



What's Changed with AHA's Genetic Evaluation



IF YOU
ALWAYS DO
WHAT YOU'VE
ALWAYS
DONE,
YOU'LL
ALWAYS
GET WHAT
YOU'VE
ALWAYS GOT.
HENRY FORD

Change is
a Process
not an Event!

THE SECRET OF
CHANGE IS TO FOCUS
ALL OF YOUR ENERGY
NOT ON FIGHTING
THE OLD, BUT ON
BUILDING THE NEW!
SOCRATES

- December 4th, 2017

Introduction

- Pan-American Cattle Evaluation
 - American Hereford Association
 - Canadian Hereford Association
 - Uruguay Hereford Association
 - Argentina Hereford Association
- Initiated in 2009 and then re-launched in 2019

Introduction

- **AHA's Current Genetic Evaluation**
- Calculates EPDs for 17 traits and 3 indices
- Utilizes Marker Effects Model with BOLT software
- Performance Extract – 2.5 million animals
- Nearly 120,000 Genotypes
- Weekly Genetic Evaluation Releases (Every Monday)

Suite of Traits

EPDS AS OF 10/19/20																				
	Calv. Ease Direct (%)	Birth Wt	Weaning Wt	Yearling Wt	Dry Matter Intake	Scrotal Circ.	Sustained Cow Fertility	Milk	Milk & Growth	Calv. Ease Mat. (%)	Mature Cow Weight	Udder Suspension	Teat Size	Carc Wt	Fat	Rib Eye Area	Marbling	BMI Index (\$)	BII Index (\$)	CHB Index (\$)
EPD	+4.0	+1.3	+67	+100	+0.5	+1.1	+20.4	+29	+63	+5.4	+60	+1.40	+1.40	+72	+0.054	+0.92	+1.15	+\$ 475	+\$ 627	+\$ 113
Acc	.56	.86	.75	.75	.45	.62	.38	.40	-	.44	.41	.63	.64	.55	.54	.53	.54	-	-	-
Breed Avg. EPDs for 2018 Born Calves Click for Percentiles																				
EPD	2.2	3.0	51	82	0.1	0.9	15.6	24	49	1.6	87	1.21	1.23	64	0.010	0.35	0.09	333	399	100



Traits Observed: BWT, SC,

Statistics:

Statistics: BW:55/500, WW:34/322, YW:24/186, SC:12/69, Dgt:25, SCAN:136, HARVEST:23, MCW:1

Mature Weight – Added in 2015

Carcass Weight – Added in 2016

Dry Matter Intake – Added in 2017

Sustained Cow Fertility – Added in 2017

Addition of ERT's/Updates to Indices

- Added two new traits
- Sustained Cow Fertility (SCF) and Dry Matter Intake (DMI)
- Updated three \$ Indices with these traits as well other key ERT's that were put in place prior to the release of BOLT
- Developed Commercial Programs around \$ Indices



Data Pruning Strategy

- Genetic Evaluation backed by Whole Herd TPR
 - Celebrating 20 years
- Only performance animals born after 2001 are used
 - + 3 generations of pedigree data (GGP)

Trait EPD Correlations – BOLT MEM to PACE				
	BW	WW	YW	MM
ALL Data $\geq .50$.996	.996	.996	.993
Reduced $\geq .50$.974	.956	.956	.948
Reduced 2014+	.980	.954	.956	.979



Model Changes

- Moved away from Full Multi-Trait Correlated Model
- Decoupling of Traits in Smaller Cluster Models (9)
 - Better estimation of trait of interest

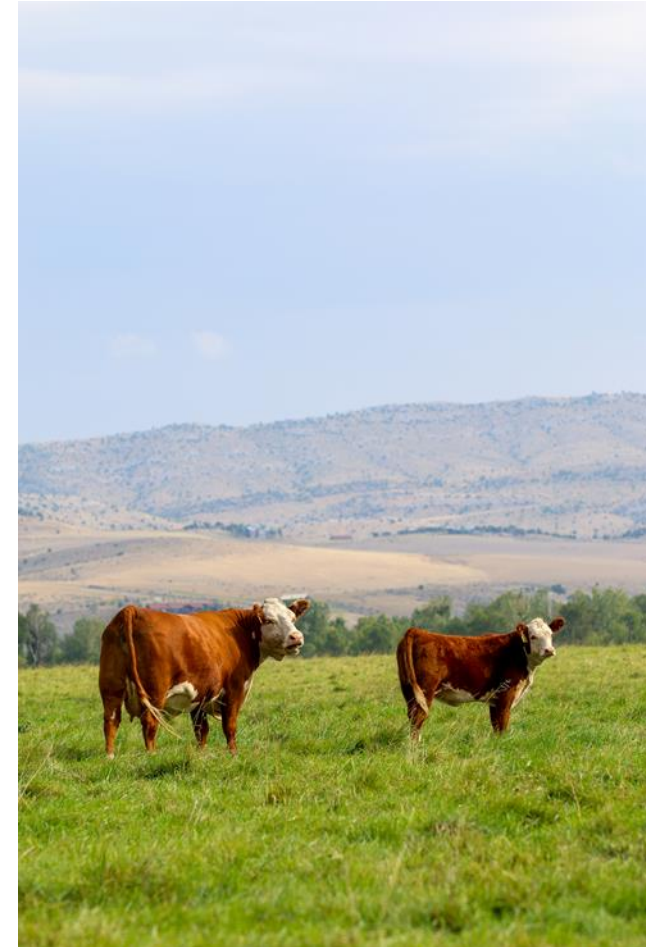
Model Changes

- New trait models are as follows:
 - BW, WW, YW, & MM
 - SC & WW
 - WW, CW, CREA, & SREA
 - BW, CW, CFAT, CMARB, SFAT, SIMF
 - MCW, WW
 - BW, CE, MCE
 - SCF
 - Udder and Teat
 - DMI, WW and YW

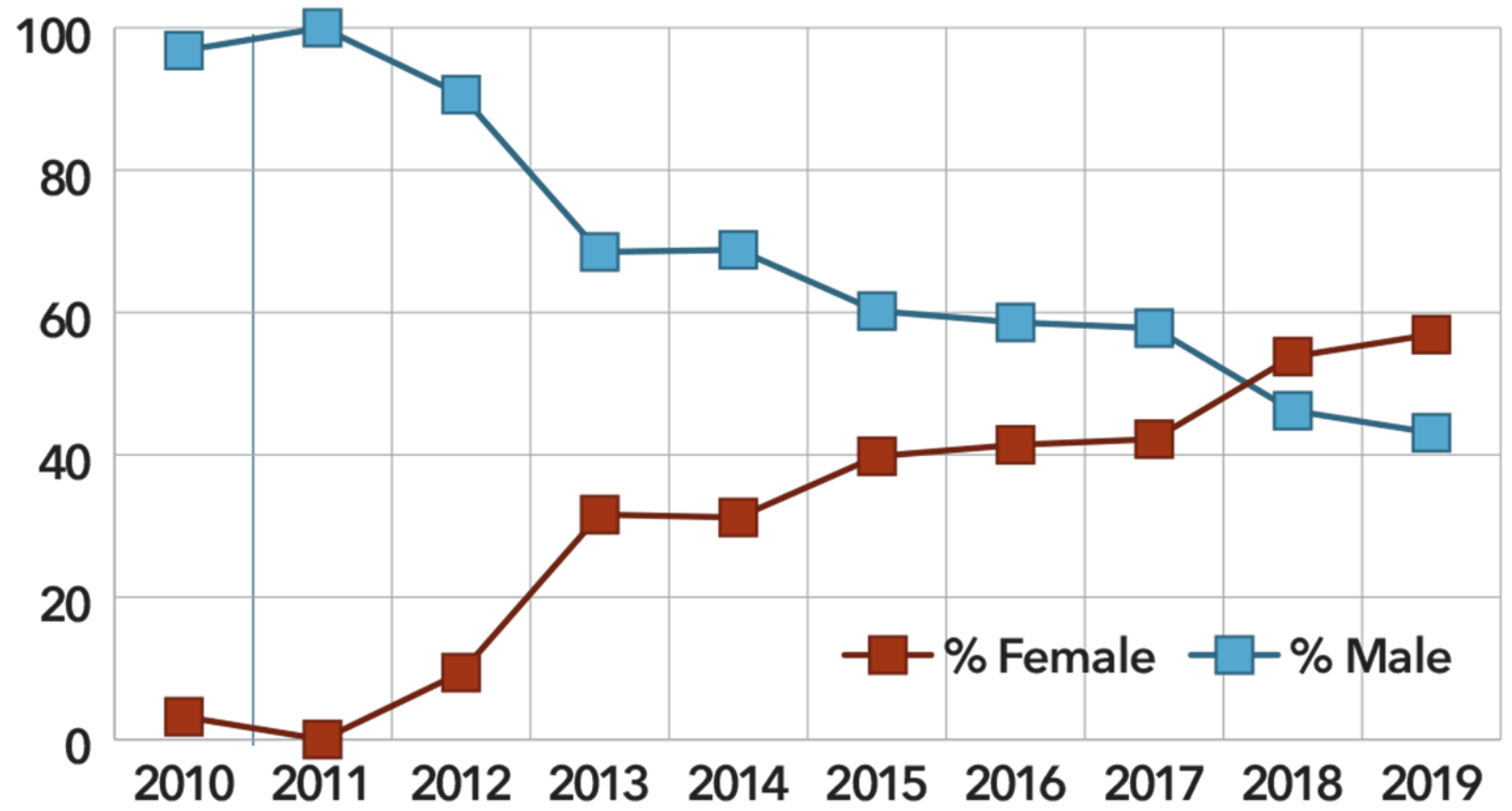


COWHERD PROJECT

- 2017 update did include the MEM for maternal traits
- AHA collected over 10,000 new female genotypes
- Allowed science team to do the research



Genotype breakdown



Calving Ease Maternal (CEM)

- Updated CEM Model Implications
- **Does now include the Marker Effects Model (MEM)**
- Overall correlations for animals with ≥ 0.10 accuracy is 0.982
- Non-parent animals with low accuracy could see change
- Some differences for Calving Ease EPD may be noticed

Maternal MILK (M)

- Updated Milk Model Implications
- **Does now include the Marker Effects Model (MEM)**
- Overall correlations for animals with ≥ 0.10 accuracy is 0.984
- Non-parent animals with low accuracy could see change



Frequency of Genetic Evaluations

- Fall and Spring Sire Summary
- Once a Month
- Once a Week

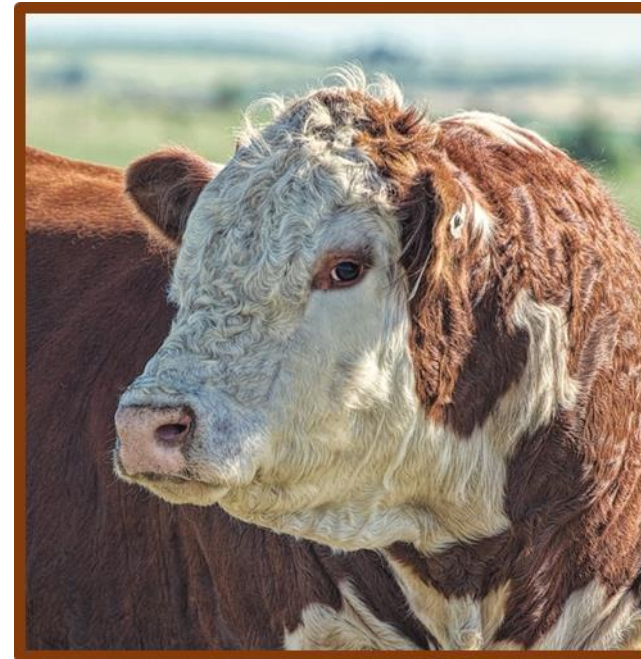


Table 2: Performance and carcass results for 2018-born steer calves

Sire reg. no.	Sire name	No. head	BW ratio	WW ratio	YW ratio	No. harvested	MARB score	MARB ratio	% Choice	% Upper 2/3 Choice	% Prime	HCW	HCW ratio	REA	REA ratio	FAT	FAT ratio	CYG	CYG ratio
Bulls used on heifers																			
43603037	Churchill Kickstart 501C ET	33	98	97	99	16	509	90	88	50	0	822	98	13.1	97	0.60	97	3.45	102
43594696	Huth FTF Torque C002	46	106	104	103	13	566	100	100	69	8	875	105	13.6	101	0.68	110	3.69	108
43268575	OR 3575 Husker N151 ET	27	107	99	100	9	632	112	100	89	22	862	103	14.1	104	0.71	114	3.53	104
43676217	SHF Deadbolt 001A D163	41	107	99	98	17	584	103	100	88	12	809	97	13.5	100	0.53	85	3.06	90
Bulls used on cows																			
43616719	/S Peerless 55000 ET	44	103	98	102	17	498	87	94	41	6	771	104	12.6	101	0.60	108	3.42	106
43720603	/S Revolution 66128	41	94	94	94	19	557	97	100	79	0	706	95	12.5	101	0.47	84	2.86	88
43724674	BR Belle Air 6011	37	102	101	100	14	615	108	100	79	21	749	101	12.0	97	0.64	114	3.58	111
43268007	CL 1 Domino 215Z	48	100	104	105	21	600	105	100	86	14	790	107	12.5	101	0.60	107	3.51	109
43683964	EFBEEF B20 X51 D804	41	96	101	98	25	557	97	92	72	8	707	96	12.0	97	0.61	108	3.35	104
43289496	FTF Prime Product 226Z	39	102	104	102	9	576	101	89	68	11	779	105	12.6	101	0.52	93	3.24	100
43694844	KCF Bennett Relevant D67 ET	42	97	101	100	16	582	102	88	75	19	744	101	12.6	101	0.55	98	3.17	98
43662452	KCF Bennett X51 C558	45	100	100	99	17	575	101	94	71	18	731	99	12.8	103	0.53	94	2.99	93
43268578	OR 3575 Husker N162 ET	30	102	103	104	10	660	115	100	90	40	787	106	13.2	106	0.64	114	3.37	104
43624399	Schu-Lar Conversion 501 ET	54	98	100	100	22	571	100	95	86	5	725	98	12.7	102	0.49	88	2.92	90
43591689	Schu-Lar Selection 16C	50	97	98	99	25	563	98	100	72	8	725	98	12.0	97	0.53	95	3.23	100
43676151	SHF D-Day 001A D04 ET	50	97	98	100	15	566	99	100	80	7	728	98	11.8	95	0.53	95	3.31	103



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