

**URUS**

*LEACHMAN*  
CATTLE

# Creating Feeder Cattle Profit

---

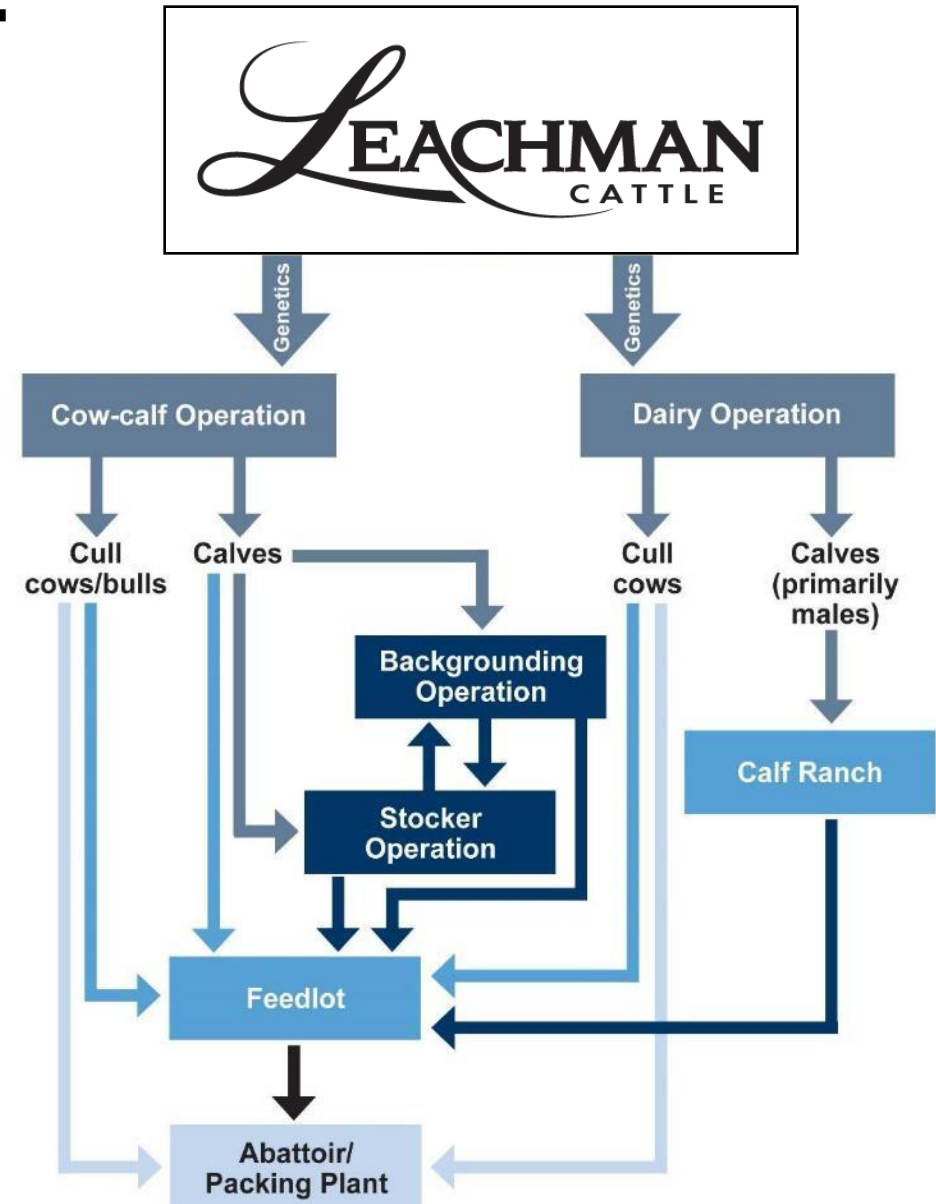
BIF – Knoxville, TN

6/10/2024

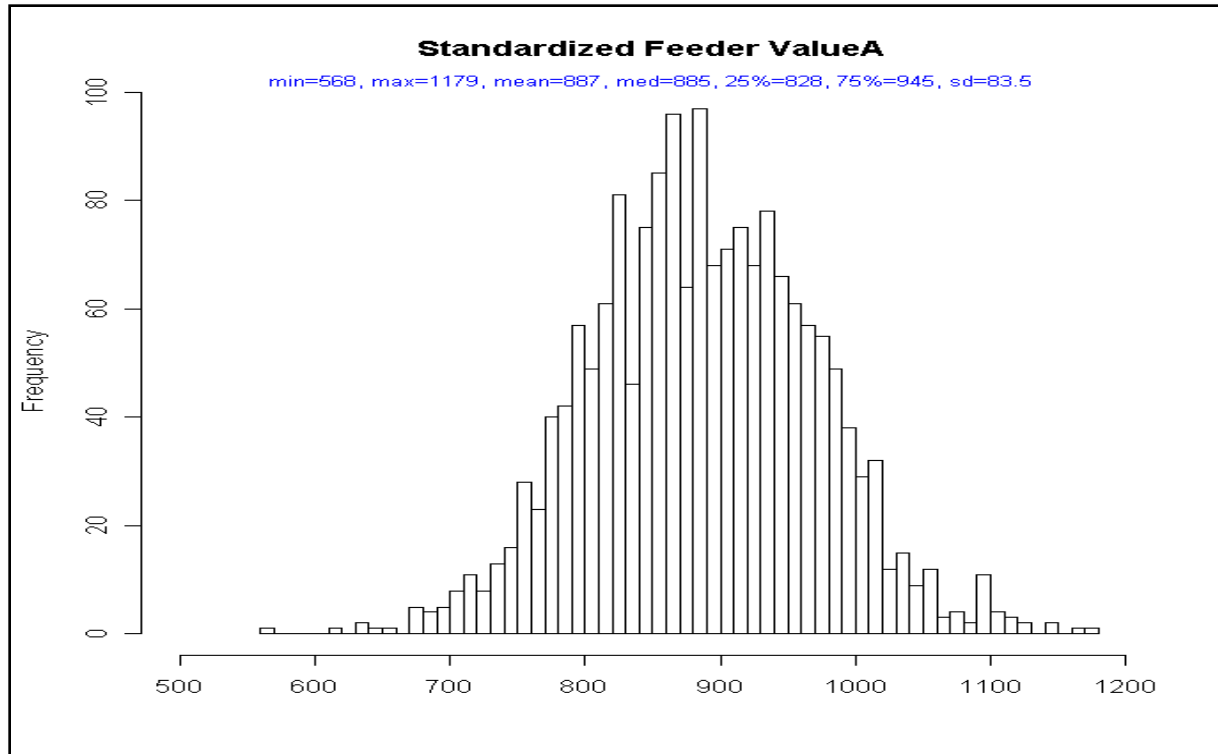


# The Problem & The Opportunity:

- People who mate the cow do not get paid for the genetic merit of the calf they produce!
- The supply chain does not pass accurate value signals.
- If we can fix this problem then we have a HUGE opportunity in the beef market.



# What is your calf worth at weaning?



- 35% Conversion
- 30% Carcass Value (marbling & yield)
- 18% Carcass Weight
- 17% Health
- The first three drivers are all very heritable!

A \$600 Spread from Top to Bottom

From 185,000 beef x beef steers at DCFY in Oberlin, KS

**(2012 data. Corn price of \$3.50 / bushel)**

## Feed Conversion Data



We currently have over 47,000 pedigree animals with feed intake records and growth traits.

# Profit Driver: Feed Conversion



A tale of two bulls...

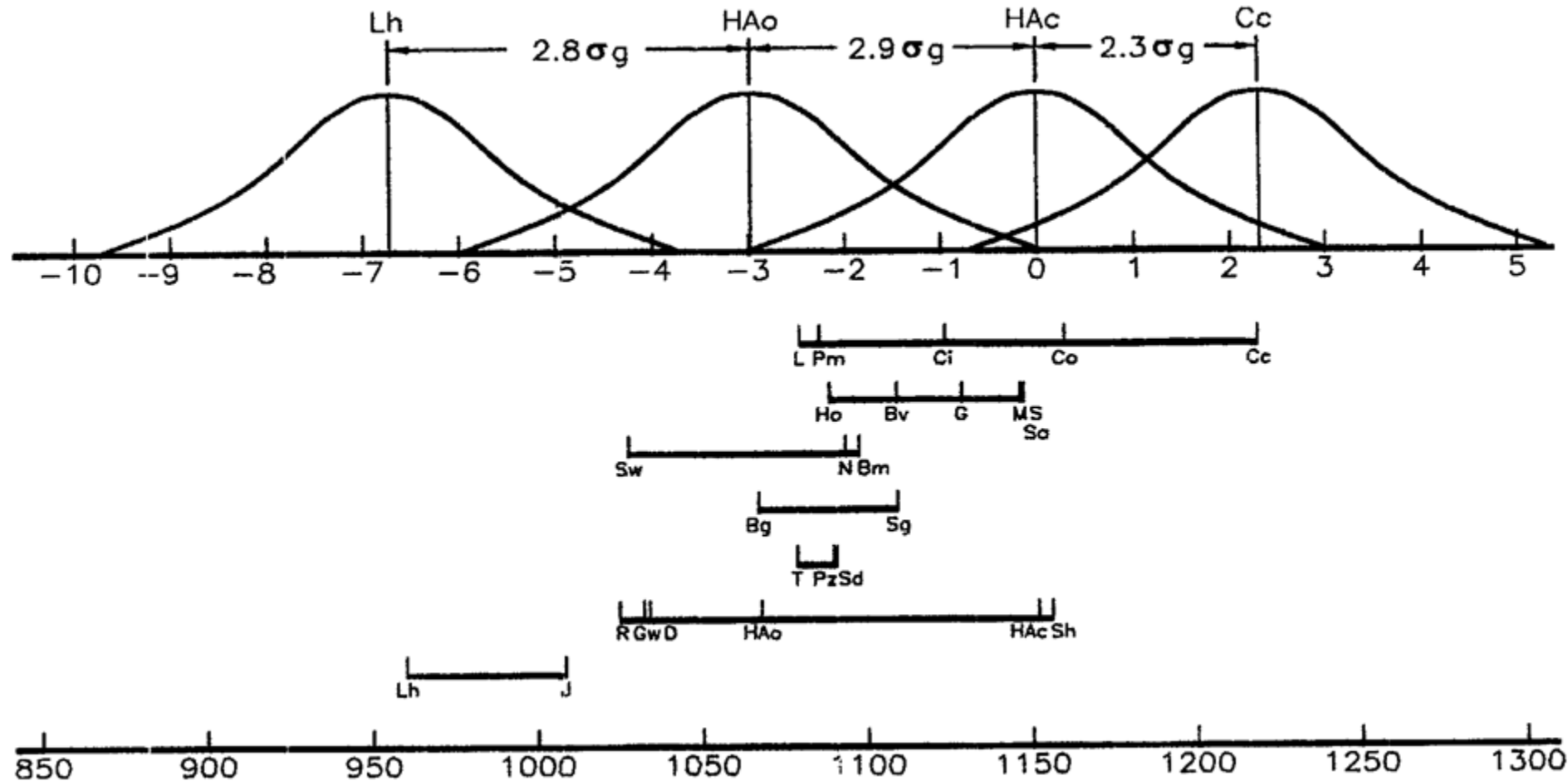


- Same herd. 1244 AYW vs. 1222 AYW.
- 17 vs. 42 lbs. of dry matter / day (9,125 lbs. / year).
- Converted 4 to 1 vs 10 to 1.
- 40% Heritable
- **Which bull's progeny do you want to feed?**

# Profit Driver: Carcass Weight



## Variation Between and Within Breeds



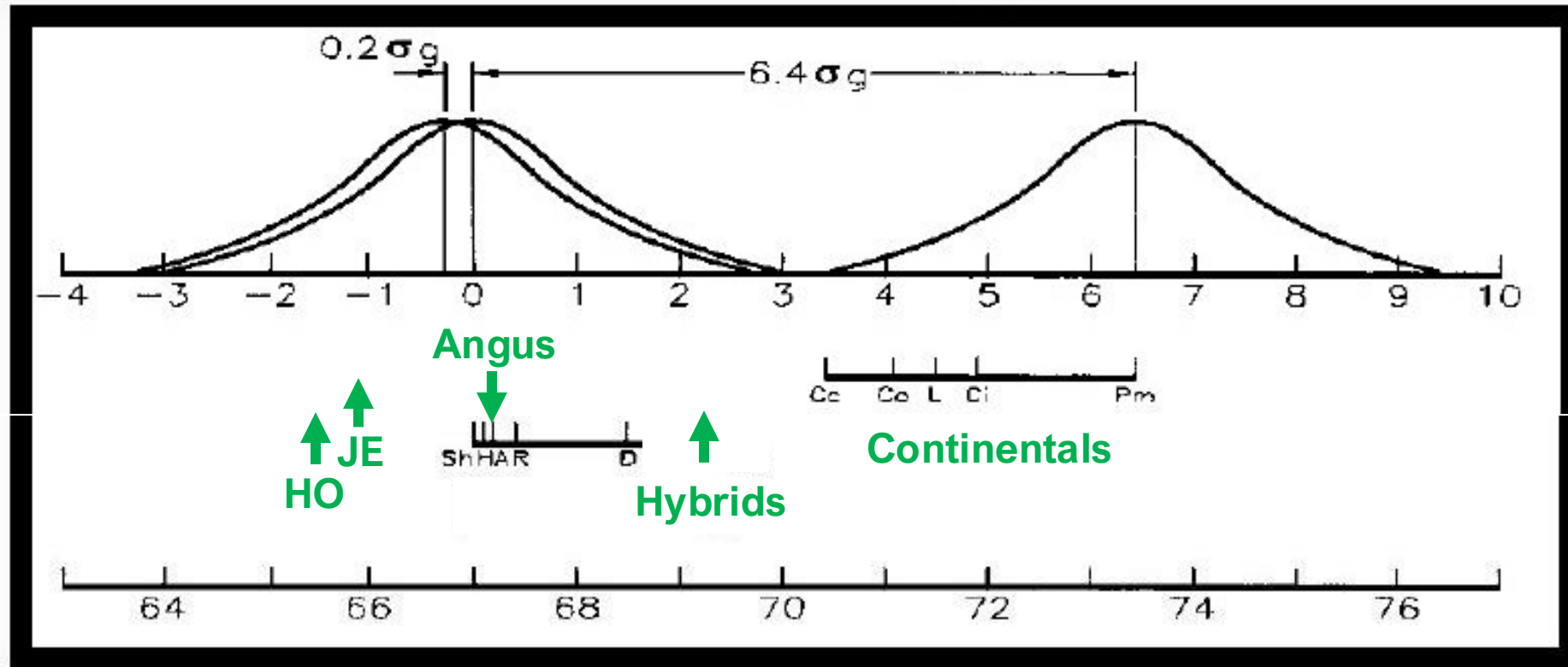
# Profit Driver: Beef quality is Marbling!



Colorado State University  
M.S. Thesis:  
M. R. Emerson  
(2011)



# Profit Driver: Cutability



**Retail Product, %**

Adapted from data from MARC, USDA ARS



# COMBINING FORCES



**A GLOBAL LEADER IN BEEF CATTLE BREEDING**  
**EXPANSIVE, MULTI-BREED DATABASE**  
**PROFIT-FOCUSED BREEDING PROGRAM**



**THE GLOBAL LEADER IN ANIMAL HEALTH**  
**BROAD EXPERTISE IN GENOMIC TECHNOLOGIES**  
**FOCUS ON CREATING VALUE FOR BEEF PRODUCERS**

# The Leachman Database

---



- Currently over 1.4MM animals in the database with annual contributions of over 30,000 animals per year. (Equates to one of the top 5 breed registries in the US.)
- 125,000+ SNP's power a weekly ssBLUP run performed by Zoetis.
- Calculate genomically enhanced EPD's on 27 traits and over ten indexes.



# The \$Profit Share Partners



# Can DNA Results predict feeder calf value?

---



# YES!





# Carcass Weight Predictions

- All cattle were fed Lincoln Co Feeders NE, harvested 2019-2020
- 2428 head genotyped with actual harvest data
- Analysis
  - Data sorted for Traits (CarcassWT, BF, IMF, REA, \$Feeder, & ZFC) best to worst
  - Assigned percentile groupings 10%-100% Bottom to Top for each trait and indexes.
  - Animals Averages are then calculated from actual harvest results



## Carcass Wt EPD %tile Compared to Actual Results

CarcassWT	Average Carcass Wt EPD	Average Actual Carcass WT
100%	<b>800</b>	<b>856</b>
90%	811	880
80%	818	882
70%	823	893
60%	827	885
50%	832	904
40%	837	903
30%	842	910
20%	849	906
10%	<b>862</b>	<b>917</b>

## Backfat Predictions



BackFat	Average BackFat EPD	Average Actual Backfat
90%	<b>0.015</b>	<b>0.786</b>
80%	0.000	0.755
70%	-0.010	0.710
60%	-0.020	0.698
40%	-0.030	0.657
30%	-0.040	0.636
20%	-0.050	0.600
10%	<b>-0.068</b>	<b>0.521</b>

# Marbling Predictions



IMF	Average IMF ABC	Average Actual Marb Score	Quality Grade	Choice & Up	Choice + & Up	Prime
100%	<b>-0.03</b>	<b>440</b>	100%	<b>64.1%</b>	<b>3.1%</b>	<b>0.4%</b>
90%	0.13	478	90%	83.9%	9.6%	0.9%
80%	0.21	497	80%	90.1%	9.9%	2.5%
70%	0.27	501	70%	84.3%	14.9%	5.3%
60%	0.32	525	60%	93.6%	21.5%	5.9%
50%	0.37	540	50%	94.7%	22.4%	7.8%
40%	0.42	557	40%	96.7%	27.5%	11.9%
30%	0.49	551	30%	93.4%	31.1%	10.7%
20%	0.56	589	20%	99.1%	43.6%	16.4%
10%	<b>0.70</b>	<b>619</b>	10%	<b>98.8%</b>	<b>54.4%</b>	<b>29.9%</b>

## Ribeye Area Predictions



REA	Average REA EPD	Average Actual REA
100%	<b>0.25</b>	<b>13.83</b>
90%	0.37	14.04
80%	0.44	14.23
70%	0.49	14.19
60%	0.55	14.49
50%	0.60	14.46
40%	0.65	14.51
30%	0.70	15.00
20%	0.78	15.08
10%	<b>0.92</b>	<b>15.44</b>



## Can DNA based Indexes Value Feeder Cattle?

(All cattle sorted by Leachman \$Feeder)

\$Feeder Percentiles	# Head	Average \$Feeder	Average Carcass Wt	Average Actual REA
1%	25	226	942	15.0
Average	2428	82	893	14.5
Difference			48	0.5

**Much Bigger Carcasses!**



## Can DNA based Indexes Value Feeder Cattle?

\$Feeder Percentiles	Average Marb Score	Choice & Higher	Upper 2/3 Choice & Higher	Percent Prime
1%	628	100.0%	100.0%	32.0%
Average	528	89.5%	23.4%	9.0%
Difference	99	10.5%	76.6%	23.0%

**Way More Marbling!**



# Can DNA based Indexes Value Feeder Cattle? **YES!**

\$Feeder Percentiles	Average Value/Hd	Avg ADG	Avg DOF	Calc. DMI	Calculated Feed:Gain
1%	\$1,729	3.49	239	20.8	5.98
Average	\$1,592	3.22	239	20.6	6.38
Difference	\$137	0.26	0	0.26	-0.41

**More Value AND Better Cost!**





# Questions We are Still Trying to Answer

- Is the best measure for feed efficiency based on bull feeding data?
- What is the best endpoint for carcass weight adjustment?
- How will we predict red meat yield?
- Should we be using systems with terminal sires?
- How will these technologies be adapted and used in commerce?



# Questions?

---



Lee  
Leachman

