



IRISH CATTLE BREEDING FEDERATION

New Calving Evaluations



Ross Evans



Background

- Calving evaluations are core component of EBI and Beef profit indexes
- Calving data used is 100% farmer recorded
- Industry needs a Dairy Beef index (DBI) with accurate calving evaluations on dairy animals
- DBI using current calving PTAs not suitable
- Opportunity to investigate:
 - Re-definition of the trait depending on targeted animal
 - New farmer recorded data such as birth size and calf vigour

Current approach

Dairy



Heifer



Cow

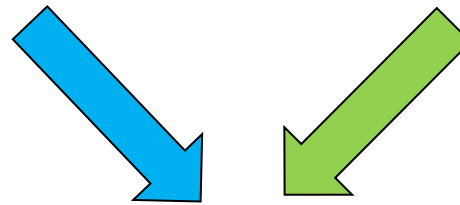
Beef



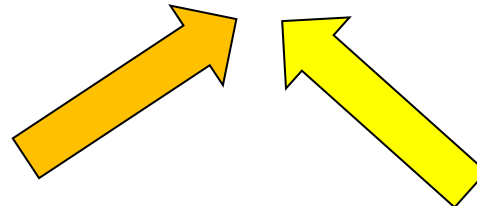
Heifer



Cow



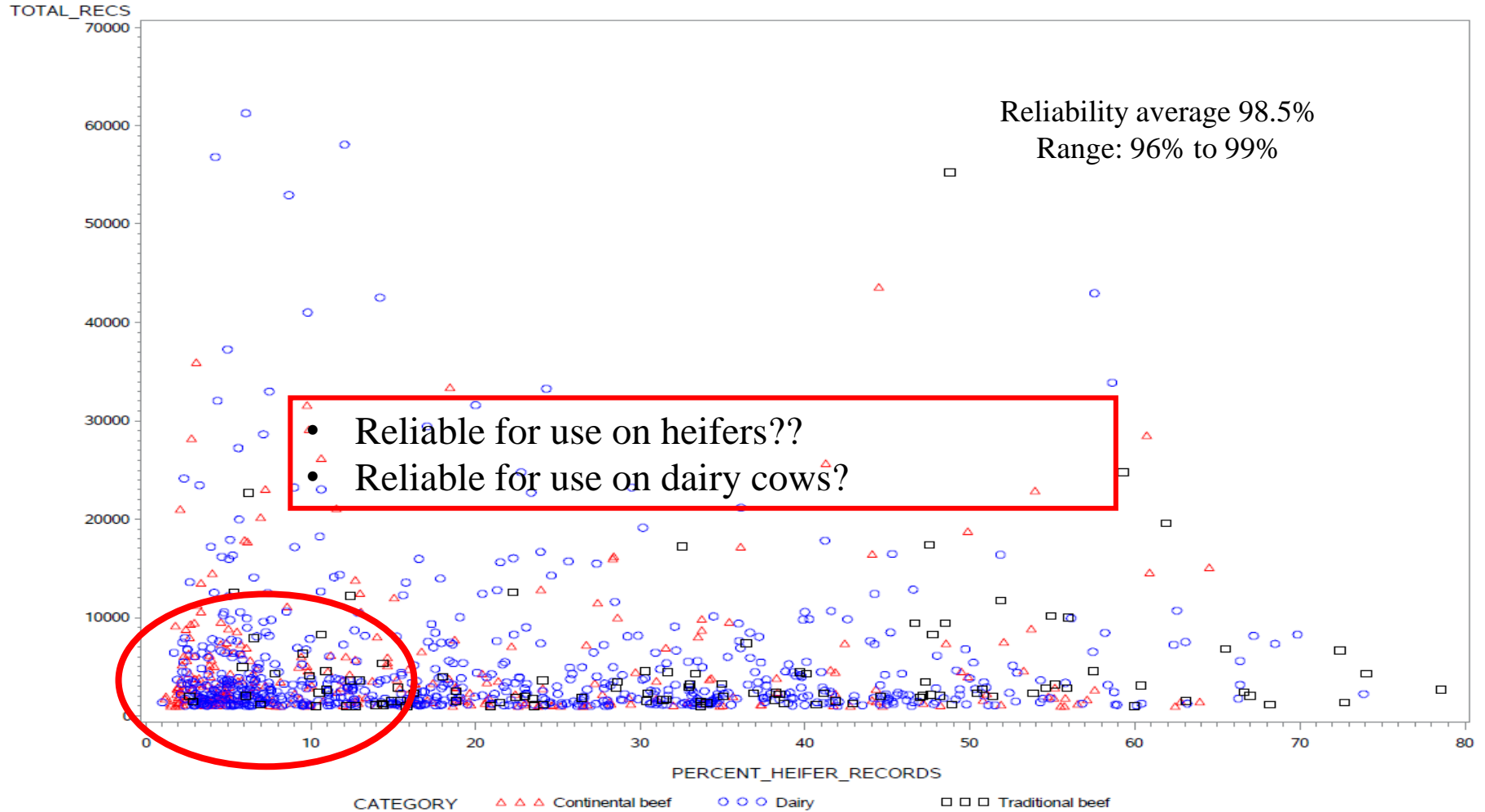
**Single PTA and
reliability calving
difficulty**



**Heritability of 9%
Transformed to a %
difficulty scale with a
base of 6%**

Issues with current evaluation

AI sires with >1000 evaluation records



New approach

Dairy Heifer PTA



Beef Heifer PTA



**Separate traits
4 traits
4 reliabilities**

**Relationship
estimated
between traits**



Dairy Cow PTA



Beef Cow PTA

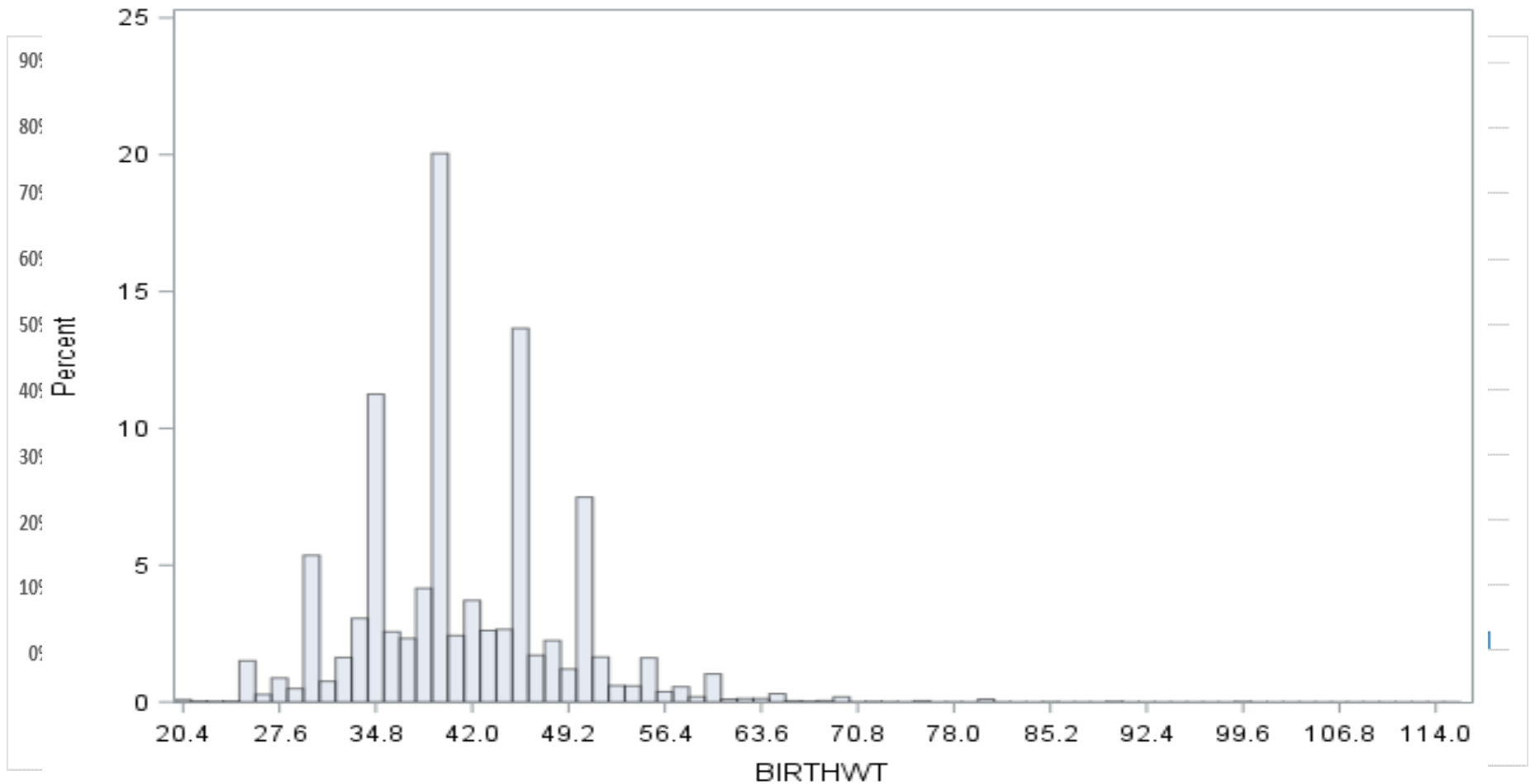
New traits

- Birth size (n = 1,602,347)
 - Recorded by Suckler farmers in BDGP program
 - 5 point scale XS, S, M, L, XL
- Birth weight (n = 277,862)
 - Actual recorded (98%)
 - Predicted from birth measurements (2%)
 - Chest width, height at shoulder

Data edits

- Sire known
- Parity 1 to 15, min heifer age of 20 months
- Calving 1 to 4, Birth weight 20-115 kg
- Censored records:
 - ET births
 - Malpresentation
 - WHPR evidence of C-section in conflict with score
- Variation in the herd for each trait in a seasonal 3 month window

Trait phenotypic distribution



Genetic parameters for new traits

Trait	DairyHeifer	Dairy Cow	Beef Heifer	Beef cow	Birth size	Birth weight
DairyHeifer	16%					
Dairy Cow	0.91	8%				
Beef Heifer	0.80	0.78	17%			
Beef cow	0.62	0.59	0.94	15%		
Birth size	0.82	0.74	0.88	0.85	24%	
Birth weight	0.63	0.64	0.64	0.62	0.52	41%

- Different heritability
- Strong heifer cow correlation dairy and beef
- Correlations not as strong across dairy and beef
- Birth size is a good predictor trait

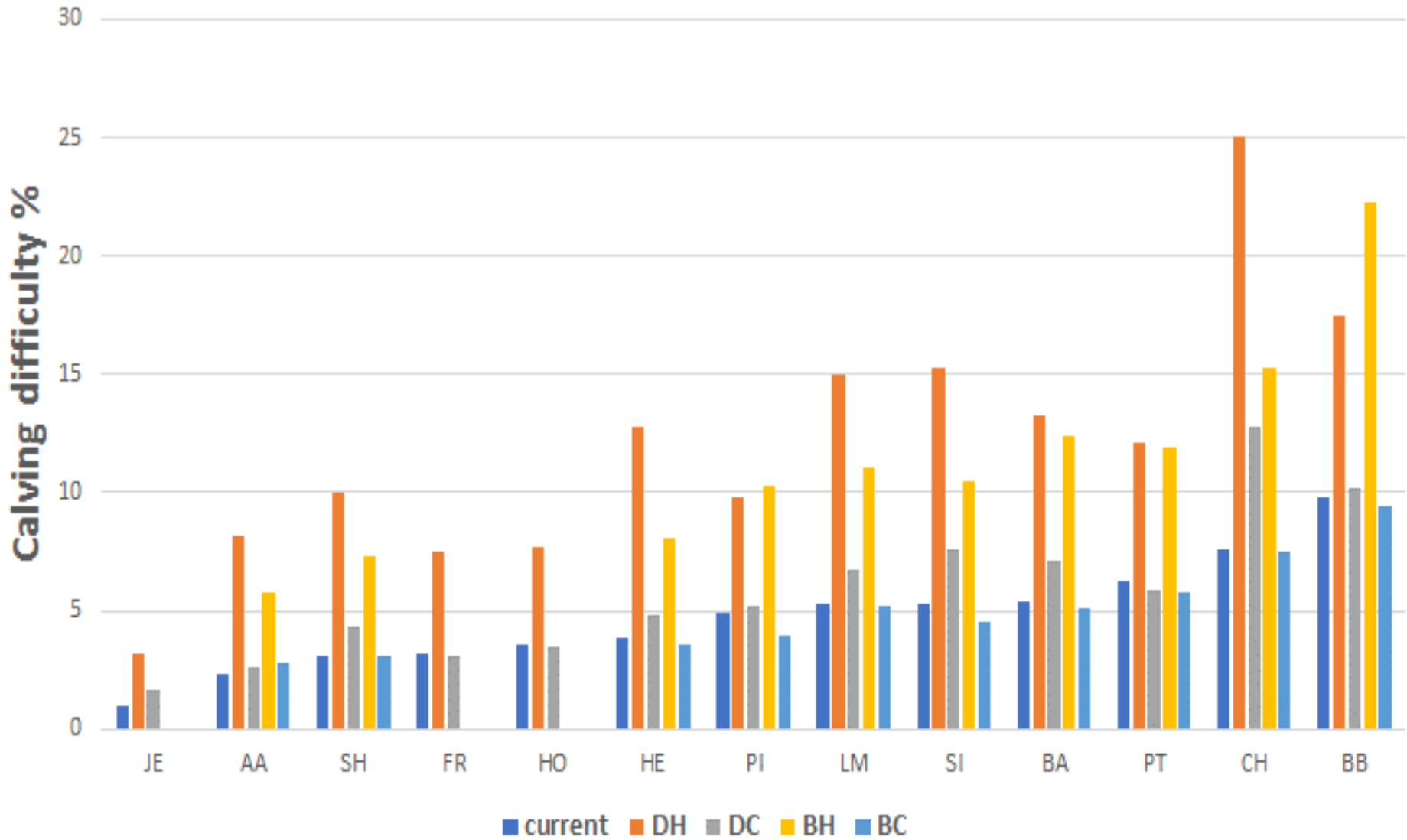
Validation

- 2018 born animals
- Phenotype omitted and Parental Average calculated

Validation	N	correlation with phenotype			Slope	
		EBV current	Ebv new	% increase	EBV current	Ebv new
DH	84,981	0.18	0.23	28%	1.67	0.91
DC	302,698	0.21	0.23	10%	1.23	0.94
BH	21,013	0.2	0.21	5%	1.7	0.91
BC	114,091	0.2	0.21	5%	1.11	0.85

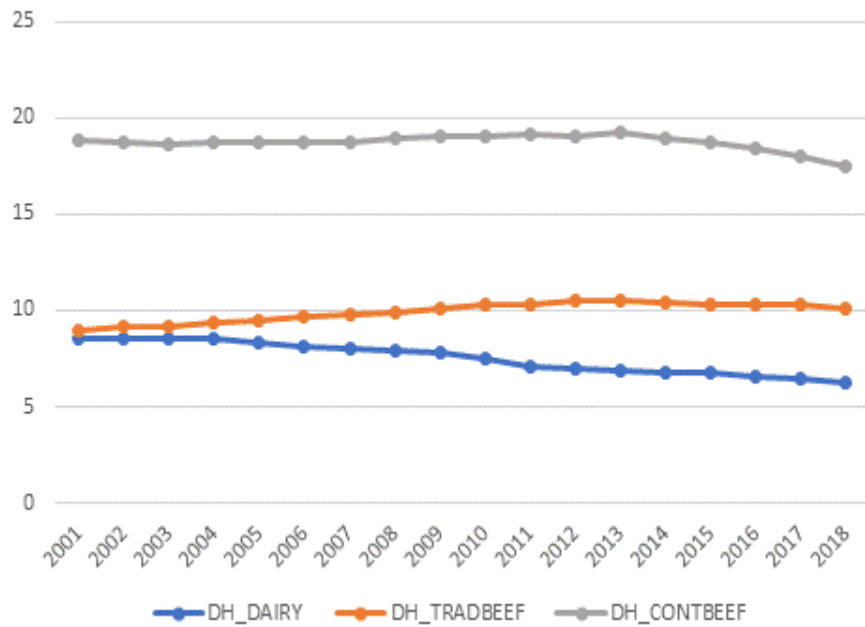
- New evaluations are better at predicting phenotype
- More pronounced for dairy herd calvings
- Existing calving evaluation not predicting extent of difficulty in heifers

Calving difficulty pta breed averages

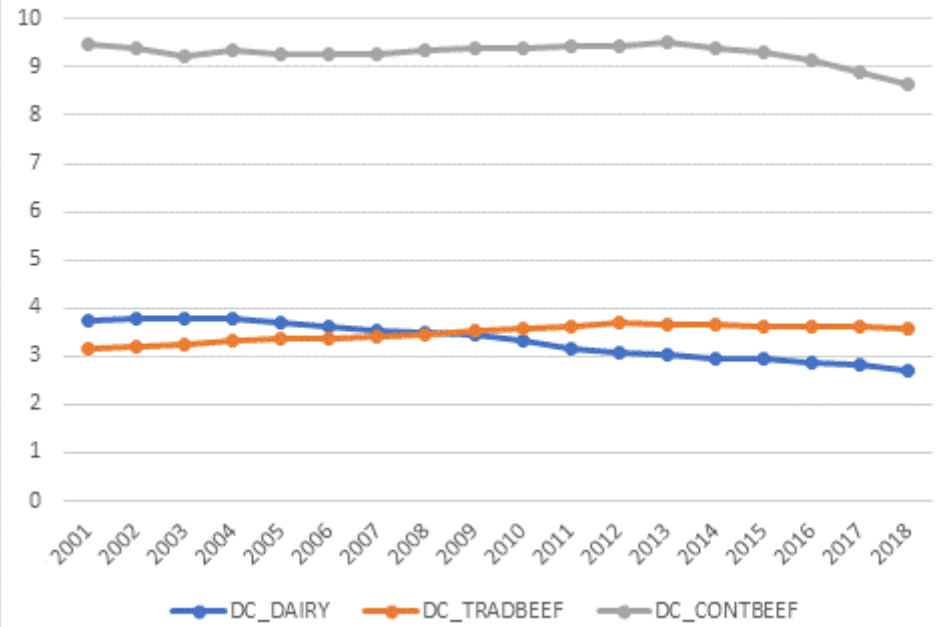


Genetic Trends: Pedigree animals

Dairy Heifer

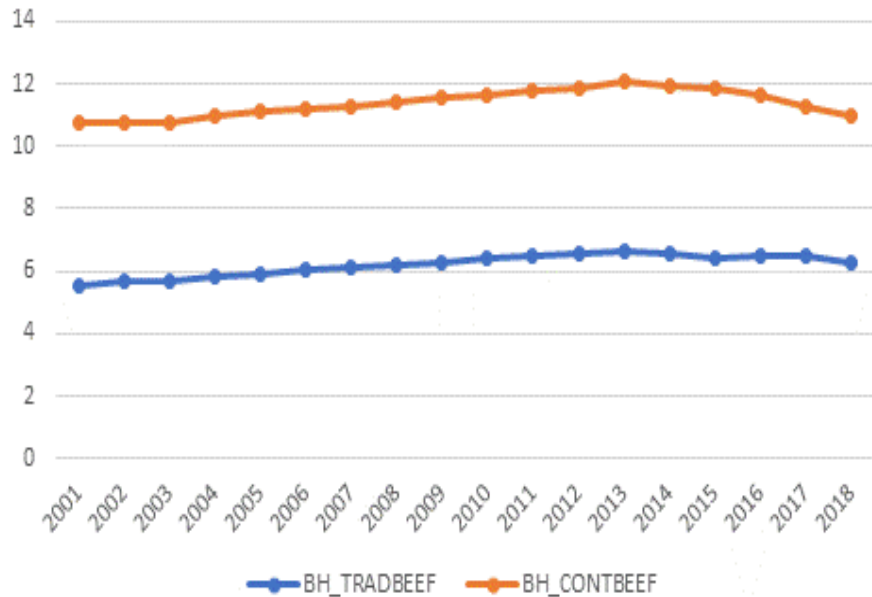


Dairy Cow

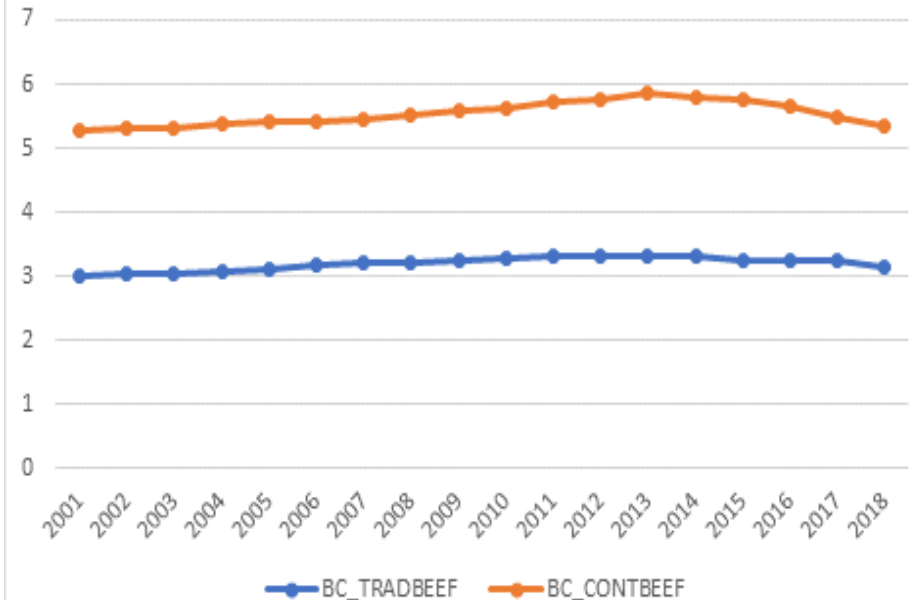


Genetic Trends: Pedigree animals






Beef Heifer



Beef Cow



Current status

- Genetic parameters 
- EBVs and reliabilities 
- Tested in new DBI 
- TAG and ICBF board approval for use in DBI 
- Implementation meeting on publication 
- Foreign ebvs and genomics 
- Impact of inclusion in EBI and Euro-stars 
- TAG approval, education and rollout 
- Changes: bull search, profiles ,reports, sire advice 
- Target full integration, Autumn 2019 

Conclusions

- Targeted calving evaluations more accurate than single all encompassing trait
- New evaluations suitable for DBI
- Calf birth size a very useful predictor trait
 - Rollout to dairy farmers
- Significant educational challenge ahead of full rollout
 - Beef sires with potential 4 calving PTAs



Our Farmer & Government Representation



Our AI & Milk Recording Organisations



Our Herdbooks



Acknowledging Our Members