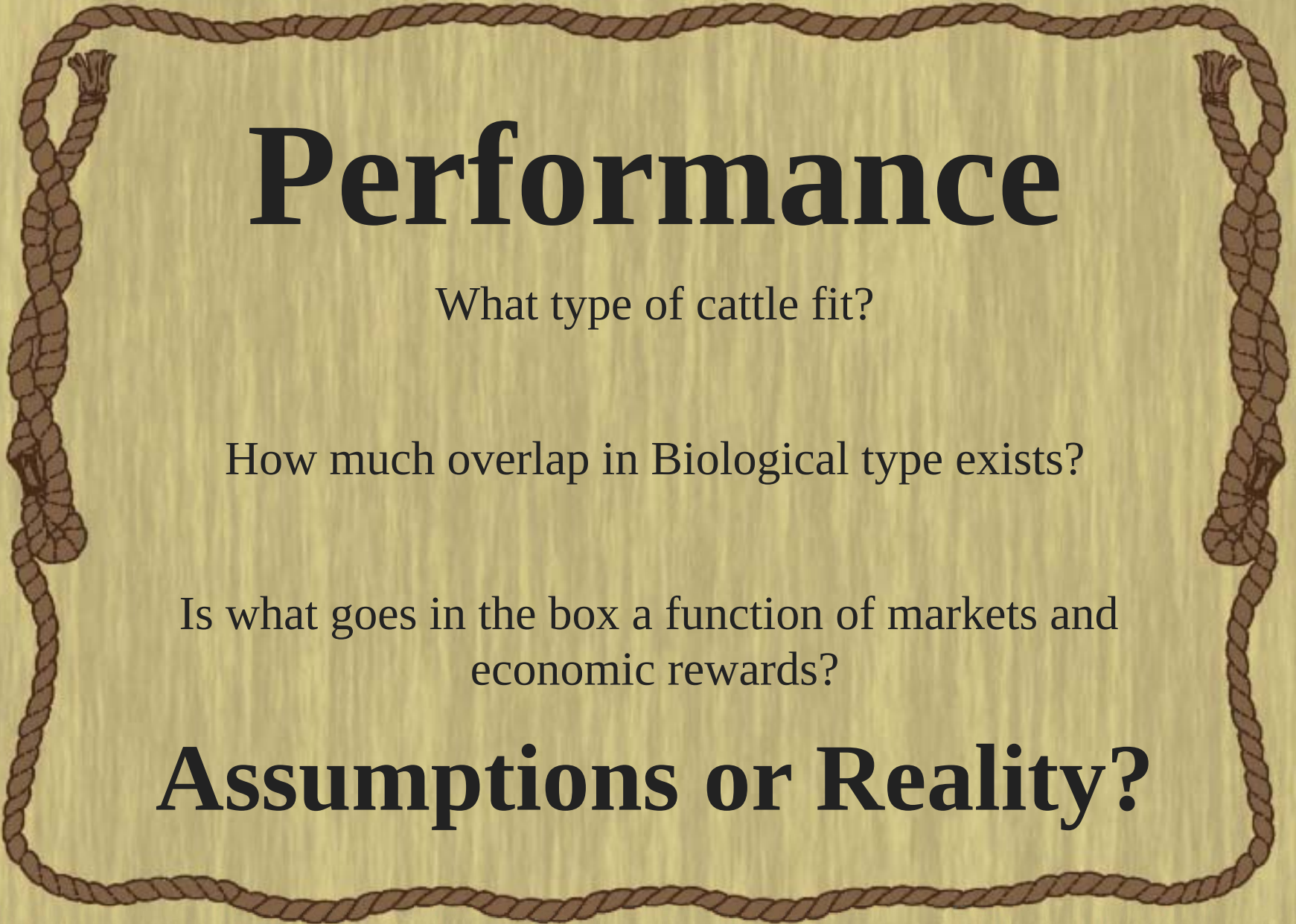
50 lighter
cows need
528.75 acres

50 heavier
cows need
641.25 acres

Per Month
of Grazing



**In terms of feed inputs, the heavier cows needed approximately
23 tons more as fed dry matter or 113 more acres to graze**



Performance

What type of cattle fit?

How much overlap in Biological type exists?

Is what goes in the box a function of markets and economic rewards?

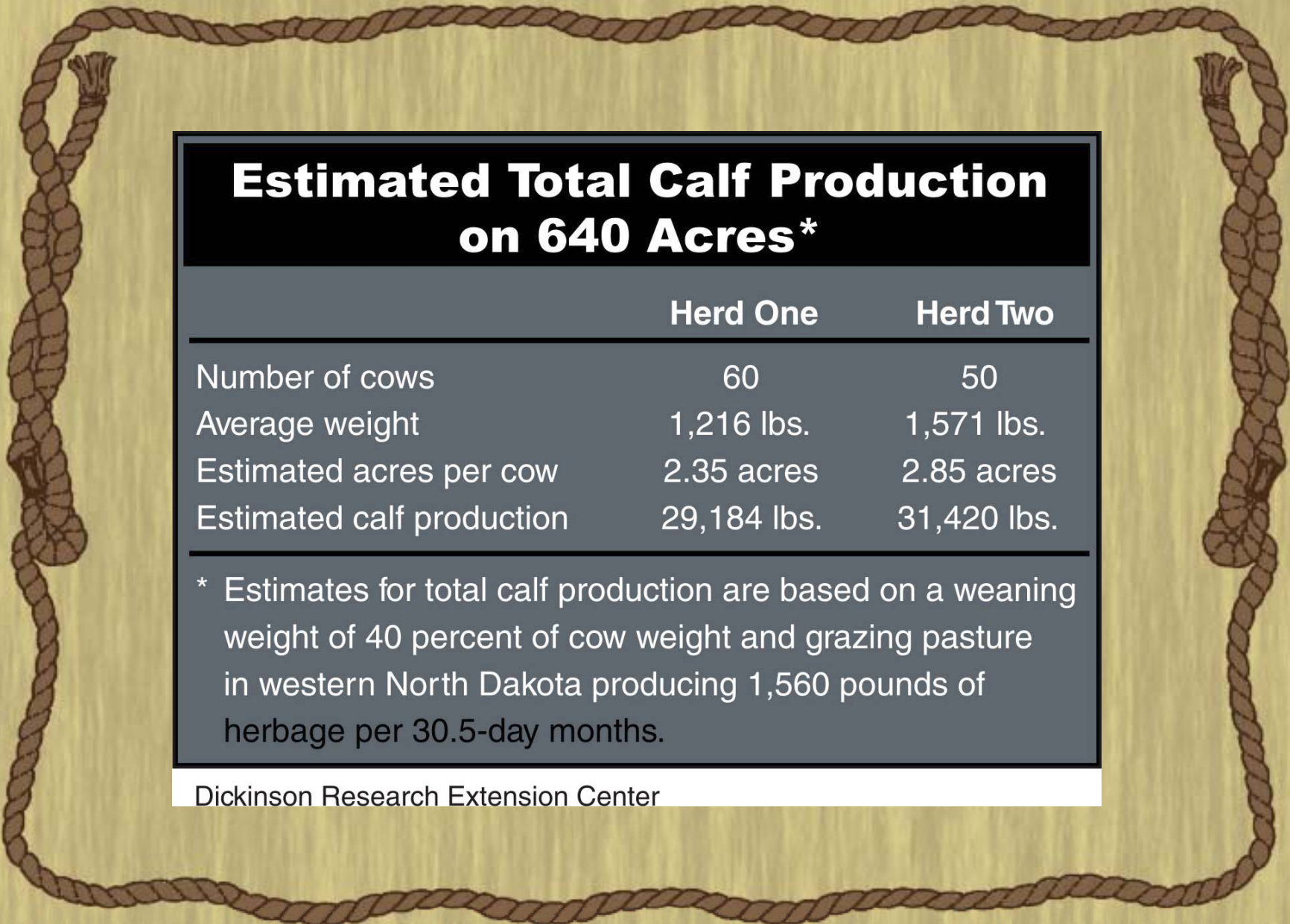
Assumptions or Reality?



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Estimated Total Calf Production on 640 Acres*

	Herd One	Herd Two
Number of cows	60	50
Average weight	1,216 lbs.	1,571 lbs.
Estimated acres per cow	2.35 acres	2.85 acres
Estimated calf production	29,184 lbs.	31,420 lbs.

* Estimates for total calf production are based on a weaning weight of 40 percent of cow weight and grazing pasture in western North Dakota producing 1,560 pounds of herbage per 30.5-day months.

Dickinson Research Extension Center

Don't make assumptions!
So lets look at real production!



Percentage of Cow Weight Weaned

Weight Range (pounds)	Average Number of Records	Average Calf Weaning Weight	Percentage of Cow Weight at Weaning	Cow Weight Weaned
Less than 1,300	37	617	1,242	50%
1,301 - 1,400	39	611	1,357	45%
1,401 - 1,500	38	589	1,456	41%
1,501 - 1,600	33	598	1,549	39%
Greater than 1,600	22	572	1,698	34%

Based on performance records when 5 to 9 years of age for the Dickinson Research Extension Center cows enrolled in the North Dakota Beef Cattle Improvement Association's CHAPS programs.

Herd A Ratios

Calf WW and Cow Weight

Weight Range	WW	Cow Wt	Ratio	# of Head
1301-1400	576	1368	0.42	15
1401-1500	599	1459	0.41	33
1501-1600	593	1551	0.38	25
>1600	579	1713	0.34	30

Herd B Ratios

Calf WW and Cow Weight

Weight Range	WW	Cow Wt	Ratio	# of Head
1301-1400	644	1368	0.47	7
1401-1500	670	1464	0.46	14
1501-1600	645	1561	0.41	43
1601-1700	652	1659	0.39	31
>1700	664	1787	0.37	31

Herd C Ratios

Calf WW and Cow Weight

Weight Range	WW	Cow Wt	Ratio	# of Head
<1200	544	1150	0.47	32
1201-1300	554	1254	0.44	66
1301-1400	554	1349	0.41	87
1401-1500	556	1447	0.38	56
1501-1600	556	1547	0.36	49
>1600	556	1683	0.33	14

Herd 38 Ratios

Calf WW and Cow Weight

Weight Range	WW	Cow Wt	Ratio	# of Head
<1200	580	1120	0.52	16
1201-1300	621	1258	0.49	50
1301-1400	614	1352	0.45	73
1401-1500	605	1448	0.42	67
1501-1600	602	1549	0.39	55
>1600	587	1698	0.35	35
Overall Avg.	606	1423	0.43	296

Loala Ratios

Calf WW and Cow Weight

Weight Range	WW	Cow Wt	Ratio	# of head
<900	429	847	0.51	19
901-1000	436	941	0.46	15
1001-1100	462	1051	0.44	19
1101-1200	449	1159	0.39	13
>1200	446	1246	0.36	16
Overall Avg.	444	1037	0.44	82

All Cows Ratios

Calf WW and Cow Weight

Weight Range	WW	Cow Wt	Ratio	# of Head
<1200	547	1139	0.48	58
1201-1300	576	1256	0.46	130
1301-1400	579	1353	0.43	195
1401-1500	591	1451	0.41	177
1501-1600	596	1551	0.38	176
>1600	614	1711	0.36	141
Overall Avg.	588	1442	0.41	877

Calf Size Ratios Relative to Cow Size

	<1200	1201-1300	1301-1400	1401-1500	1501-1600	>1600
H38	0.52	0.49	0.45	0.42	0.39	0.35
Herd A	N/A	N/A	0.42	0.41	0.38	0.34
Herd B	N/A	N/A	0.47	0.46	0.41	0.39
Herd C	0.47	0.44	0.41	0.38	0.36	0.33
Average	0.48	0.46	0.43	0.41	0.38	0.36

CHAPS Gelbvieh Producers vs. CHAPS Benchmarks

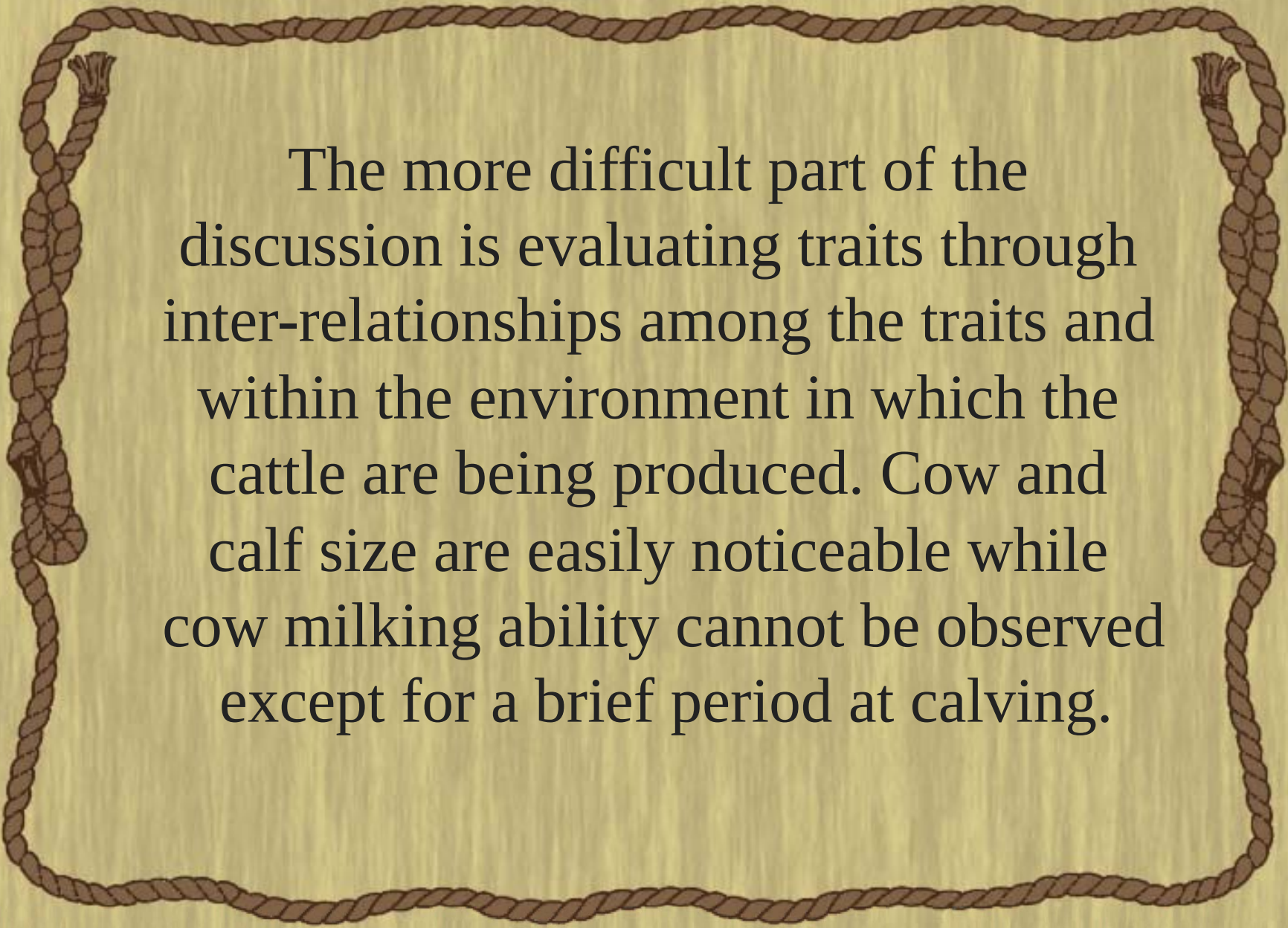
Item	Herd 1	Herd 2
Pregnancy Percentage	Above	Above
Pregnancy Loss Percentage	Above	Below
Calving Percentage	Above	Above
Calf Death Loss	Below	Below
Weaning Percentage	Above	Above
Average Age at Weaning	Below	Below
Average Weaning Weight	Above	Above
Weight per Day of Age	Above	Above
Sex Adjusted 205 Day Weight	Above	Above
Pounds Weaned per Cow Exposed	Above	Above
Birth Weight	Above	Above
Average Daily Gain	Above	Above
Average Steer Weaning Weight	Below	Above
Average Heifer Weaning Weight	Above	Above
Average Bull Weaning Weight	Above	Above

Gelbvieh Traits As Rated By Meat Animal Research Center

Trait	GV Rank
Pounds Weaned per Cow Exposed	Highest
Milk Yield	2nd Highest
Percent Born Unassisted	2nd Highest
Weaning Weight	Highest
Yearling Weight	2nd Highest
Percent Retail Yield	2nd Highest
Scrotal Circumference	Highest
Cow Size	Lowest

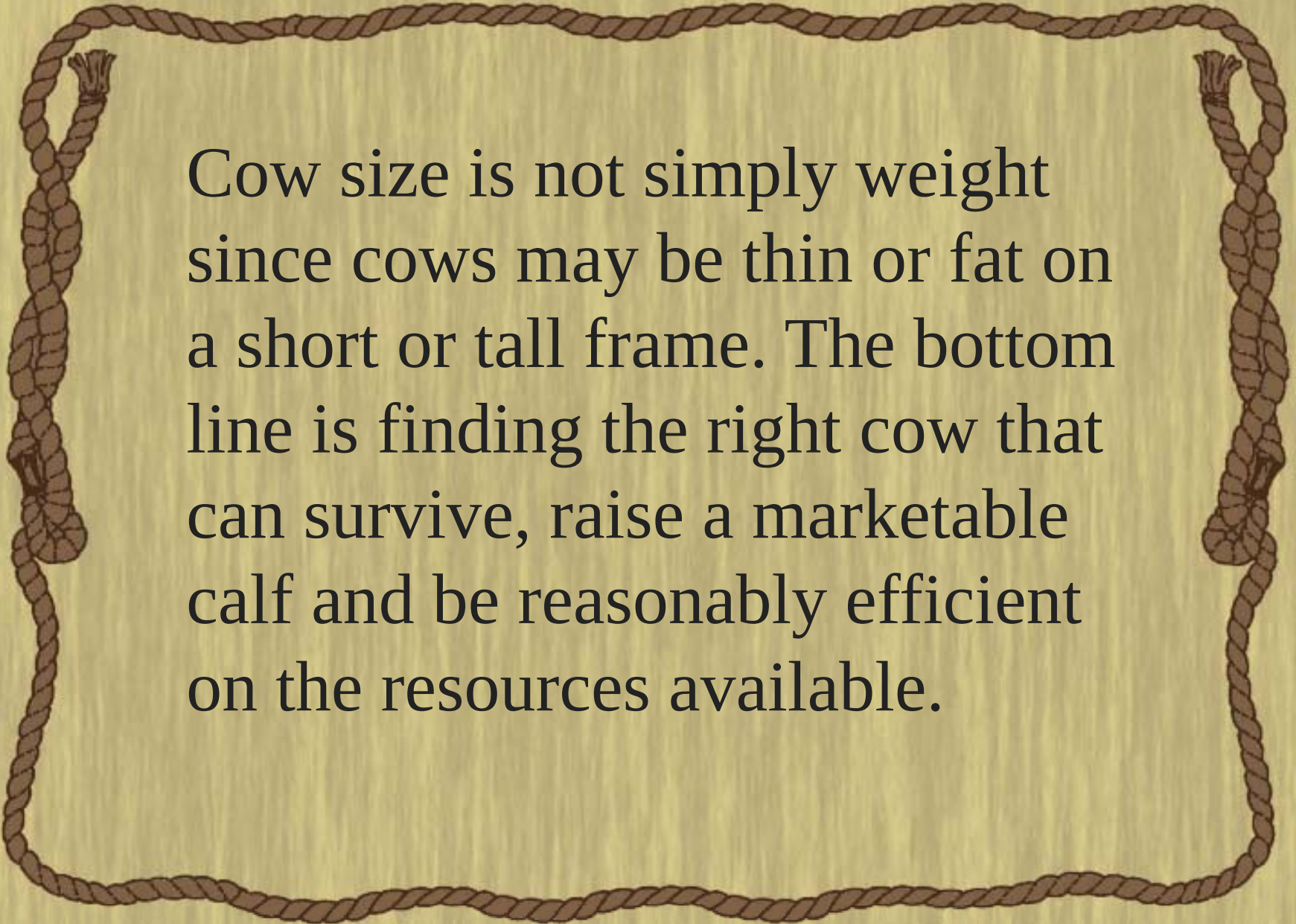
Many factors come
into play!





The more difficult part of the discussion is evaluating traits through inter-relationships among the traits and within the environment in which the cattle are being produced. Cow and calf size are easily noticeable while cow milking ability cannot be observed except for a brief period at calving.





Cow size is not simply weight since cows may be thin or fat on a short or tall frame. The bottom line is finding the right cow that can survive, raise a marketable calf and be reasonably efficient on the resources available.

The right cow:



Not extreme in any trait

Combines several traits into one efficient working unit.

The unit needs to be bred to a bull that will settle the cow and add value to the calf, which, in the end, will pay the bills.

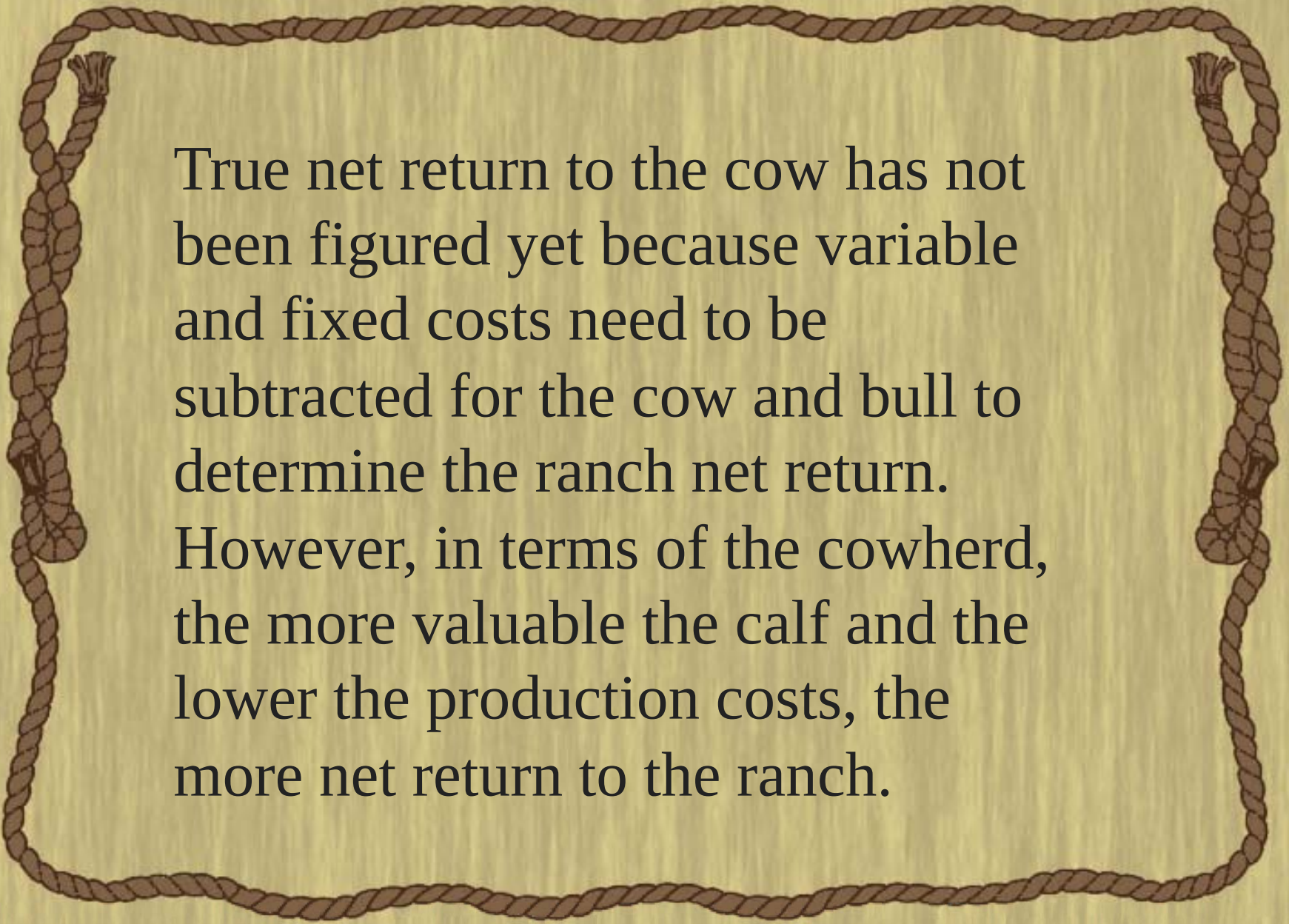
LOT CLOSEOUT

55 Dickinson Research Extension Center Steers

Date Received at the Feed Yard . . . January

Average Sale Date May

Average Net Return to the Ranch..... \$776



True net return to the cow has not been figured yet because variable and fixed costs need to be subtracted for the cow and bull to determine the ranch net return. However, in terms of the cowherd, the more valuable the calf and the lower the production costs, the more net return to the ranch.



It takes the right cow mated to the
right bull in the local environment
to make the desired net return.

Calf Report Card:

ADG = 4.27

Feed Efficiency: 4.69 (Dry matter to gain)

Frame score = 5.1



Calf Report Card:

REA = exceeded required measurement

YG = 2.36

Live weight = 1,277

% choice or higher = 41.7

We still have the cows!



The long-term question:

**What cow do
we need?**





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Cow Performance Comparison

Cow size	Dry Matter Intake	Acres	Calf WW	Pasture Gain	Gain/Acre
< 1300	933 lbs	10.75	617	336	31.21
1,501-1,600	1101 lbs	12.68	598	323	25.49

It never hurts to have



FOOD
more
for
THOUGHT
for Supper

CHAPS Benchmarks

How do you compare?

How does your herd compare? Use the checklist below to find out. The CHAPS Benchmarks are the 5-year rolling average from over 100,000 cattle records processed by the NDBCIA.

Calving Distribution Matrix

Time Frame	CHAPS Benchmark	Your Herd % Score
1st 21 days	63.4%	
1st 42 days	88.8%	
1st 63 days	95.5%	
After 63 days	4.5%	

Reproduction Performance

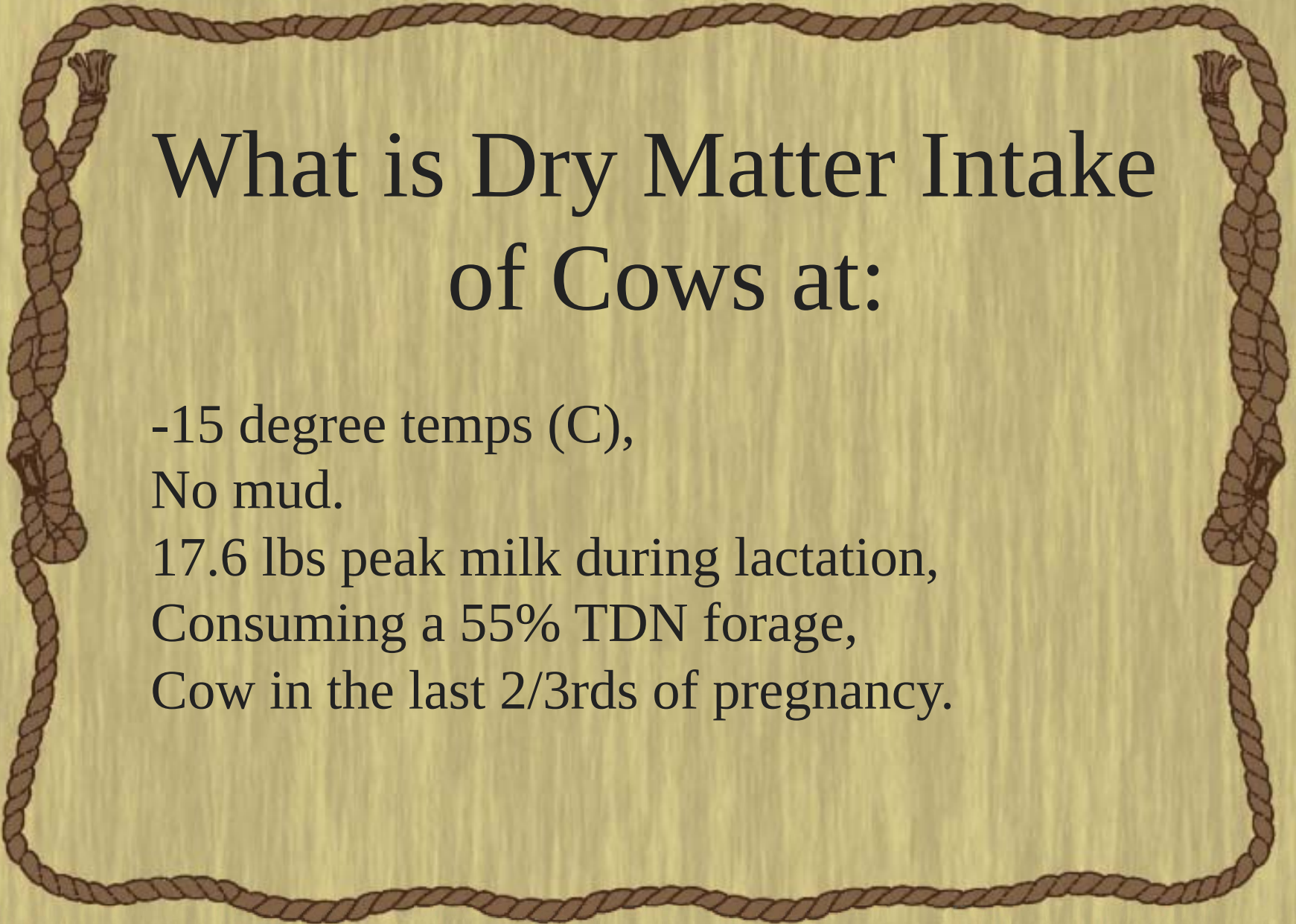
Cow Reproduction	CHAPS Benchmark	Your Herd Score
Pregnancy %	93.6	
Pregnancy Loss %	0.7	
Calving %	92.9	
Calf Death Loss %	3.1	
Weaning %	91.1	
Replacement Rate %	15.2	
Culling %	13.7	

Production Performance

Calf Production	CHAPS Benchmark	Your Herd Score
Age at Weaning (days)	190	
Actual WW Steers	572	
Actual WW Heifers	545	
Actual WW Bulls	604	
Average WW	564	
WW/female exposed	503	
Weight per day of age	3.0	
WW expressed in pounds		
Frame Score (BIF scale)	5.7	

To participate, contact the NDBCIA:

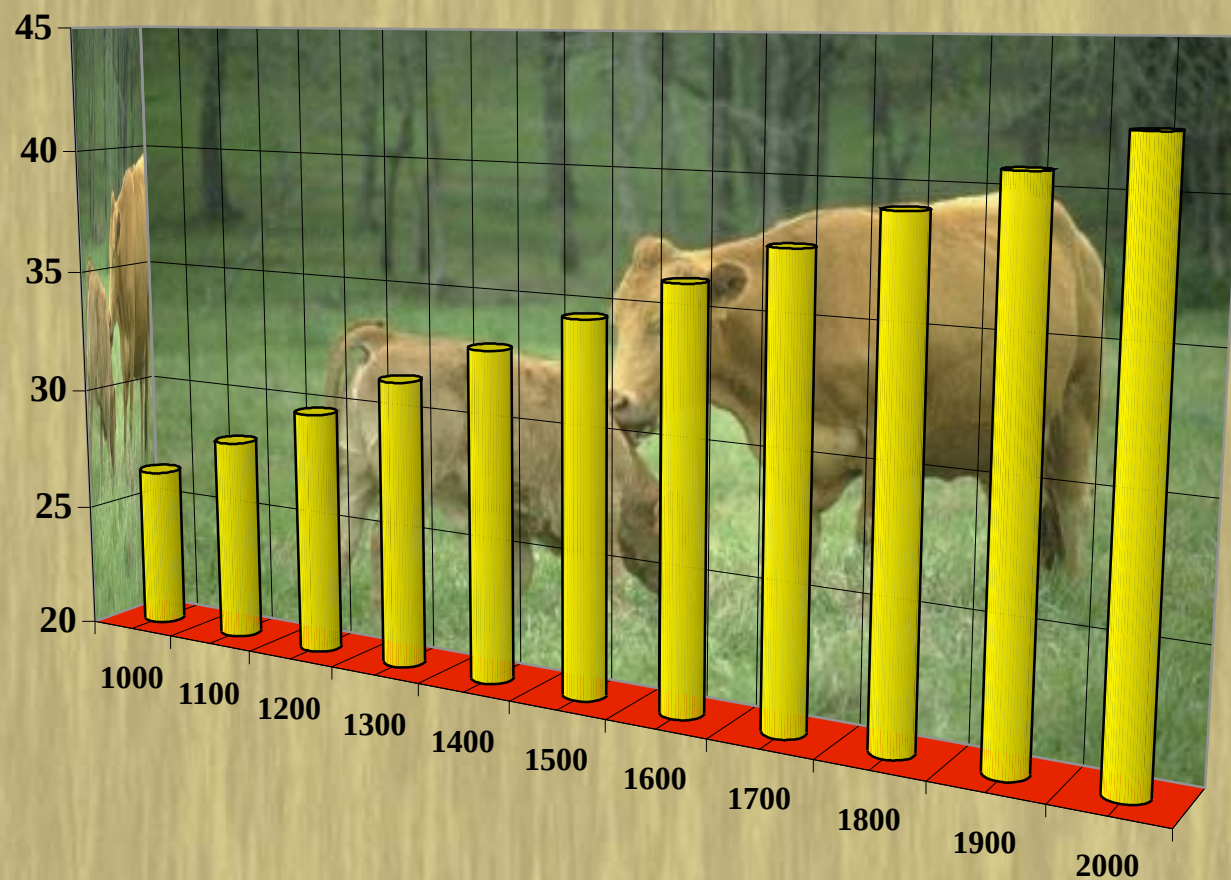
Mail: NDBCIA
1041 State Avenue
Dickinson, ND 58602
Phone: 701-483-2348 ext. 105
Email: chaps.ndsu@ndsu.edu



What is Dry Matter Intake of Cows at:

-15 degree temps (C),
No mud.
17.6 lbs peak milk during lactation,
Consuming a 55% TDN forage,
Cow in the last 2/3rds of pregnancy.

Dry Matter Intake (lb/d)



Numbers Produce



$$\frac{E}{h\nu} = \frac{4\pi}{c} \nu$$
$$\frac{d}{dx} \int_a^b$$
$$f(x) = \sum_{i=0}^{\infty} \frac{f^{(i)}(0)}{i!} x^i$$

Measurable Data

NDSU

DICKINSON
RESEARCH EXTENSION CENTER



Thank You
For The Chance To Talk
About The Beef Industry!