Master Stockman

Managing Nutrition in Beef cow herd

Hudson Hill

RMA USDA United States Department of Agriculture Risk Management Agency

IFA COUNTRY STORES SINCE 1923

WESTERN AgCredit

UNIVERSITY OF WYOMING EXTENSION

nutrition=

- Energy
- Protein
- Minerals
- Water
- vitamins

Nutritional needs are based on:

- The age of the animal
- The growth rate
- Milk production
- Reproduction
- Activity
- The environment

Today

- I am not a nutritionist
- What do we manage?

One goal that all beef producers have in common

83 days

- What is significant to beef producers about 83 days

Nutrition is the major component of 83

- Reproduction efficiency is smokey

nutrition

Production Cycle of the Cow

Weaning

I	II	III	IV
Mid gestation	60-90 days precalving	Calving to rebreeding	Breeding to weaning
Maint.	Maint.	Maint.	Maint.
	Rapid fetal growth	Lactation	Lactation
	Prepare for lactation	Regain wt loss	
		Repair Repro. tract	

Figure 3. Production cycle of a beef cow emphasizing important nutritional and reproductive requirements.

Heifer nutrition is even more critical

- Based on age and weight
- What %of mature weight should heifer weigh

How do we manage cow herd

- BCS

BODY CONDITION SCORING (BCS))

- Score System 1 to 9
- Indicator of Nutritional Status
- Estimator of energy reserves
- BCS is linked with reproductive performance (% open, calving interval, calf vigor)

OPTIMUM CONDITION

- Cows with average BCS of 4
  - Will have poor reproductive performance
- It is desirable to maintain a BCS of 5 or more through breeding (14% body fat)
- If less than a 5 at calving… then what?
  - Must feed to improve condition for rebreeding

BCS	< 4	5	> 5
% Heat	62%	88%	98%

Percent in heat within 80 days after calving

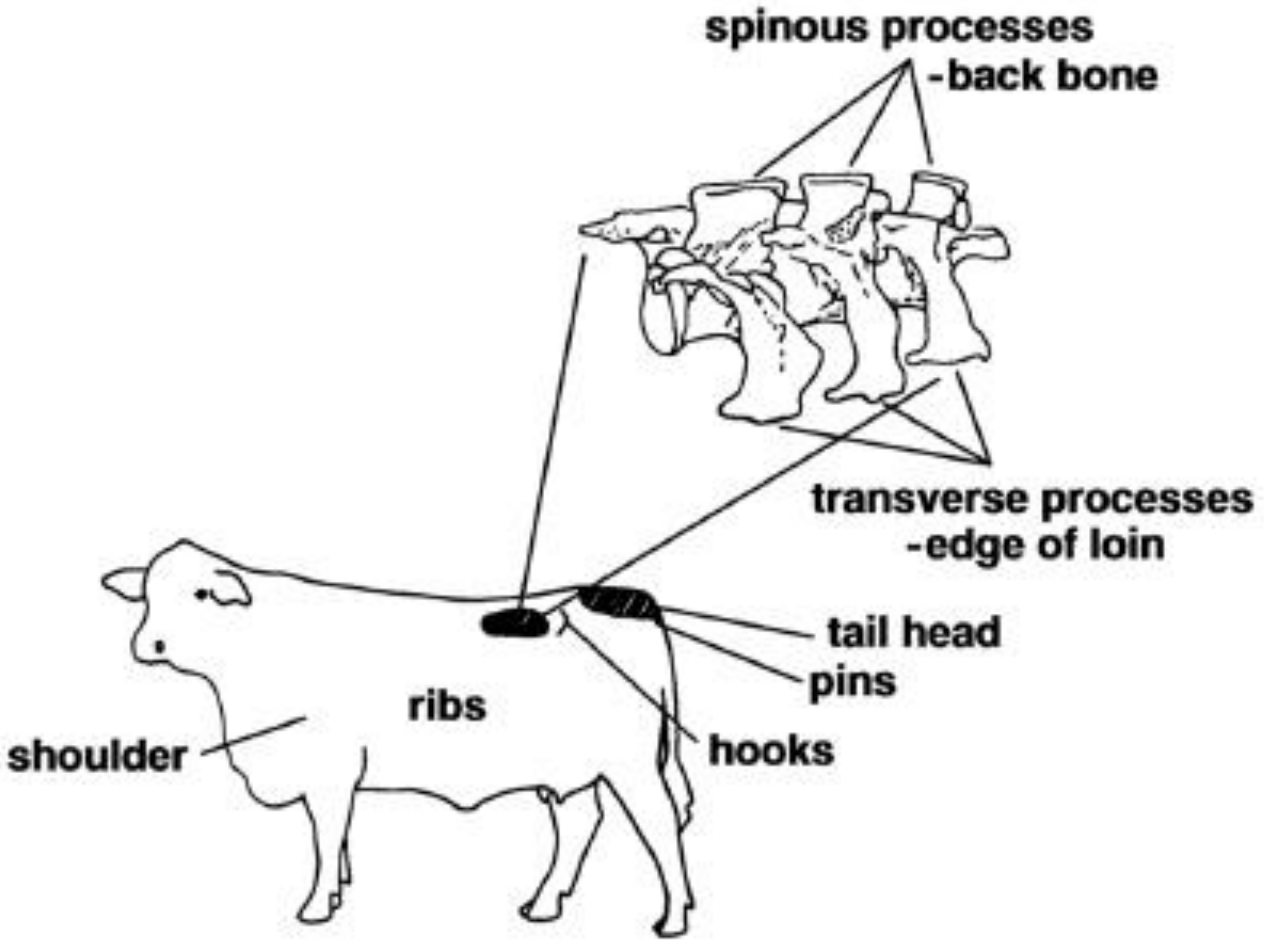
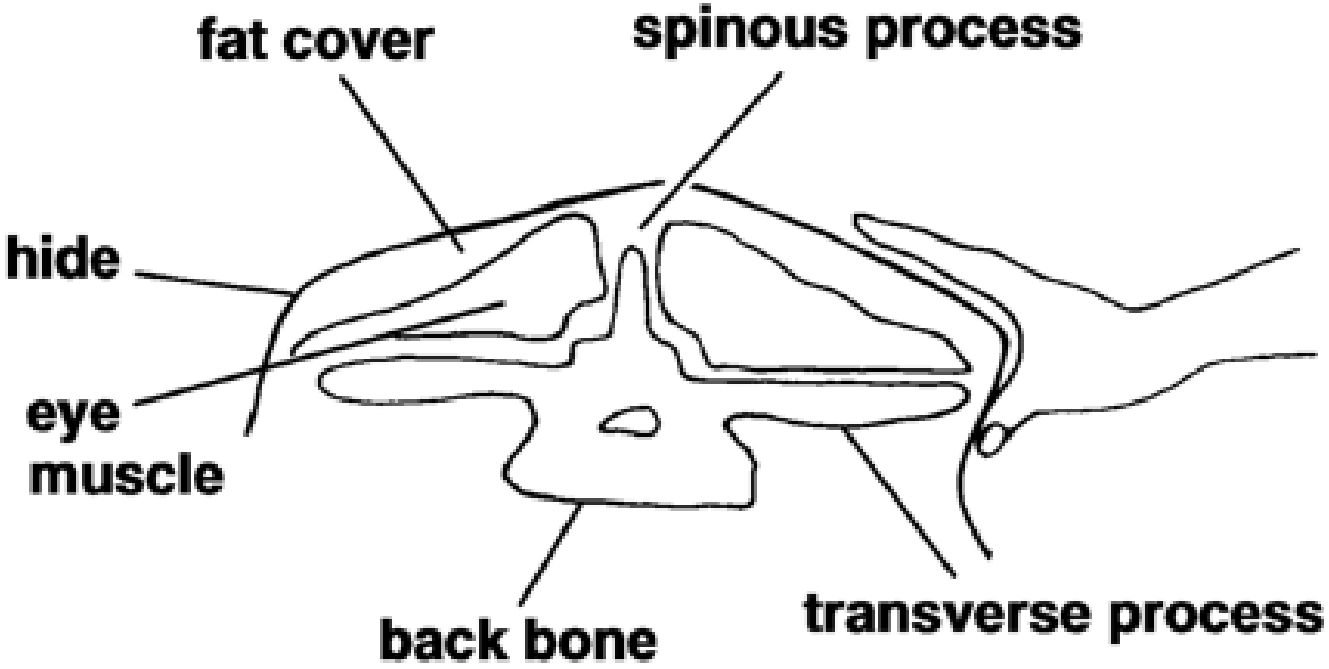


Diagram from Body Condition, Nutrition and Reproduction of Beef Cows, Texas AgriLife Extension Service Publication B 1526. Texas A&M University System. College Station, TX



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STEP 1

- Look at last two ribs (12th and 13th)
- If they are apparent, then BCS is below 5
- If they are not apparent then 5 or better


Step #1

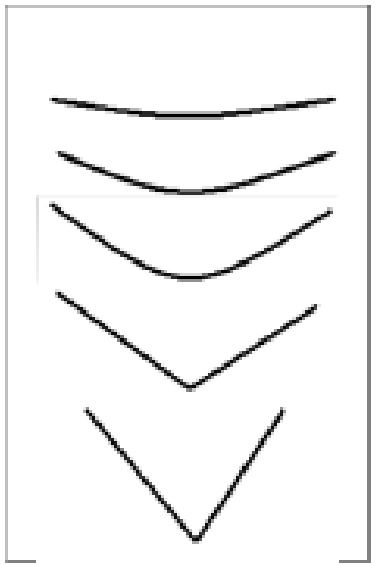
STEP 2

- Look at the transverse process
  - Aka the short ribs
- If visible then a 3 or less


Step #2

STEP 3

- Look for shape between the hooks and pins
  - Shallow U = BCS 6
  - Strong U = BCS 5
  - V Shape = BCS 4
  - Strong V = BCS 3
  - Very Strong V = 2




Step #3
Pin
Hook

LAST STEP

- Determine Tailhead Fatness by Getting rear view and looking down the back
- 5 = Tepee Effect 
- 6 = Flat 
- 7 = Indenture across back 
- 8 = Deep indenture across back
- 9 = Extra fat, trouble walking 

SO WHAT DO YOU CALL HER?


3.5

4.0


3.0

5.0


2

What % of cost are associated with feed costs

Should we feed cows less?

Master Stockman

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Importance of Feed Efficiency

- As feed, pasture and input prices increase, feed efficiency will become increasingly important
- As producers, we indirectly select for feed efficiency, but because it's indirect, it isn't always perfect
  - Cows that remain in good condition
  - Cows that continually breed back

Residual **Feed Intake (RFI)**

- Alternative measure of feed efficiency.

- RFI = Actual feed intake – Expected feed intake

Measured with GrowSafe

Estimated Requirement for Maintenance and Growth

This equation looks at individual efficiency AFTER adjustments are made for size, age and weight gain.

Residual Feed Intake

- Less efficient animals eat more than expected for their level of production and have positive residual feed intake (RFI)
- More efficient (desirable) eat less than expected, having negative RFI

Bull test program at UW-SAREC

- 10 GrowSafe nodes
  - Designed with 1 node per pen, removable electric wire cross fences to vary pen size and # of nodes.
- Winter SAREC Forage-Based bull test.
  - Producers consign multiples of 4 hd of bulls.
  - Predominantly forage (60%) ration
  - Target gain of 3.25 lb/d, 13.5% CP
  - Station-grown corn and haylage, custom pellet
  - Receive bulls Nov. 15, finish by Feb 1.

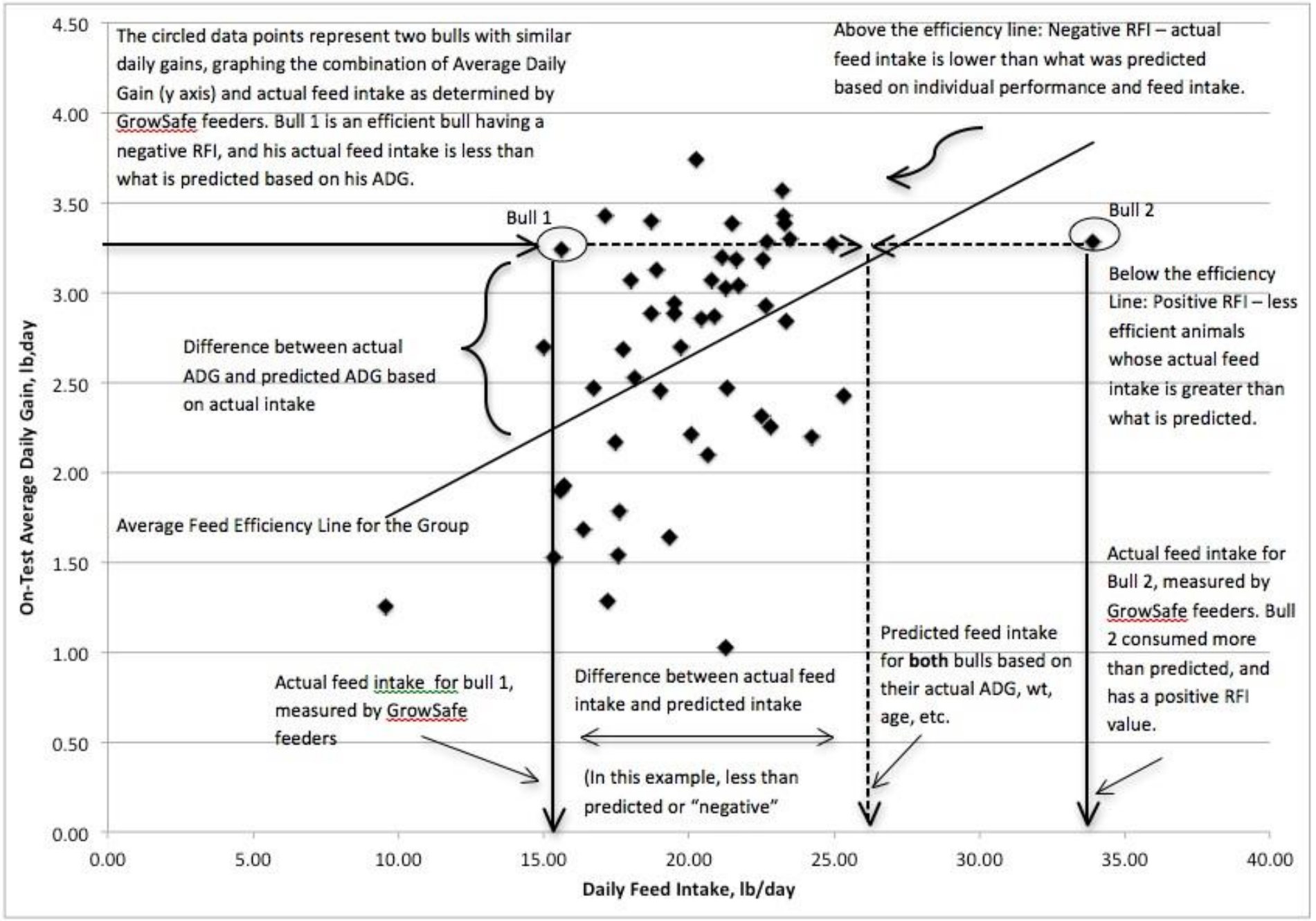


Figure 1. Actual ADG and feed intake data from the 2010-2011 Wyoming Hereford Association forage-based bull test at SAREC.

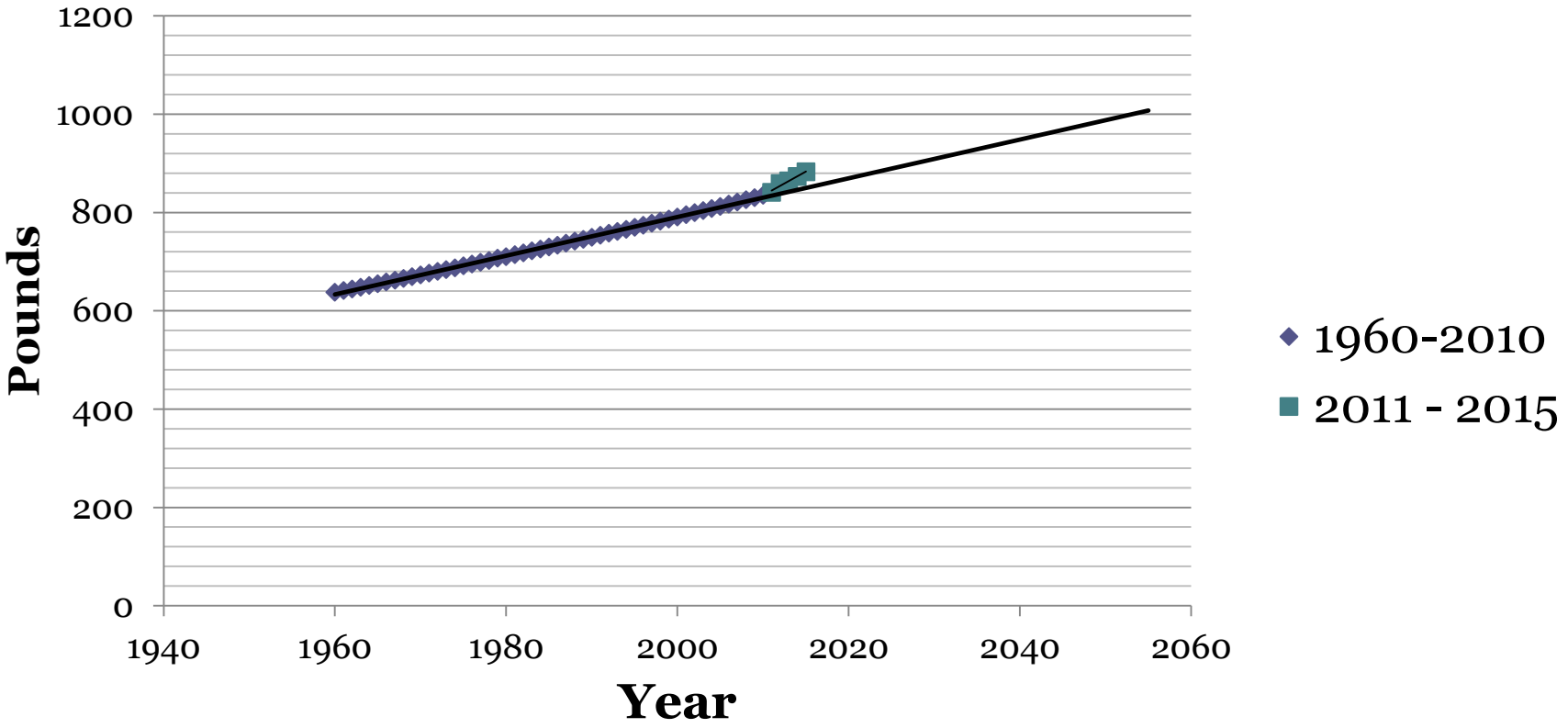
Challenges for cow calf producers:

- Feed efficiency ≠ production efficiency
- Genetically improving feed efficiency is slow
- Hard to capture premiums or incentives for genetically efficient calves
- Capitalizing and capturing improved feed efficiency on the ranch

Feeding cows less?

- What size of cow is most profitable??

Average Annual Steer Carcass Weights



2050 = 1035 pounds 2015 through Sept - 883

QUESTIONS?

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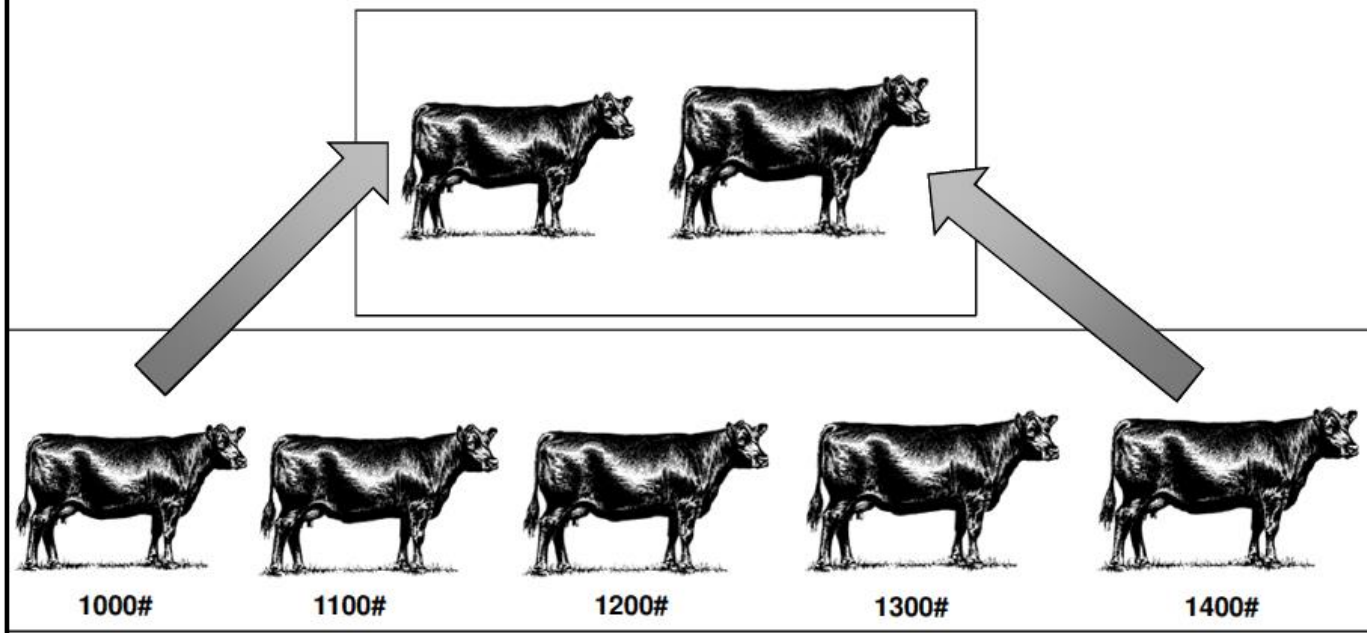
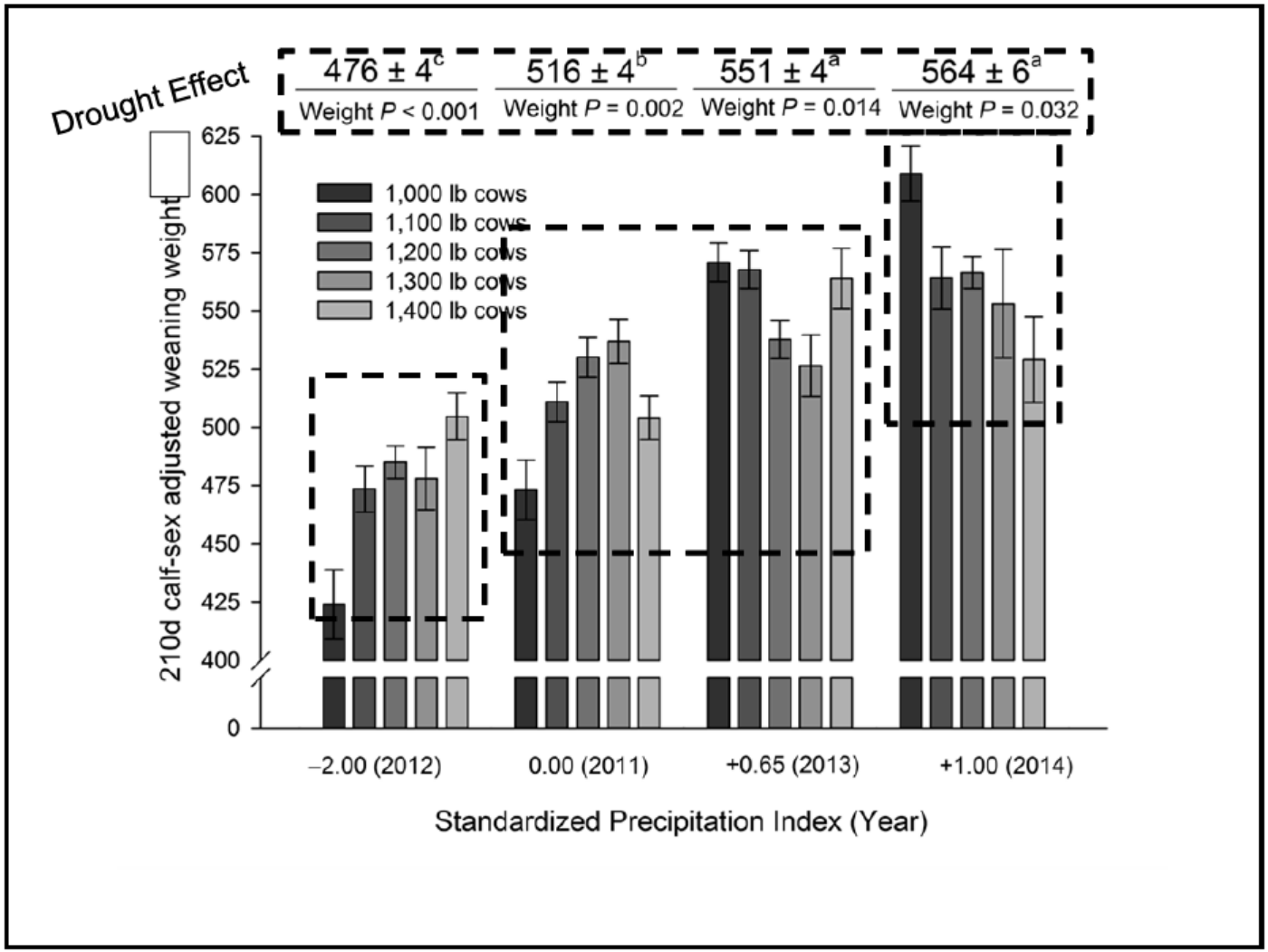
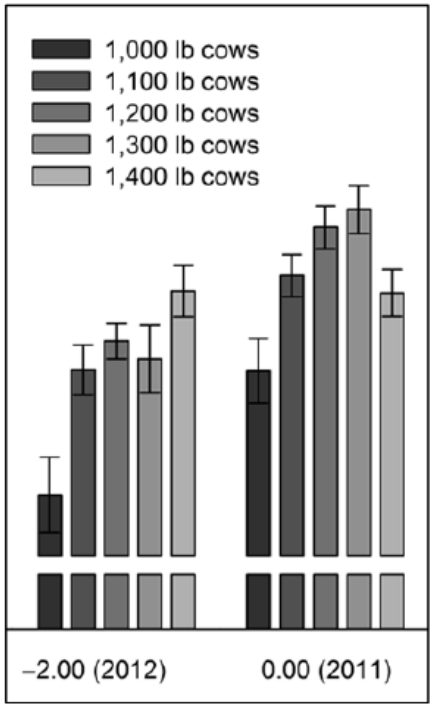
CAN WE SEE THE TREND?




Drought Effect
476 ± 4c
Weight P < 0.001
516 ± 4b
Weight P = 0.002
551 ± 4a
Weight P = 0.014
564 ± 6a
Weight P = 0.032
1,000 lb cows
1,100 lb cows
1,200 lb cows
1,300 lb cows
1,400 lb cows
210d calf-sex adjusted weaning weight
625
600
575
550
525
500
475
450
425
400
0
–2.00 (2012)
0.00 (2011)
+0.65 (2013)
+1.00 (2014)
Standardized Precipitation Index (Year)

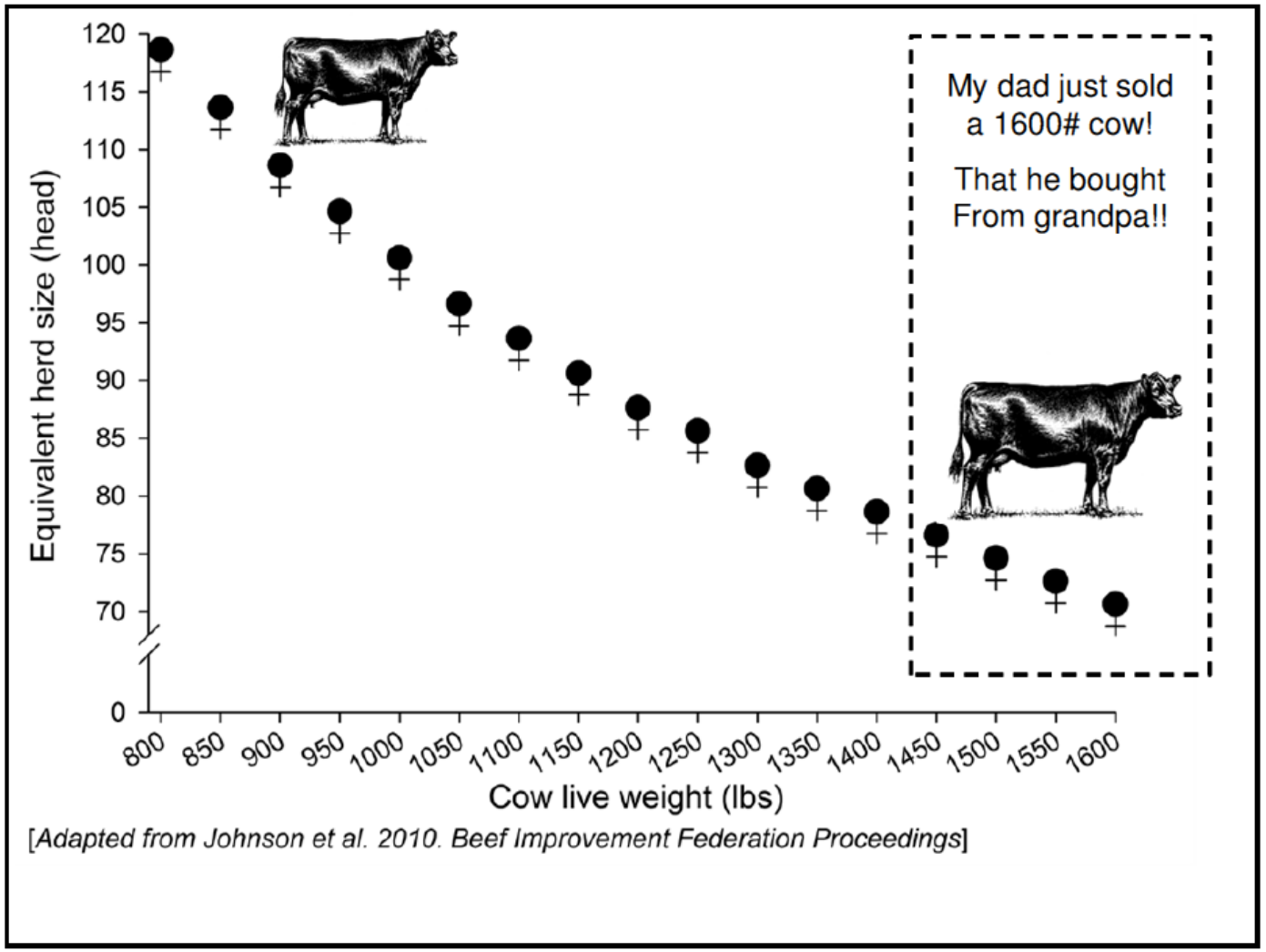
EFFECT OF COW SIZE IN THIS ENVIRONMENT

- Different sized cows had an advantage during different years
- Larger cows did not wean heavier cows under the best of conditions
  - Did not maximize genetic potential
- In the driest of years cow size mattered



COW SIZE AND DROUGHT INTERACTION

- Dry matter intake per cow increases 0.04 pounds for each liter increase in rumen capacity under low quality forage conditions
- No such relationship exists under high quality forage conditions
- Larger rumen = more rapid forage consumption (Purser and Moir 1966; Nutt et al. 1980)



[*Adapted from Johnson et al. 2010. Beef Improvement Federation Proceedings*]

COW SIZE AND FORAGE NEED EXAMPLE

- Linear assumption of 2.6% of body weight
- 300# heavier cow needs ~ 1 more ton of forage annually

Cow weight (lbs)	# forage per day	# forage per year
900	23.4	8,541
1,000	26.0	9,490
1,100	28.6	**10,349**
1,200	31.2	11,388
1,400	36.0	**13,140**
1,600	41.6	15,184

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