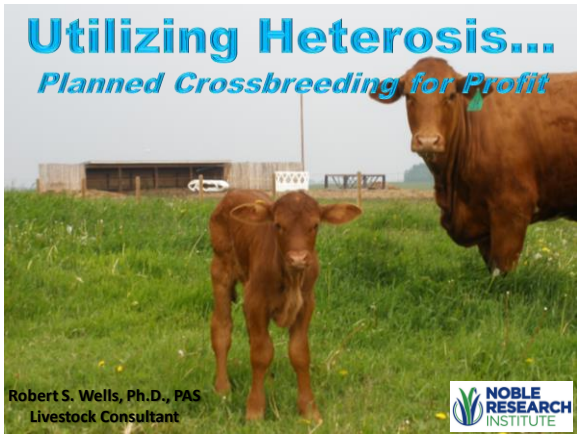
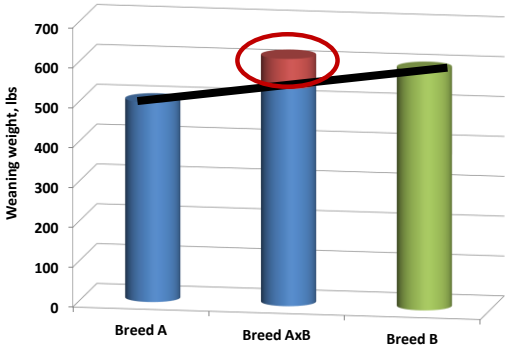


Heterosis = Hybrid Vigor

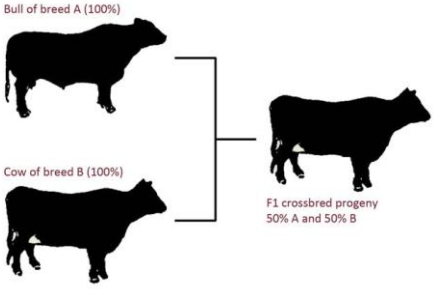


3 Types of Heterosis

Individual

Individual Heterosis

The degree to which crossbred calves deviate from the average of calves of the parental breeds.



Heterosis Levels for Selected Traits

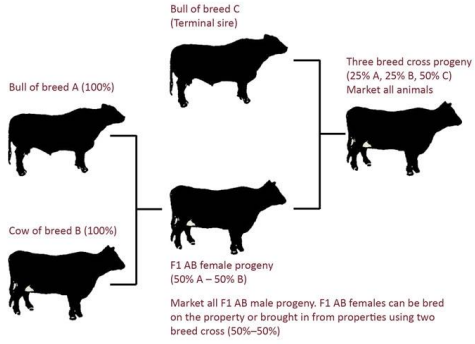
Trait	Individual Heterosis	Maternal Heterosis	Total Heterosis
Cow lifetime productivity			25
Cow longevity			38
Calving rate	0	6	6
Calf weaning wt/exposed cow			18
Weaning rate	0	8	8
Weaning weight	5	6	11
Yearling weight	4		4
% reaching puberty at 15 months	15		15
Days on feed	-4		-4
Carcass weight	**3**		**3**
USDA carcass grade	**2**		**2**

3 Types of Heterosis

Individual

Maternal

Maternal Heterosis



Maternal Heterosis

From using crossbred cows.

effects directly associated with the cross bred cow

Usually greater than individual heterosis for maternal traits

Heterosis levels for selected traits

Trait	Individual Heterosis	Maternal Heterosis	Total Heterosis
Cow lifetime productivity			25
Cow longevity			38
Calving rate	0	6	6
Calf weaning wt/exposed cow			18
Weaning rate	0	8	8
Weaning weight	5	6	11
Yearling weight	4		4
% reaching puberty at 15 months	15		15
Days on feed	-4		-4
Carcass weight	3		3
USDA carcass grade	2		2

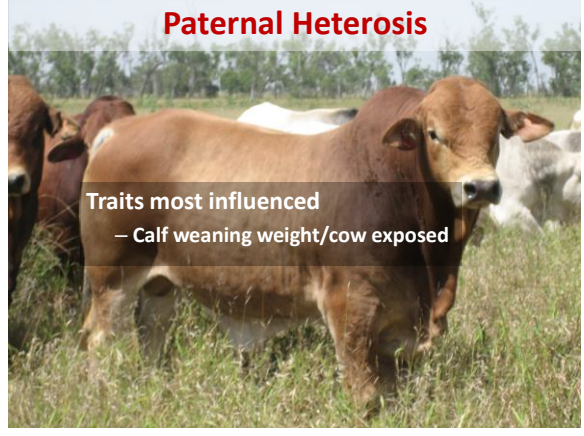
3 Types of Heterosis

Individual

Maternal

Paternal

Paternal Heterosis



Traits most influenced

– Calf weaning weight/cow exposed

Heterosis levels for selected traits

Trait	Individual Heterosis	Maternal Heterosis	Total Heterosis
Cow lifetime productivity			25
Cow longevity			38
Calving rate	0	6	6
Calf weaning wt/exposed cow			18
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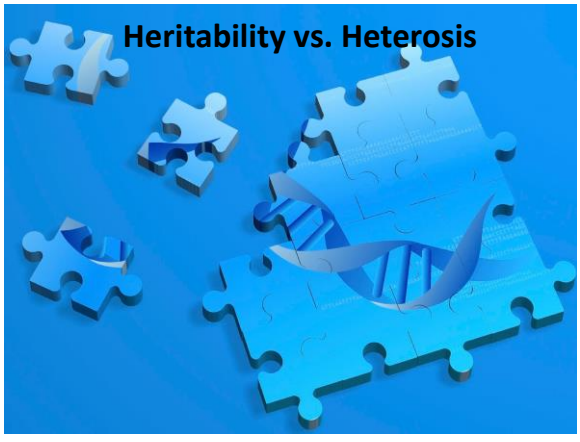
Weaning weight	5	6	11
Yearling weight	4		4
% reaching puberty at 15 months	15		15
Days on feed	-4		-4
Carcass weight	3		3
USDA carcass grade	2		2

Profit Drivers

- Weight
- Milk production
- Fertility
- Longevity



Heritability (h^2)and Total heterosis by trait class

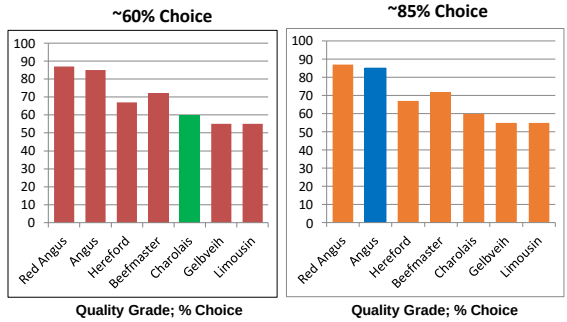
Trait	Heritability	Total Heterosis
Carcass	High (0.4 - 0.6)	Low (0 – 5%)
Growth	Medium (0.2 – 0.4)	Moderate (5 – 10%)
Reproduction	Low (< 0.2)	High (10 – 30%)

Few traits have $h^2 > 0.6$

Heritability Estimates

Height	0.85
REA	0.70
Tenderness	0.60
Birth weight	0.45
Feedlot gain	0.34
Weaning weight	0.24
Fertility	0.10
Calving interval	0.08
Conception rate	0.07

Breed Complementarity

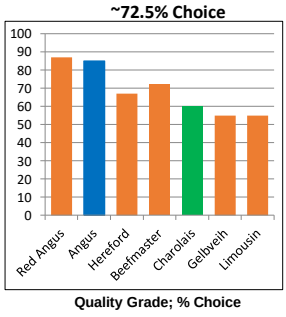


Cundiff et al., 2004

19

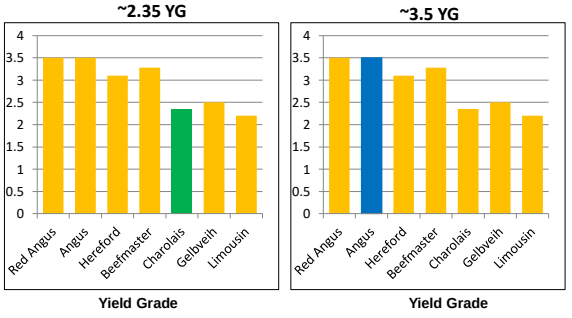
Breed Complementarity

F1 offspring



Cundiff et al., 2004

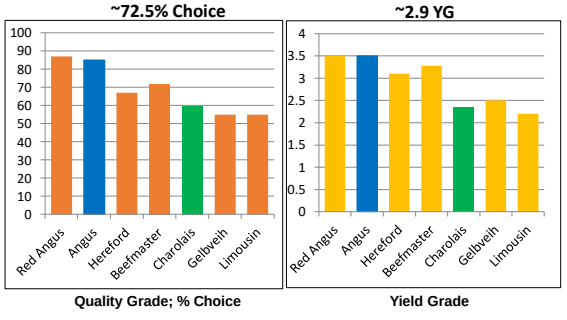
Breed Complementarity



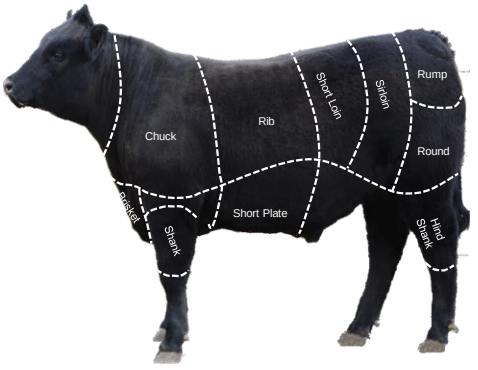
Cundiff et al., 2004

Breed Complementarity

F1 offspring



Cundiff et al., 2004



Lost Opportunities

Quality Grade		-$25.25
Yield Grade	-$37.77	-$5.77
Carcass Weight		-$6.75
Offal		-$5.15
Hide/Branding		-$0.74
Total		-$43.66

NBQA 2011

USDA Quality and Yield Grade Distribution

USDA Yield Grade	Prime, %	Choice, %	Select, %	Other, %
1	0.0	3.6	7.3	1.4
2	0.4	22.8	15.3	2.4
3	1.8	25.9	8.0	1.5
4	0.5	6.3	1.4	0.4
5	0.1	1.3	0.1	0.1

NBQA 2011

Table 1. Example Grid, as Presented by a Packer ($/dressed cwt.)

Choice YG3 550-950 lbs.	Base Price
Prime-Choice Price Spread	+6.00
Choice-Select Price Spread	-6.00
Select-Standard Price Spread	-10.00
Yield Grade 1	+5.00
Yield Grade 2	+3.00
Yield Grade 4	-20.00
Yield Grade 5	-25.00
Dark Cutters	-20.00
Light Carcasses (<550 lbs.)	-10.00
Heavy Carcasses (>950 lbs.)	-20.00

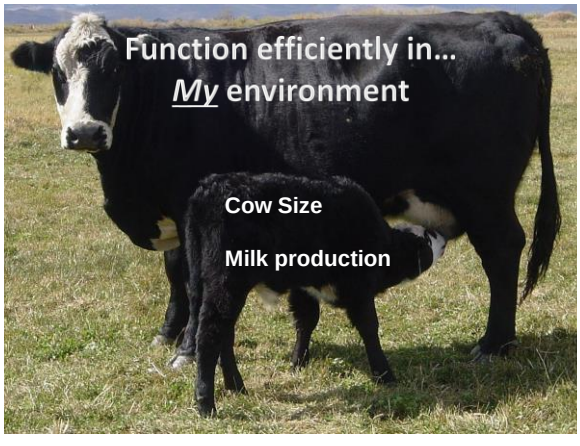
USDA Quality and Yield Grade Distribution

USDA Yield Grade	Prime, %	Choice, %	Select, %
1	$11	$5	-$1
2	$9	$3	-$3
3	$6	$0	-$6
4	-$14	-$20	-$26
5	-$19	-$25	-$31

Dark Cutter =-$20; Light Carcass (<550 lbs) = -$10; Heavy Carcass (>1000 lbs) = -$20

Match cow to Environment

Function efficiently in *My* environment



Nutrient Requirements

1100# Cow vs 1300# Cow

Average Milk

	Calving to Breeding		Breeding to Weaning		Weaning to Last 1/3		Last Trimester	
Dry Matter, lbs	26.4	29.1	25.5	28.5	21.4	24.2	22.7	25.8
CP, lbs	2.75	3.06	2.18	2.5	1.41	1.6	1.93	2.03
TDN/Energy, lbs	15.5	17.3	14.3	15.7	10.1	11.4	11.9	13.57

12% ↑ DMI

Function efficiently in *My* environment

Cow Size

Milk production

Nutrient Requirements

Average Milk vs Superior Milk

1100# Cow

	Calving to Breeding		Breeding to Weaning		Weaning to Last 1/3	Last Trimester
Dry Matter, lbs	26.4	29.2	25.5	27.25	21.4	22.7
CP, lbs	2.75	3.66	2.18	2.82	1.41	1.93
TDN/Energy, lbs	15.5	18.7	14.3	16.70	10.1	11.9

Nutrient Requirements

1100# Cow

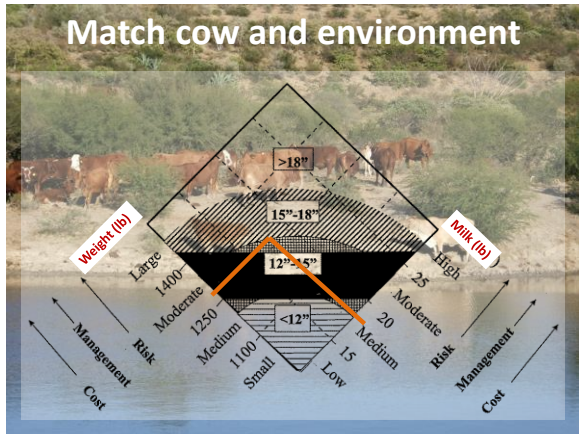
Average Milk vs Superior Milk

	Calving to Breeding (80 d)		Breeding to Weaning (160 d)		Weaning to Last 1/3 (30 d)	Last Trimester (95d)
Dry Matter, lbs	26.4	29.2	25.5	27.25	21.4	22.7
Total DMI; + lbs	224		280		1.41	1.93

+504 lbs

8% more grazing pressure during the growing season

Match cow and environment



Weaning a calf is 5x more important than growth

A cow's ability to wean a calf (reproductive performance) is directly related to how well she fits my environment.

Capturing Heterosis

Generation	Breed A Fraction	Breed B Fraction	Individual Heterosis
1	1/2	1/2	100 %
2	3/4	1/4	50 %
3	7/8	1/8	25 %
4	15/16	1/16	12.5 %
5	31/32	1/32	6.25 %

Match bull to the market

Use EPD's to your advantage

Heifers Birth Weight | Milk | Total Milk | Scrotal Circumference | Carcass

Terminal program Birth Weight | Weaning Weight | Yearling Weight

Retained ownership Yearling Weight | IMF | Back Fat | REA

Economics of Heterosis

- What does it cost?
- It depends.
- Cow size
  - About 6 % increase/100 lbs BW
- Milk production
  - ~1.5 % increase in energy/lb of milk
  - ~2.7 % increase in CP/lb of milk
- Make sure she fits your environment
  - Stocking rate
  - Supplemental feed

Economics of Heterosis- Angus cow x Terminal bull

Original Scenario:

- 100 cows; Angus cow x Angus Bull
- 525 lb weaning weight
- Average weaning rate 82%
- 43,050 lbs marketed

Switch to

- Angus cow x Bull Breed B
- Individual heterosis (+5%)
  - 551 lb weaning weight F1 calf
- 45,203 lbs marketed
- +2152 lbs/year * $1.67 = +$3,594/year

Economics of Heterosis- F1 cow x Terminal bull

Original Scenario:

- Angus cow x Angus bull
- 525 lb weaned calf
- Average weaning rate 82%
- 43,050 lbs marketed

Switch to

- F1 cow X (Terminal Bull Breed C)
- +WW total heterosis +25% {↑ Weaning rate (90%) & weight(11%)}

Capturing Heterosis

System	% Max Heterosis	% Increase in Calf Wt./Cow Exposed
Pure breeds	0	0
2 breed rotation	67	16
3 breed rotation	86	20
2 breed composite	50	12
3 breed composite	63	15
Term. Sire/purch. F1 female	100	23-28

Brett Barham, Univ. of Arkansas

Economics of Heterosis- F1 cow x Terminal bull

Original Scenario:

- Angus cow x Angus bull
- 525 lb weaned calf
- Average weaning rate 82%
- 43,050 lbs marketed

Switch to

- F1 cow X (Terminal Bull Breed C)
- +WW total heterosis +25% {↑ Weaning rate (90%) & weight(11%)}
- 656 lb calf
  - ➢ +131 lbs
- 59,040 lbs
- +15,990 lbs * $1.48 = +$23,665

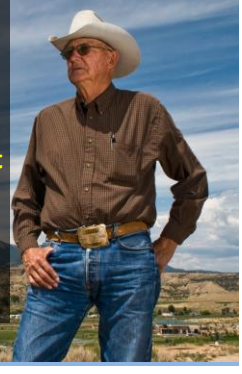
Economics of Heterosis

- +$3,594 increased weaning weight *(Bull Affect)*
  - *Angus cow x terminal bull*
  - *(½ Angus Calf x ½ Terminal bull breed calf)*
- +$23,665 increase in weaning rate & weight
  - *F1 cow x terminal bull breed*
  - *(½ F1 x Terminal bull breed calf)*

OK weighted average weights on 10-24-14, USDA-AMS data

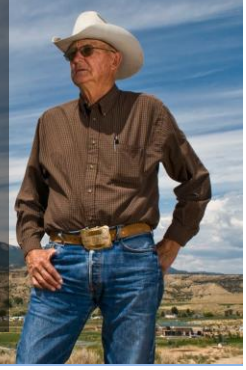
Parting Thoughts

- Must be able to manage for the benefits
- Heterosis will not make up for poor animal husbandry/management
- Heterosis will not make up for poor bull selection



Parting Thoughts

- Heterosis works
  - Makes you money
- Match cows to their environment
- Match bulls to your market
- Educate yourself to benefits of crossbreeding



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Develop Regional Marketing Alliances

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Integrity Beef Program

Robert Wells, Ph.D.

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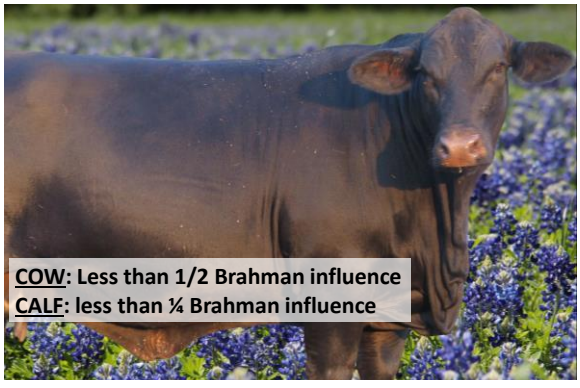
OVERVIEW

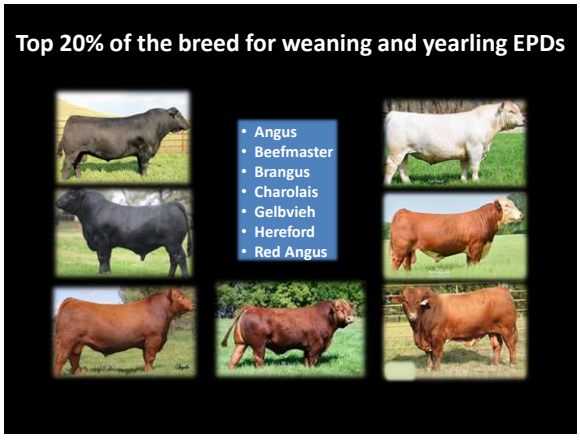
INTEGRITY BEEF

- **Consultation basics for cattle production**
  - *Best Management Practices*
  - Designed to simplify cow/calf producer management decisions
  - Uniform protocols for animal health and production, pasture and range management, and record keeping
- **Value-added principle**
  - Increase marketability of calves
  - Improve pasture and range quality
  - Utilize records to identify strengths and weaknesses of operation

OBJECTIVES

- **Develop production and marketing processes to:**
  - Implement industry BMPs for cattle, pastures, and financials
  - Wean and sell a healthier, heavier calf
  - Improve production and marketing efficiencies
  - Increase product quality and uniformity
  - Provide sustainable production





OBJECTIVES

- Develop production and marketing processes to:
  - Implement industry BMPs for cattle, pastures, and financials
  - Wean and sell a healthier, heavier calf
  - Improve production and marketing efficiencies
  - Provide sustainable production
- **Collectively though the Integrity Beef Alliance**
  - Wean and sell a healthier, heavier calf
  - Create a large set of uniform "feedlot-ready" cattle
  - Increase marketing opportunities
- **Increased profitability**

INCREASED WEANING WEIGHT

529 lbs.
National average
USDA National Animal Health Monitoring System

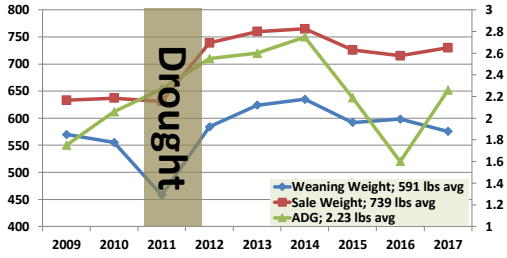
592 lbs.
Integrity Beef cattle
(2009-2017)

63 lbs.
Increase over national average

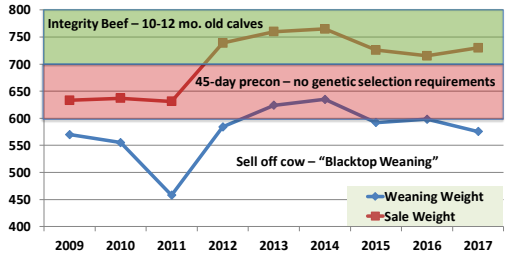
- Not uncommon to hear feedback of +75 lbs increase
- Over 5 years 25 hd herd = 7,875 lbs increase

INTEGRITY BEEF

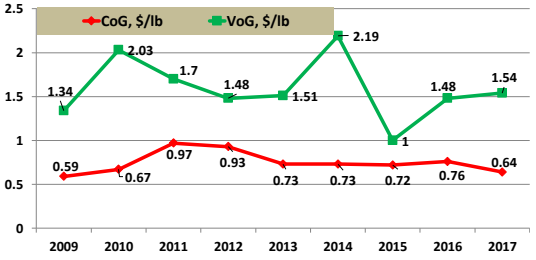
Weaning and Sale Weight, ADG



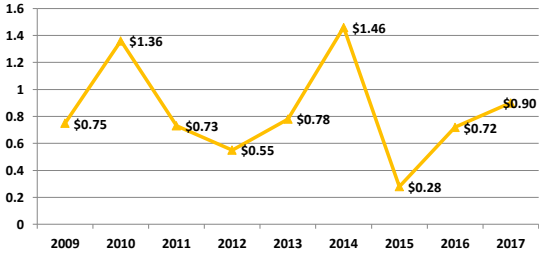
Weaning and Sale Weight, ADG



Preconditioning Value vs. Cost of Gain



Preconditioning Profit, $/lb



+63 lbs * $1.25 * 25 hd = $1968.75
Off the cow

2.23 lbs * $0.84/lbs * 60 d =
$2,809.80 *preconditioning*

$1,968.75 + $2,809.80 =
$4,778.55 *annually*

Participation in a
"VALUE STACKED" Program

- VAC-60 program
- Preconditioned
- Superior genetics
- Quality health protocol
- Increased uniformity
- Marketing assistance
- Certification letter

www.integritybeef.org
https://www.facebook.com/IntegrityBeef/

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Understanding and Using EPD's

Robert S. Wells, Ph.D. PAS
Livestock Consultant

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What is a bull worth?

$3,500 ?

4

Does he look like this?

5

Or like this???

6

It Depends…

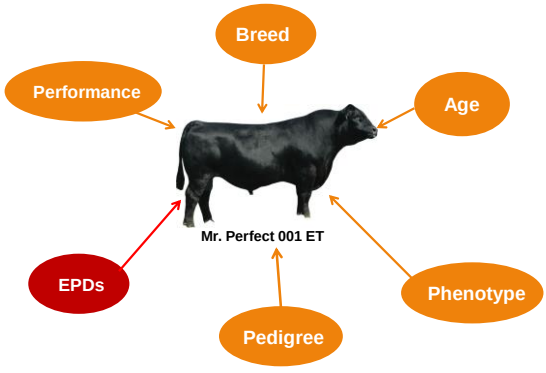
- How Good is he really?
  - How much information do you have and how accurate is it?
- How will you market his calves?
- How good are the cows?
- How much genetic progress can be made?

7

The Cow Should Fit Her Environment

The Bull Should Fit the Market

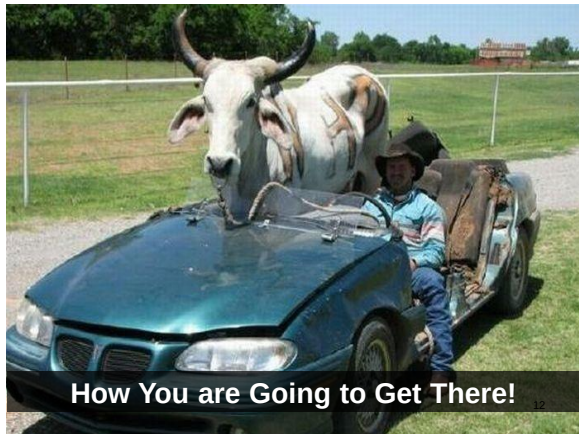
8



10

Develop a Plan

11

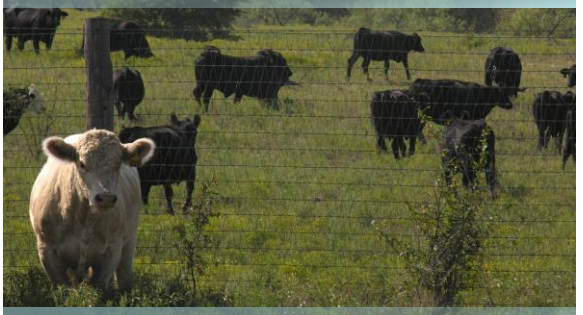


12

Know Your Cow Herd

13

What Kind of Bull Will You Need?



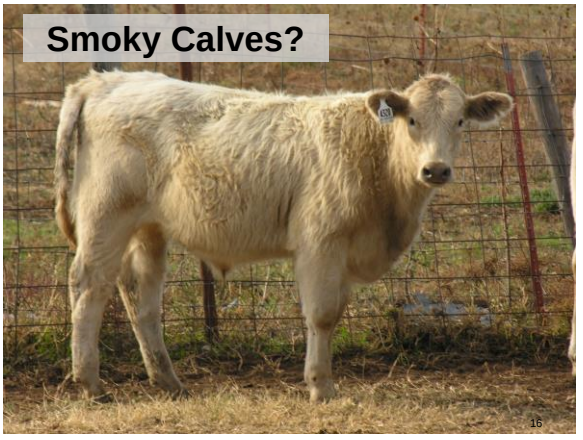
One to Compliment the Cow Herd!

14

Black Calves?

15

Smoky Calves?



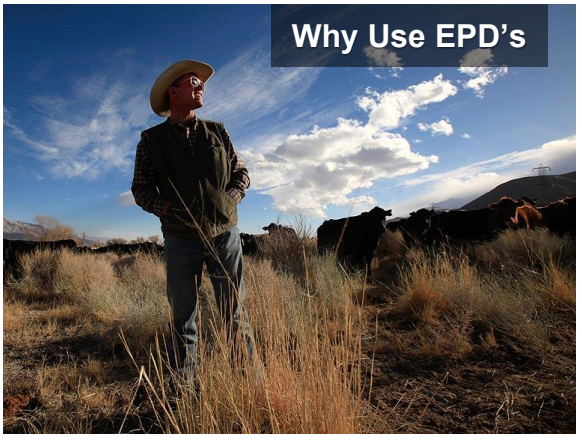
16

Know Where You Want to Go…

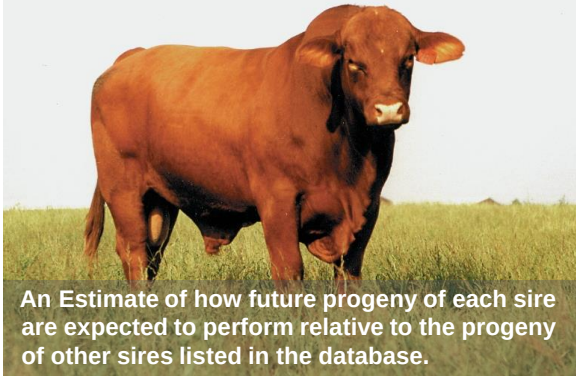
And How You are Going to Get There!

Sell at Weaning…

Expected Progeny Difference (EPD)

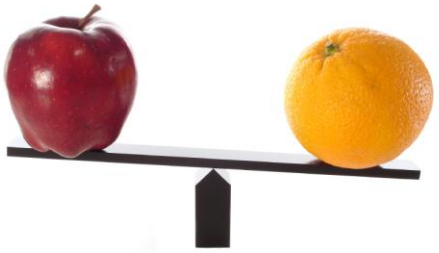


Expected Progeny Difference (EPD)



An Estimate of how future progeny of each sire are expected to perform relative to the progeny of other sires listed in the database.

EPD's are Breed Specific



25

26

Contemporary Group

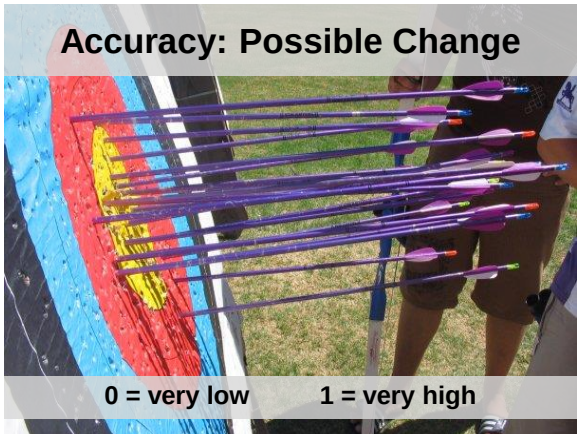
A set of animals that have had an equal opportunity to perform: same sex, managed alike, and exposed to the same environmental conditions and feed resources in the same location.

27

Contemporary Group

It must contain Reference Sires and have a minimum number of progeny to be valid.

28



30

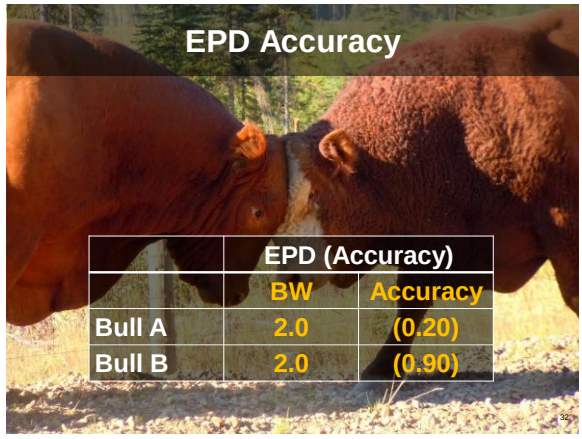
EPD Accuracy: Variability

Accuracy Increases
Variability Decreases

Accuracy	BW EPD
.10	2.55
.20	2.45
.30	2.35
.40	2.20
.50	2.00
.60	1.80
.70	1.60
.80	1.40
.90	1.20

31

EPD Accuracy



	EPD (Accuracy)	
	BW	Accuracy
Bull A	2.0	(0.20)
Bull B	2.0	(0.90)

32

EPD Accuracy: Variability

Accuracy	BW EPD
.10	2.36
.20	2.10
.30	1.85
.40	1.58
.50	1.31
.60	1.05
.70	0.79
.80	0.53
.90	0.26

Bull A

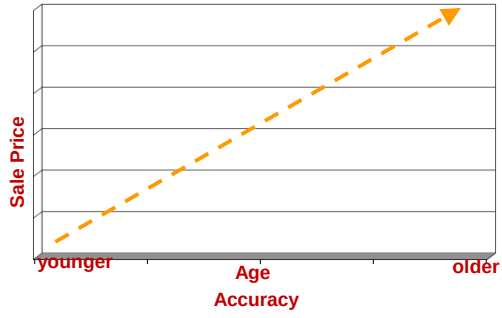
Bull B

33

Take Home Message

	BW EPD (Acc.)	Acc. Change	BW EPD Range
Bull A	2.0 (.20)	± 2.1	+4.10 to + 0.10
Bull B	2.0 (.90)	± 0.26	+2.26 to + 1.74

Age/Accuracy vs. Your Back Pocket



2018 Across Breed EPD Table (Selected Breeds)

Breed	BW	WW	YW	MM	Marb	REA	Fat	Carc wt
Angus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Charolais	6.9	32.5	23.2	5.5	-0.26	1.21	-0.204	8.1
Simmental	2.9	-8.9	-14.9	3.8	-0.21	1.03	-0.179	-2.9
Hereford	1.6	-18.2	-42.1	-14.1	-0.29	-0.06	-0.075	-72.4
Limousin	1.7	-21.5	-46.9	-7.4	-0.22	1.13	-0.101	-21.6
Gelbvieh	2.8	-22.3	-32.1	6.5	-0.2	0.86	-0.103	-20.2
Red Angus	2.3	-28.3	-35.4	5.5	-0.13	0.06	-0.017	-16.6

http://nwdistrict.ifas.ufl.edu/phag/2018/01/12/marc-updates-across-breed-epd-table/

37

Compare Hereford vs. Charolais

Hereford Bull

Charolais Bull

38

Compare Hereford vs. Charolais

50% for Breed for BW and 20% for WW and YW

		BW
Hereford Bull	EPD (Registration Papers)	3.1
	Across Breed Adjustment (table)	1.6
	Adjusted EPD	4.7

		BW
Charolais Bull	EPD (Registration Papers)	.4
	Across Breed Adjustment (table)	6.9
	Adjusted EPD	7.3

	BW
Charolais Difference	2.6

When mating bulls to cows of a third, unrelated breed

39

Compare Hereford vs. Charolais

50% for Breed for BW and 20% for WW and YW

		BW	WW
Hereford Bull	EPD (Registration Papers)	3.1	58
	Across Breed Adjustment (table)	1.6	-18.2
	Adjusted EPD	4.7	39.8

		BW	WW
Charolais Bull	EPD (Registration Papers)	.4	36.1
	Across Breed Adjustment (table)	6.9	32.5
	Adjusted EPD	7.3	68.6

	BW	WW
Charolais Difference	2.6	28.8

When mating bulls to cows of a third, unrelated breed

40

Compare Hereford vs. Charolais

50% for Breed for BW and 20% for WW and YW

		BW	WW	YW
Hereford Bull	EPD (Registration Papers)	3.1	58	93
	Across Breed Adjustment (table)	1.6	-18.2	-42.1
	Adjusted EPD	4.7	39.8	50.9

		BW	WW	YW
Charolais Bull	EPD (Registration Papers)	.4	36.1	65.7
	Across Breed Adjustment (table)	6.9	32.5	23.2
	Adjusted EPD	7.3	68.6	88.9

	BW	WW	YW
Charolais Difference	2.6	28.8	38.0

When mating bulls to cows of a third, unrelated breed

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Comparing Angus vs. Charolais

Angus Bull

Charolais Bull

42

Comparing Angus vs. Hereford

50% for Breed for BW and 20% for WW and YW

		BW	WW	YW
Angus Bull	EPD (Registration Papers)	1.4	62	108
	Across Breed Adjustment (table)	0.0	0	0
	Adjusted EPD	**1.4**	**62**	**108**

		BW	WW	YW
Hereford Bull	EPD (Registration Papers)	3.1	58	93
	Across Breed Adjustment (table)	1.6	-18.2	-42.1
	Adjusted EPD	**4.7**	**39.8**	**50.9**

	BW	WW	YW
Hereford Difference	**3.3**	**-22.2**	**-57.1**

Hybrid Vigor will increase the spread.

When mating bulls to cows of a third, unrelated breed

43

Comparing Angus vs. Charolais

50% for Breed for BW and 20% for WW and YW

		BW	WW	YW
Angus Bull	EPD (Registration Papers)	1.4	62	108
	Across Breed Adjustment (table)	0.0	0	0
	Adjusted EPD	**1.4**	**62**	**108**

		BW	WW	YW
Charolais Bull	EPD (Registration Papers)	.4	36.1	65.7
	Across Breed Adjustment (table)	6.9	32.5	23.2
	Adjusted EPD	**7.3**	**68.6**	**88.9**

	BW	WW	YW
Charolais Difference	**5.9**	**6.6**	**-19.1**

Hybrid Vigor will increase the spread.

When mating bulls to cows of a third, unrelated breed

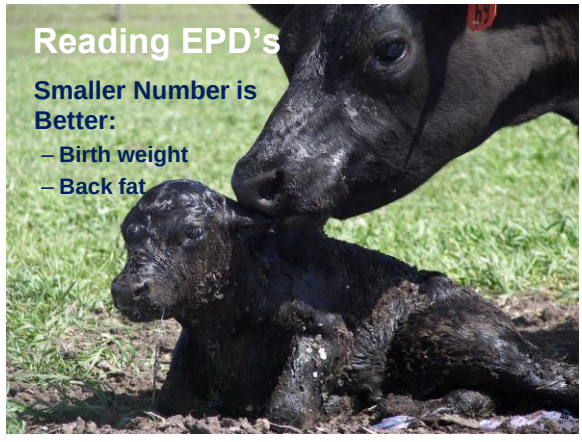
44

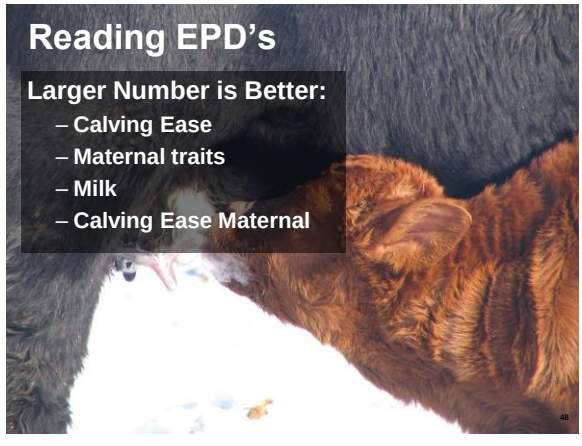
Comparison of several breeds using Across Breed EPD Adjustments

50% for Breed for BW and 20% for WW and YW

Breed	BW	WW	YW	Marb	REA	FAT	Carc Wt.
Hereford vs Angus	3.3	-22.2	-57.1	-0.87	-0.28	-0.078	-50.4
Charolais vs Angus	5.9	6.6	-19.1	-0.85	1.29	-0.197	-16.5
Charolais vs Hereford	2.6	28.8	38	0.02	1.57	-0.119	33.9
Red Angus vs Angus	-1.1	-24.3	-38.4	-0.33	-0.44	-0.025	-34.6
Red Angus vs Charolais	-7	-30.9	-19.3	0.52	-1.73	0.172	-18.1
Red Angus vs Hereford	-4.4	-2.1	18.7	0.54	-0.16	0.053	15.8

45



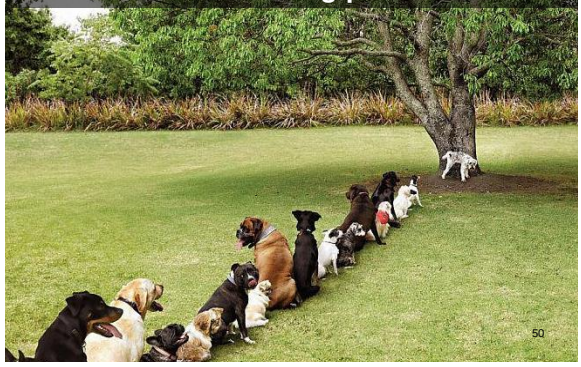


Reading EPD's

Larger Number is Better:

- Carcass weight
- Rib Eye Area
- Marbling

Unintended consequences if we don't look at the big picture



Which EPD's should I use????

- IT DEPENDS……
  - When do you market your cattle?
  - Do you retain heifers as replacements?
  - Do you have an interest in retaining ownership?
  - The good of the industry?
  - How much can you afford to spend?

Retained ownership selling live

Feed Efficiency

ADG

$W, $F, $G, $B Values

Retained ownership sell on grid

Carcass Weight

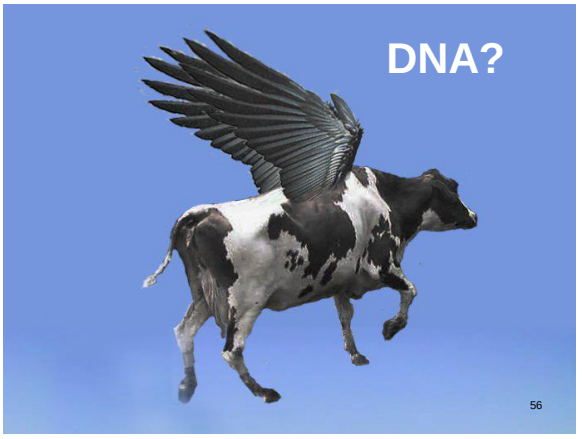
Quality Grade

Yield Grade

IMF

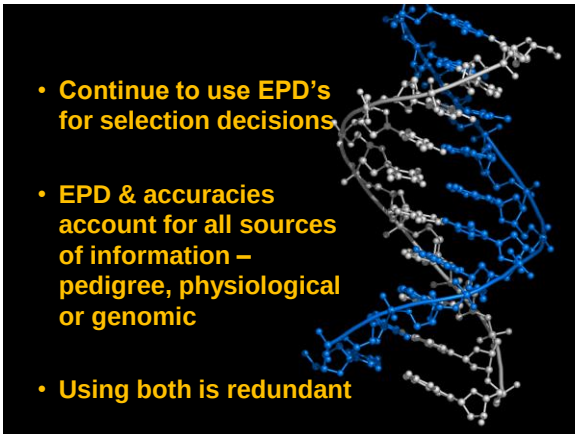
Back Fat

REA



DNA Enhanced EPD

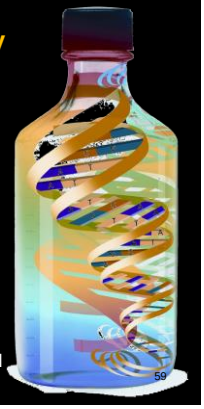
- Use Igenity® or Pfizer® genomic results to increase the accuracy of an EPD
  - Calculated as:
    - Genetic correlation = GC
    - Percent of additive genetic variance accounted for by the test = GC^2
  - The more genetic variance = more impact on the EPD accuracy



- Continue to use EPD's for selection decisions
- EPD & accuracies account for all sources of information – pedigree, physiological or genomic
- Using both is redundant

Genomic results are a way to enhance current selection tools to achieve more accuracy on predictions for younger animals, and to characterize genetics for traits where it's difficult to measure phenotype.

--Sally Northcutt, AAA/AGI



Summary

- Use EPD's as a tool and in conjunction with other information
- Familiarize yourself with terms that are breed specific
- Extremes may not be the answer

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Summary

- EPDs are not static, keep up to date
- Use accuracies accordingly
- Don't forget about visual appraisal, disposition, etc.
- Too much of one thing can be hazardous

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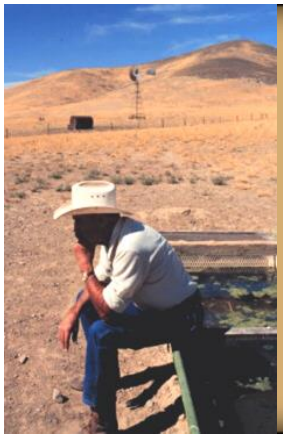
Quality is NEVER an accident but a result of intelligent and endless efforts…



Questions?

NOBLE RESEARCH INSTITUTE

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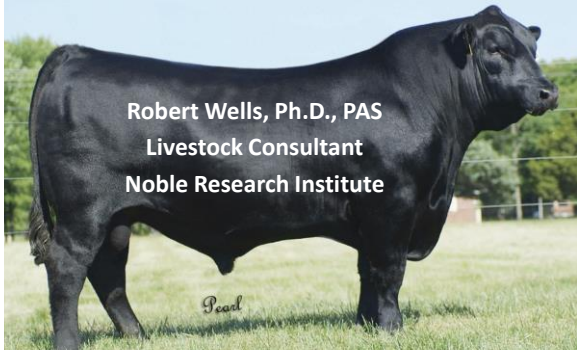
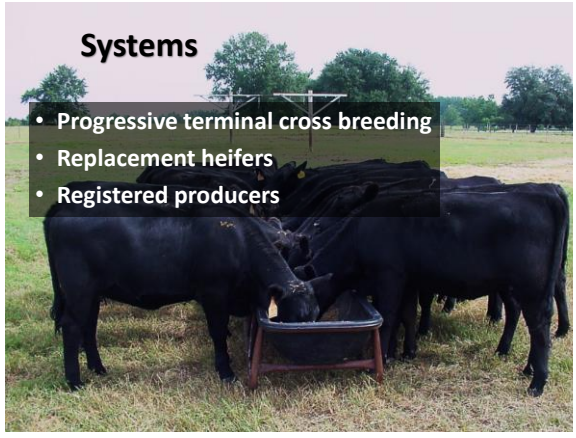
Comparison of owning a bull vs. AI for producers of various sizes



Why AI?

- More early calves
- Uniform calf crop
- Higher quality genetics than you could afford to buy in the bull.
- Reduce time for genetic progression
- Can select for calving ease
- Strategically plan matings
- Increased marketability of calves
- Sexed semen

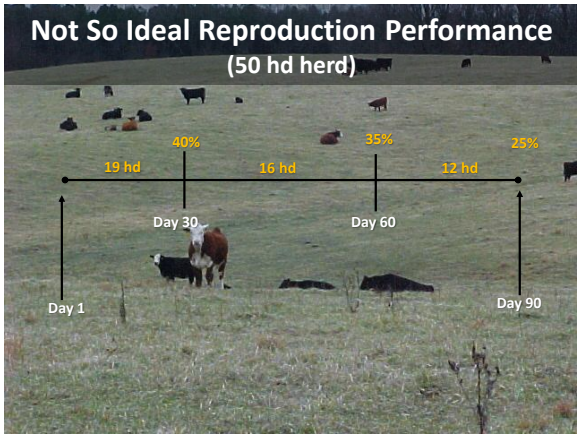
Systems



- Progressive terminal cross breeding
- Replacement heifers
- Registered producers

Multiple Bull Herds; ≥ 50hd

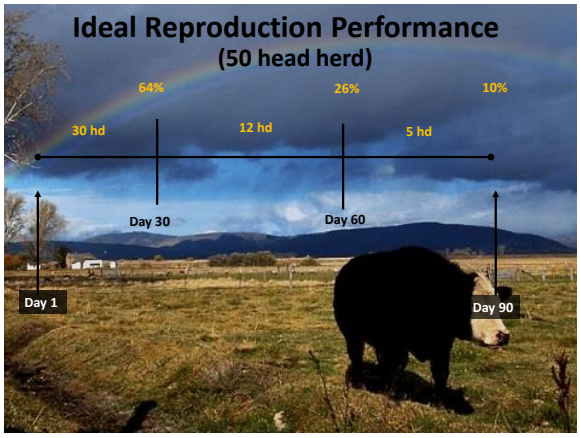
Tighten Up Calving Season



Weaning Projections
(Not So Ideal Scenario)

	No. Head	Days to Weaning	ADG	Total LBS.	Calf wt, lbs
Day 1-30	19	209	2.1	9,859	519
Day 31-60	16	179	2.1	7,294	456
Day 60-90	12	149	2.1	4,715	393
	Total lbs			21,868	456
	Total $	@	$1.38/lb	$30,260	

http://www.beefbasis.com/Basis.aspx; 475 lb st, 455 lb hfr, Sell Oct 11, 2017@ Athens Livestock Market $138.38 avg St & Hfr



Weaning Projections
(Ideal Scenario)

	No. Head	Days to Weaning	ADG	Total LBS.	Calf wt, lbs
Day 1-21	30	209	2.1	15,567	519
Day 31-60	12	179	2.1	5,471	456
Day 61-90	5	149	2.1	1,965	393
	Total lbs			23,002	490
	Total $	@	$1.37/lb	$31,829	
	Difference			$1,202	

http://www.beefbasis.com/Basis.aspx; 500 lb st, 480 lb hfr, Sell Oct 11, 2017@ Athens Livestock Market $136.78 avg St & Hfr

A.I. will Increase in Calf Quality
(weaning weight)

- Assume same breeding seasons as before but increased potential for weaning weight.
- Using a high quality terminal cross bull to maximize weaning weight, add 105 lbs (+.5 lb ADG) to AI sired calves.
- Increases total revenue by another **$2,707**

Better Genetics + ideal calving distribution: st = 580 lbs; hfr = 560 lbs; Not ideal calving distribution: st = 535 lbs; hfr = 515 lbs

Weaning Projections
(Ideal Scenario)

	No. Head	Days to Weaning	ADG	Total LBS.	Calf wt, lbs
Day 1-30 *(AI)*	26	209	2.6	16,208	623
Day 1-30 *(bull)*	9	209	2.1	4,670	518
Day 31-60	11	179	2.1	5,015	456
Day 60-90	1	149	2.1	393	393
	Total lbs			26,286	
	Total $	@	$1.30/lb	$34,170	
	Difference	$34,170-$30,260 =		$3,910	

http://www.beefbasis.com/Basis.aspx; 570 lb st, 550 lb hfr, Sell Oct 11, 2017@ Athens Livestock Market $138.38 avg St & Hfr

- Increased weights by shifting to more earlier born calves = $1,202
- Increase in weights by better genetics = $2,707
- Only need one bull rather than 2 = $3500
  - Depreciated over the life of the bull = $700/yr
  - Maintenance cost on the one bull not needed = $500
- Annual Gross Profit of A.I. = $5,109

Costs of Timed AI

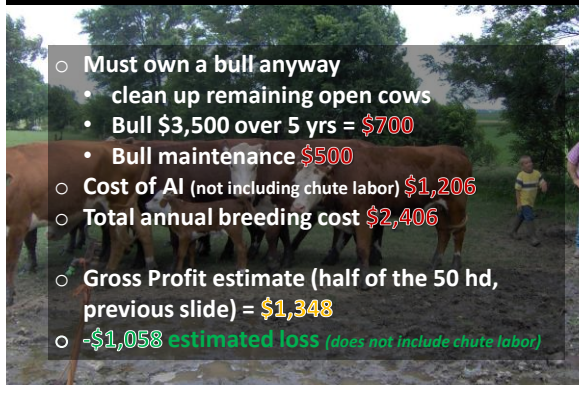
	Unit Cost
CIDR	$ 10.25
GnRH + PG	$ 8.00
Semen	$20.00
Technician	$10.00
AI Cost/Cow	$48.25*

*Does not include labor costs

- Annual Gross Profit of A.I. = $5,109
- Cost of A.I. of 50 hd = $2,413 *($48.25*50)*

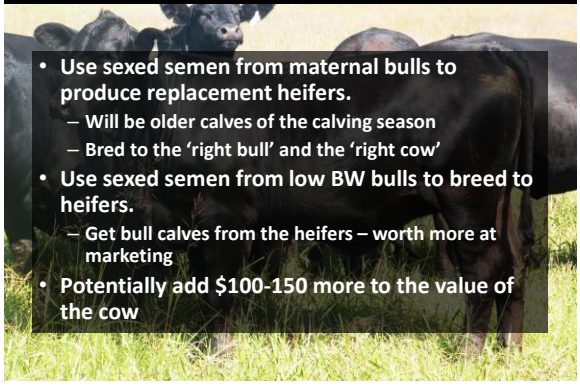
Annual net profit of A.I. = $2,697 per 50 hd of calves

<25 hd, A.I. is difficult to justify



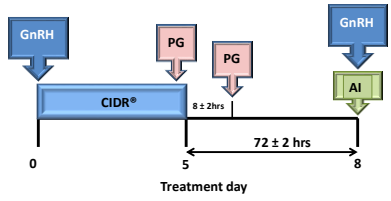
- Must own a bull anyway
  - clean up remaining open cows
  - Bull $3,500 over 5 yrs = $700
  - Bull maintenance $500
- Cost of AI (not including chute labor) $1,206
- Total annual breeding cost $2,406
- Gross Profit estimate (half of the 50 hd, previous slide) = $1,348
- -$1,058 estimated loss *(does not include chute labor)*

Replacement Heifers

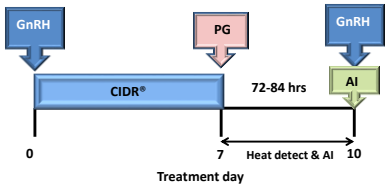


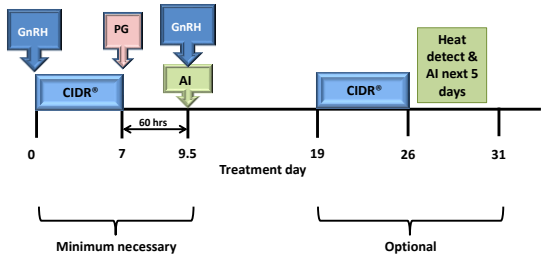
- Use sexed semen from maternal bulls to produce replacement heifers.
  - Will be older calves of the calving season
  - Bred to the 'right bull' and the 'right cow'
- Use sexed semen from low BW bulls to breed to heifers.
  - Get bull calves from the heifers – worth more at marketing
- Potentially add $100-150 more to the value of the cow

5-day CO-Synch + CIDR®



Select Synch+CIDR®
(Heat Detect & Timed AI)





Questions

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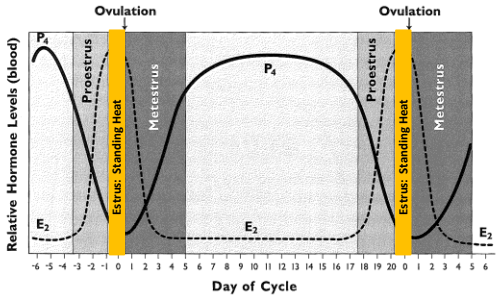
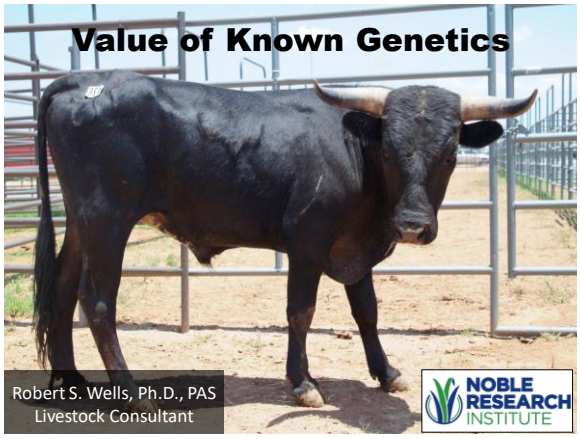


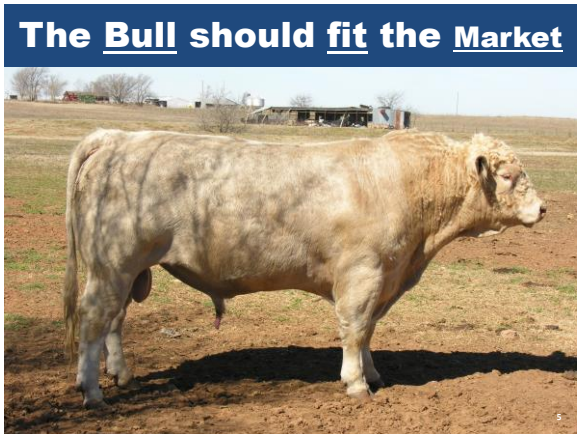
Figure 7-2. Stages of the estrous cycle. Proestrus is characterized by a significant rise in estradiol (E_2). When estradiol reaches a certain level, the female enters estrus. Following ovulation, cells of the follicle are transformed into a corpus luteum during metestrus. Diestrus is characterized by a fully functional CL and high progesterone (P_4).


Value of Known Genetics
Robert S. Wells, Ph.D., PAS
Livestock Consultant
NOBLE RESEARCH INSTITUTE


Develop a Plan
2


The cow should fit her environment
3


Easy fleshing
4


The Bull should fit the Market
5

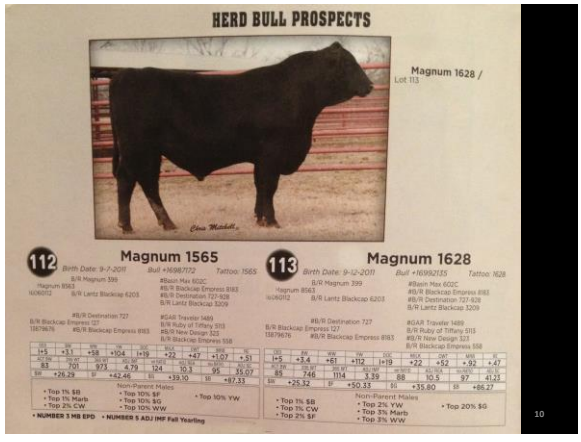

Make 'em all one color
6

Breed Complementarity Heterosis

Use Registered Bulls

Things are not always what it appears to be

HERD BULL PROSPECTS

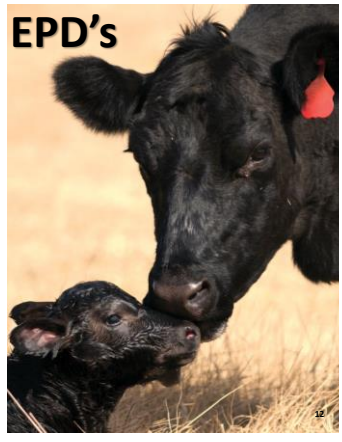


Required EPD's

- Top 20%
  - –Weaning weight
  - –Yearling weight

Suggested EPD's

- Birth
  - –Top 50%
- Carcass:
  - –Top 50%
  - –Rib Eye Area
  - –Marbling



Suggested EPD's

- Birth
  - –Top 50%
- Carcass:
  - –Top 50%
    - Rib Eye Area
    - Marbling

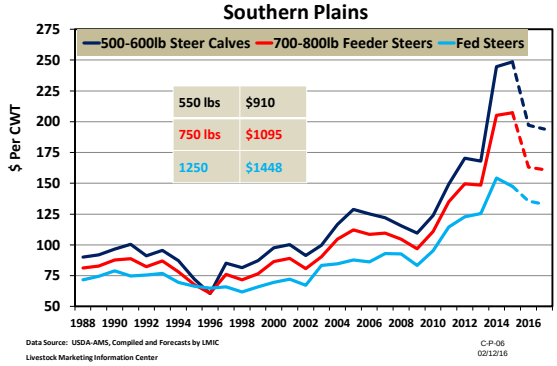
13

Value of Known Bull Genetics

Prepared by:
Steve Swigert
Economics Consultant
Noble Foundation

14

Average Annual Cattle Prices



Data Source: USDA-AMS, Compiled and Forecasts by LMIC
Livestock Marketing Information Center

C-P-06
02/12/16

Bull # 1

- Neighbor or Friend
- Individual Performance Information
  - No EPD's
  - No known or reliable ancestral history

16

Bull # 1

Purchase price	$2500
Salvage weight of Bull	1850 lbs
Salvage price of bull	$0.80 / lb
Salvage value of bull	$1465.20
(-1% death loss)	
Cost of bull, yr	$ 206.96
(5 yr life span in herd)	

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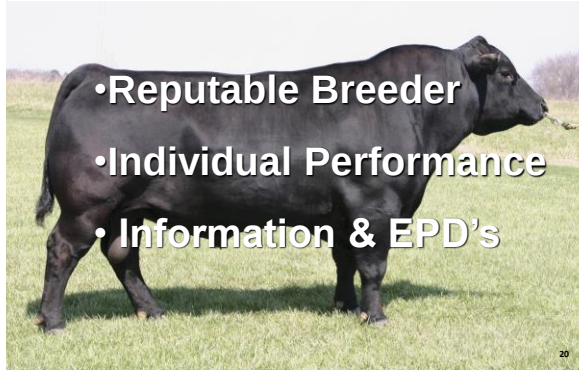
Bull # 1

Cost of bull (5 yr life span in herd)	$206.96
Cash maintenance cost, /yr	$400.00
Total cash cost of bull, /yr	$606.96
Cows/yr bred	25
Cash cost, /cow/yr	$ 24.28

18

Integrity Beef Bull # 2

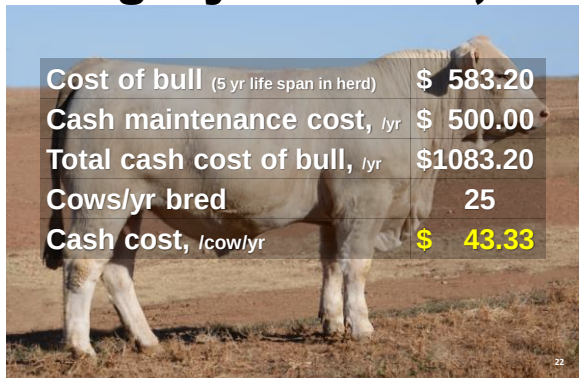
Integrity Beef Bull, # 2



Integrity Beef Bull, # 2

Purchase price	$4500
Salvage weight of Bull	2000 lbs
Salvage price of bull	0.80/ lb
Salvage value of bull (-1% death loss)	$1584.00
Cost of bull (5 yr life span in herd)	$ 583.20

Integrity Beef Bull, # 2



Cost of bull (5 yr life span in herd)	$ 583.20
Cash maintenance cost, /yr	$ 500.00
Total cash cost of bull, /yr	$1083.20
Cows/yr bred	25
Cash cost, /cow/yr	$ 43.33

Yearly Per Cow Bull Cash Costs

	Bull # 1	Bull #2
Bull Purchase Price	$2500	$4500
Total Annual Bull Cash Costs/cow	$24.28	$43.33
Bull #1/Cow Advantage	XX	($19.05)

Increased Value at Weaning

	Bull #1 520 lbs @ Weaning	Bull #2 585 lbs @ weaning
Selling price, $/lb	$ 1.4374	$ 1.3634
Value of calf	$ 754.64	$ 818.04
Bull #1/Cow Advantage	XX	($19.05)
Adjusted Calf Value	$ 754.64	$ 798.99
Difference	XX	$ 44.35
Increased Revenue $/25 cows/yr	XX	$1,108.75
Net increase revenue $/bull (5 yr) (-$290.25)	XX	$5,544.43

Increased Value after Backgrounding

	Bull #1 655 lbs @ Backgrounding	Bull #2 779 lbs @ Backgrounding
Selling price, $/lb	$ 1.2536	$ 1.2036
Value of calf	$ 821.11	$ 937.30
Bull #1/Cow Advantage	XX	($ 19.05)
Adjusted Calf Value	$ 821.11	$ 918.25
Difference	XX	$ 97.14
Increased Revenue $/25 cows/yr	XX	$2,428.50
Net increase revenue $/bull (5 yr)	XX	$12,143.24

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Now add the price you were willing to pay for the Neighbor's bull ($2,500) to the increased revenue the better bull provides ($5,544.43) = ***$8,044.43***

Bull Breakeven price at weaning.

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Now add the price you were willing to pay for the Neighbor's bull ($2,500) to the increased revenue the better bull provides ($12,143.24) = ***$14,643.24***

Bull Breakeven price after a preconditioning program.

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Take Home Message

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Additional Value Considerations

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