Understanding and Using EPD's

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What is a bull worth?





Does he look like this?

Or like this???

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?

The Cow Should Fit Her Environment

The Bull Should Fit the Market



Before you Jump...

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Develop a Plan

How You are Going to Get There!

Know Your Cow Herd



What Kind of Bull Will You Need?

One to Compliment the Cow Herd!

Black Calves?



Smoky Calves?

Know Where You Want to Go...



And How You are Going to Get There!

Sell at Weaning...

REFERENCE STATES





Expected Progeny Difference (EPD)



Why Use EPD's

185

Things are not always what it appears to be

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



A Judging Class on Paper!

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.



Contemporary Group

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



Accuracy: Possible Change

0 = very low **1** = very high

Increase in Accuracy

EPD Accuracy: Variability

Decreases 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

EPD Accuracy



EPD Accuracy: Variability



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





2016 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	8.0	34.6	40.4	8.2	-0.33	1.01	-0.208	13.0
Simmental	3.2	-9.4	-12.1	4.4	-0.34	0.49	-0.129	4.4
Hereford	2.3	-7.8	-28.6	-17.3	-0.31	-0.07	-0.056	
Limousin	2.3	-18.2	-41.3	-13.7	-0.43	1.01	-0.132	-12.0
Gelbvieh	2.8	-22.6	-29.3	2.3	-0.27	0.75		-15.0

http://beefmagazine.com/cattle-genetics/comparing-different-cattle-breeds-use-2016-across-breed-epd-table



Hereford Bull

Charolais Bull



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

		BW
Hereford Bull	EPD (Registration Papers)	3.6
	Across Breed Adjustment (table)	2.3
	Adjusted EPD	5.9
		BW
Charolais Bull	EPD (Registration Papers)	1.2
	Across Breed Adjustment (table)	8.0
	Adjusted EPD	9.2
		BW
Charolais Differ	3.3	

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

		BW	WW
Hereford Bull	EPD (Registration Papers)	3.6	50
	Across Breed Adjustment (table)	2.3 5 9	-7.8
		0.0	72.2
		BW	WW
Charolais Bull	EPD (Registration Papers)	1.2	31
	Across Breed Adjustment (table)	8.0	34.6
	Adjusted EPD	9.2	65.6
		BW	WW
Charolais Difference		3.3	23.4

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

		BW	WW	YW
Hereford Bull	EPD (Registration Papers)	3.6	50	82
	Across Breed Adjustment (table)	2.3	-7.8	-28.6
	Adjusted EPD	5.9	42.2	53.4
		BW	ww	YW
Charolais Bull	EPD (Registration Papers)	1.2	31	54
	Across Breed Adjustment (table)	8.0	34.6	40.4
	Adjusted EPD	9.2	65.6	94.4
		BW	WW	YW
Charolais Difference		3.3	23.4	41.0



Angus Bull

Charolais Bull



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

		BW
Angus Bull	EPD (Registration Papers)	2.2
	Across Breed Adjustment (table)	0.0
	Adjusted EPD	2.2
		BW
Charolais Bull	EPD (Registration Papers)	1.2
	Across Breed Adjustment (table)	8.0
	Adjusted EPD	9.2
		BW
Charolais Differ	7.0	

Hybrid Vigor will increase the spread.

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

		BW	WW
Angus Bull	EPD (Registration Papers)	2.2	51
	Across Breed Adjustment (table)	0.0	0
	Adjusted EPD	2.2	51
		BW	ww
Charolais Bull	EPD (Registration Papers)	1.2	31
	Across Breed Adjustment (table)	8.0	34.6
	Adjusted EPD	9.2	65.6
		BW	WW
Charolais Difference			

Hybrid Vigor will increase the spread.

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

		BW	WW	YW
Angus Bull	EPD (Registration Papers)	2.2	51	92
	Across Breed Adjustment (table)	0.0	0	0
	Adjusted EPD	2.2	51	92
		BW	ww	YW
Charolais Bull	EPD (Registration Papers)	1.2	31	54
	Across Breed Adjustment (table)	8.0	34.6	40.4
	Adjusted EPD	9.2	65.6	94.4
		BW	WW	YW
Charolais Difference		7.0	14.6	2.4

Hybrid Vigor will increase the spread.

Reading EPD's Smaller Number is Better: – Birth weight – Back fat

Reading EPD's

Larger Number is Better: – Weaning Weights – Yearling Weights

Reading EPD's

Larger Number is Better: – Calving Ease – Maternal traits – Milk – Calving Ease Maternal

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?

After weaning or graze out

Birth Weight Weaning Weight

Yearling Weight

Retained ownership selling live

Feed Efficiency

ADG

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



Retained
ownership
sell on gridCarcass Quality YieldIMFBackREAWeightGradeGradeFat



Milking Scrotal Ability Circumference

Heifers

Calving Ease



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 = GC²
- 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

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

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



Questions?