Sheep Ireland
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New calving evaluations

How a more detailed model is beneficial to everyone

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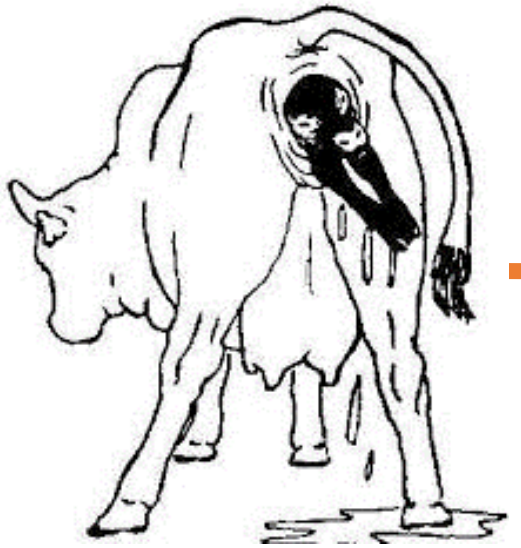
Background to Current Calving Evaluation

- **Predicted Transmitting Ability (PTA):** measure of genetic merit
  PTA range: 1 - 30%

- **Reliability:** measure of confidence surrounding PTA
- Reliability: 0 - 99%



~20 million records on 40 breeds

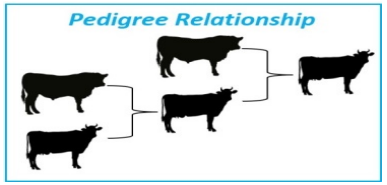
No assistance

Some assistance

Vet assistance

Considerable assistance

Heritability
9%



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Strengths v Weaknesses

Strengths

- One published trait and reliability for all cow types
- Comparable across breeds

Weaknesses

- No visibility of contribution of heifer v cow records
- No visibility of contribution of beef v dairy records
- High reliability bulls may NOT be proven on the type of cow you have
  - i.e. first crop progeny normally proven on mature cows
- Assumed that the genetic component is the same across all cow types
- Genomics not tailored to specific regions that may differ across cow types

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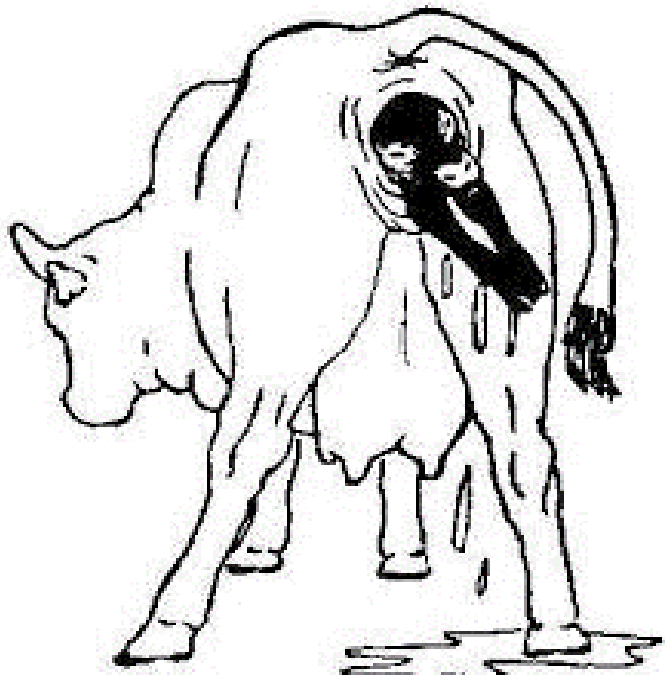
New Calving Evaluation

Dairy Herd

Dairy Heifer

Dairy Cow



Suckler Herd

Beef Heifer

Beef Cow

Now treating as 4 different traits

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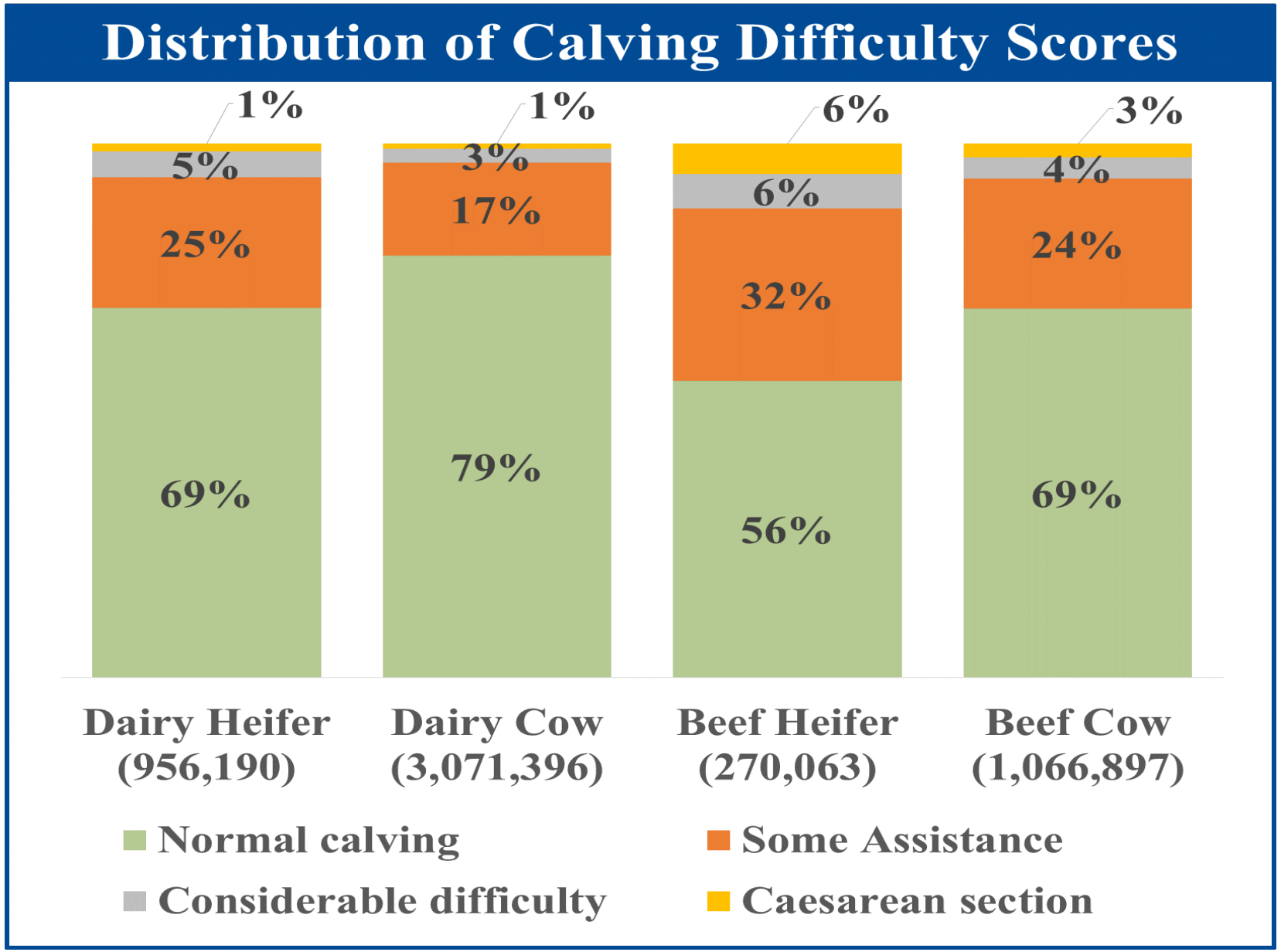
New Trait phenotypic profiles



- Heifers have a higher incidence than cows
- Beef animals have a higher incidence than dairy animals

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Heritability and Genetic correlations

Trait	*heritability*	Dairy Heifer	Dairy Cow	Beef Heifer	Beef cow	Birth size
Dairy Heifer	16%					
Dairy Cow	8%	0.91				
Beef Heifer	17%	0.8	0.78			
Beef cow	15%	0.62	0.59	0.94		
Birth size	24%	0.82	0.74	0.88	0.85	
Birth weight	41%	0.63	0.64	0.64	0.62	0.52

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International evaluation (INTERBULL)

Country	Old	New	Difference
AUS	0.69	0.76	0.07
CAN	0.86	0.92	0.06
CHE	0.82	0.93	0.11
DFS	0.83	0.89	0.06
FRA	0.83	0.93	0.10
ISR	0.90	0.91	0.01
ITA	0.73	0.77	0.04
NLD	0.85	0.94	0.09
USA	0.77	0.84	0.07
GBR	0.74	0.77	0.03
HUN	0.74	0.77	0.03
DEU	0.77	0.86	0.09
BEL	0.74	0.77	0.03
NZL	0.82	0.75	-0.07
SVK	0.79	0.78	-0.01
ESP	0.77	0.77	0.00
Average	0.79	0.84	0.04

- Dairy Cow trait submitted from IRL to test run
- Improved correlation for 13 out of 16 countries
- Partitioning out dairy from beef herd data making a difference!

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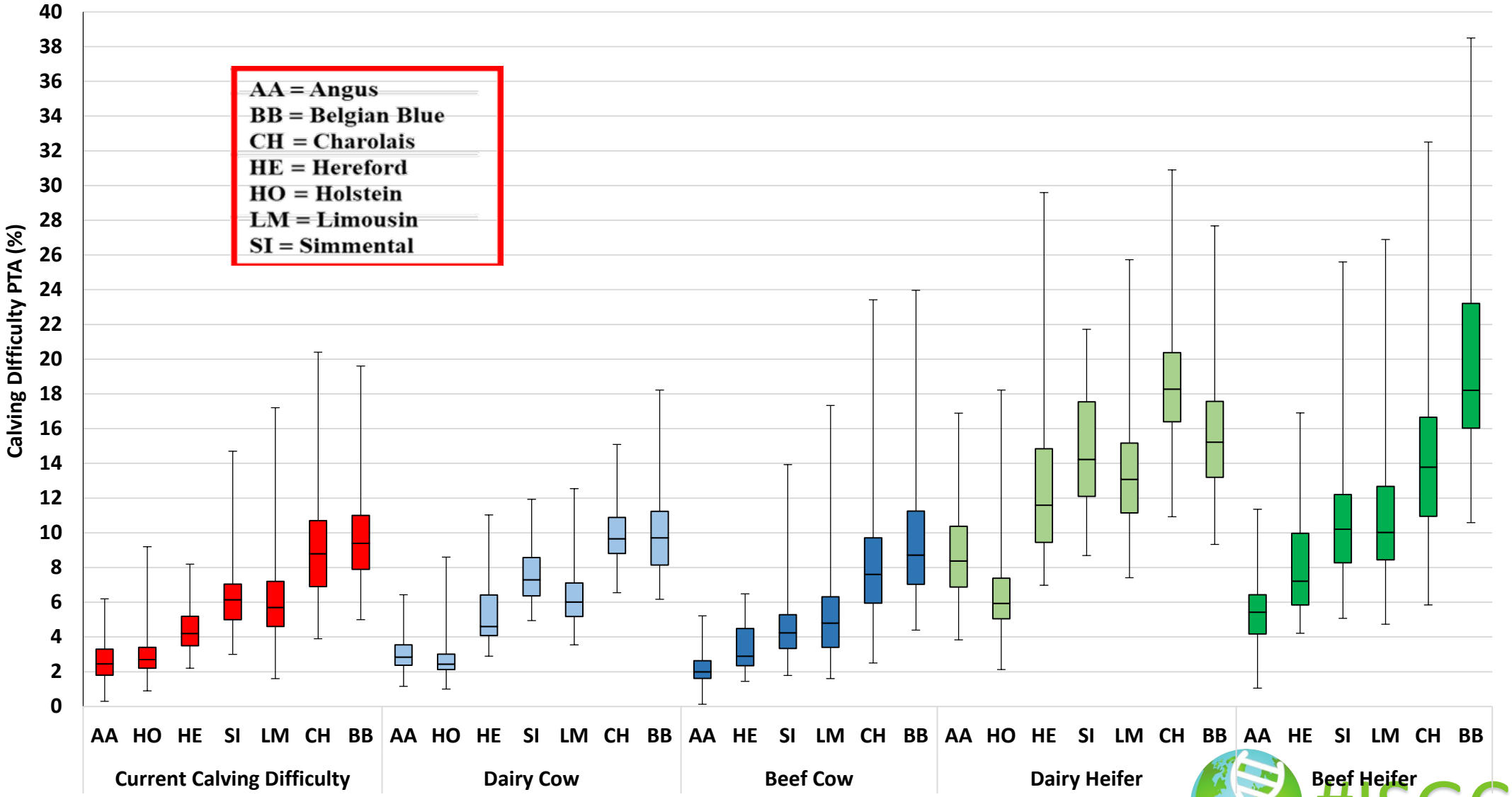
Breed profiles new v old



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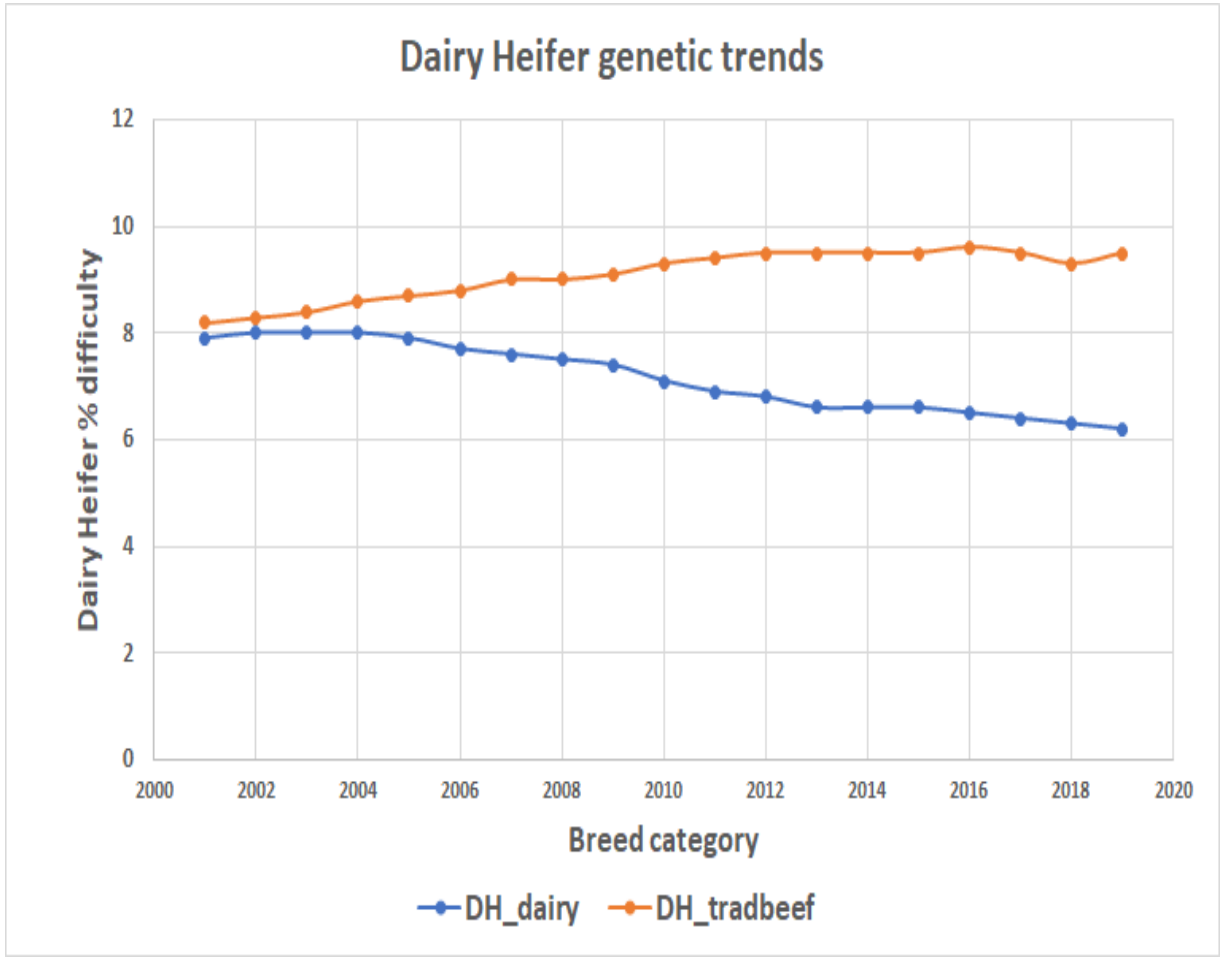
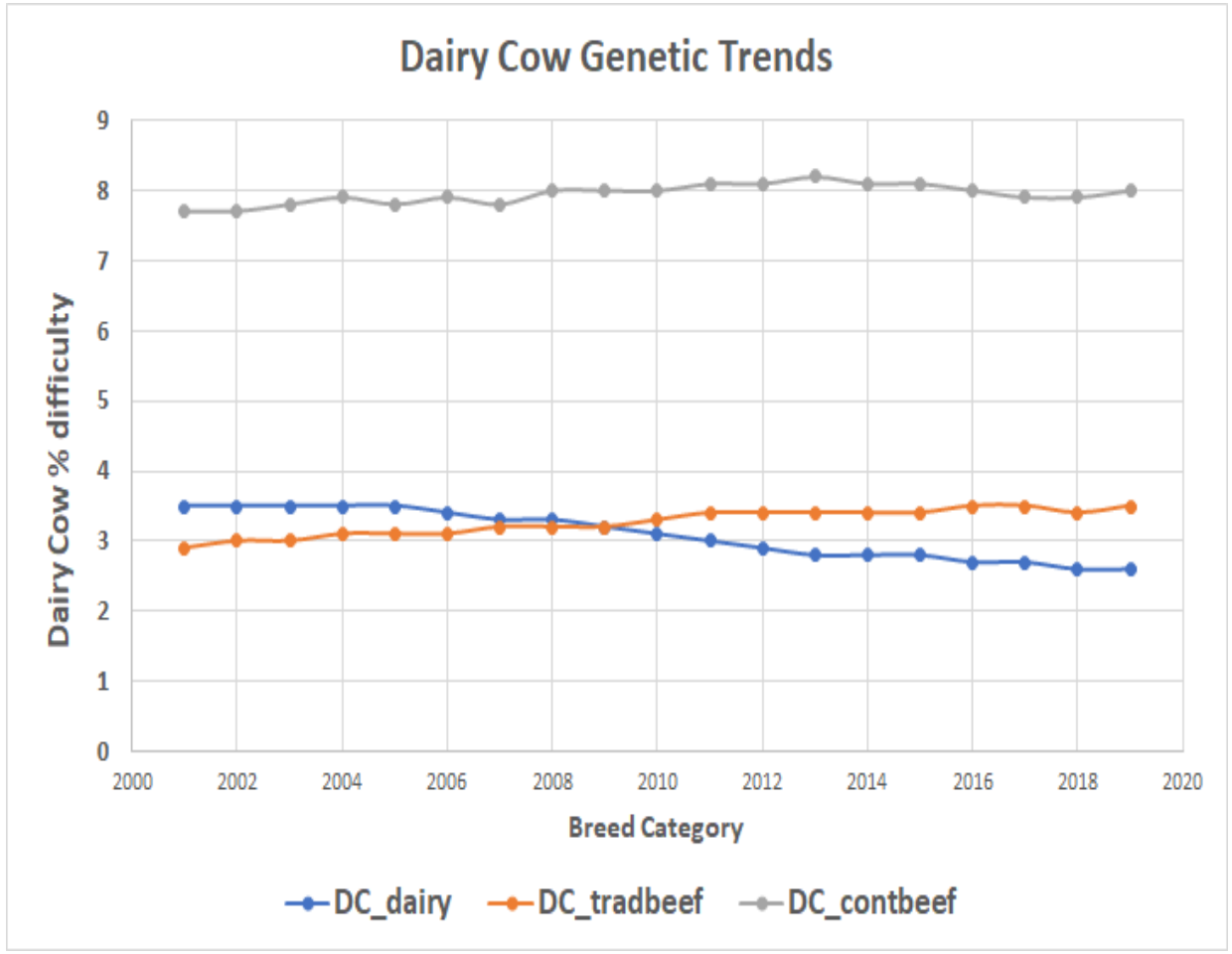
Genetic trends: Dairy cow trait





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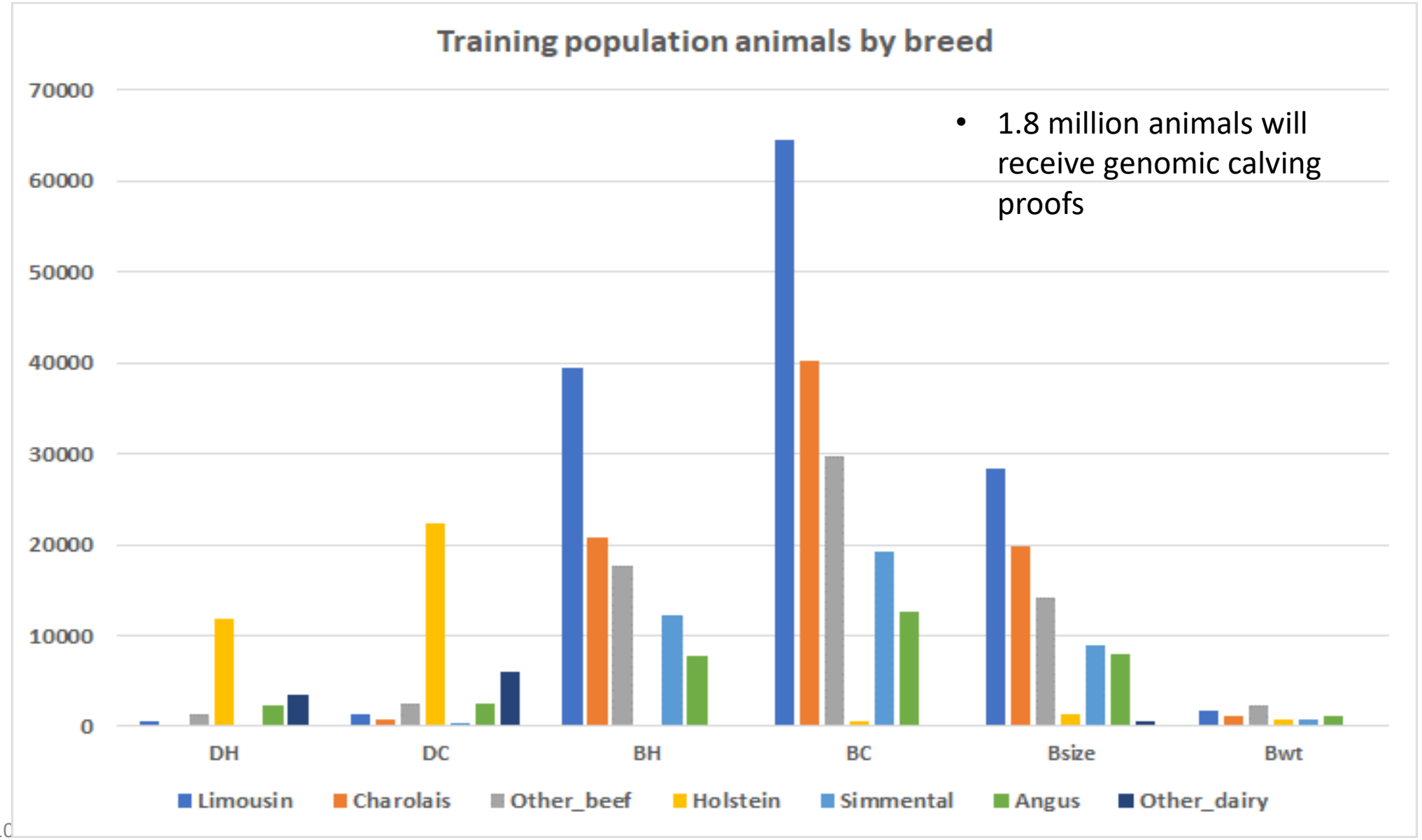
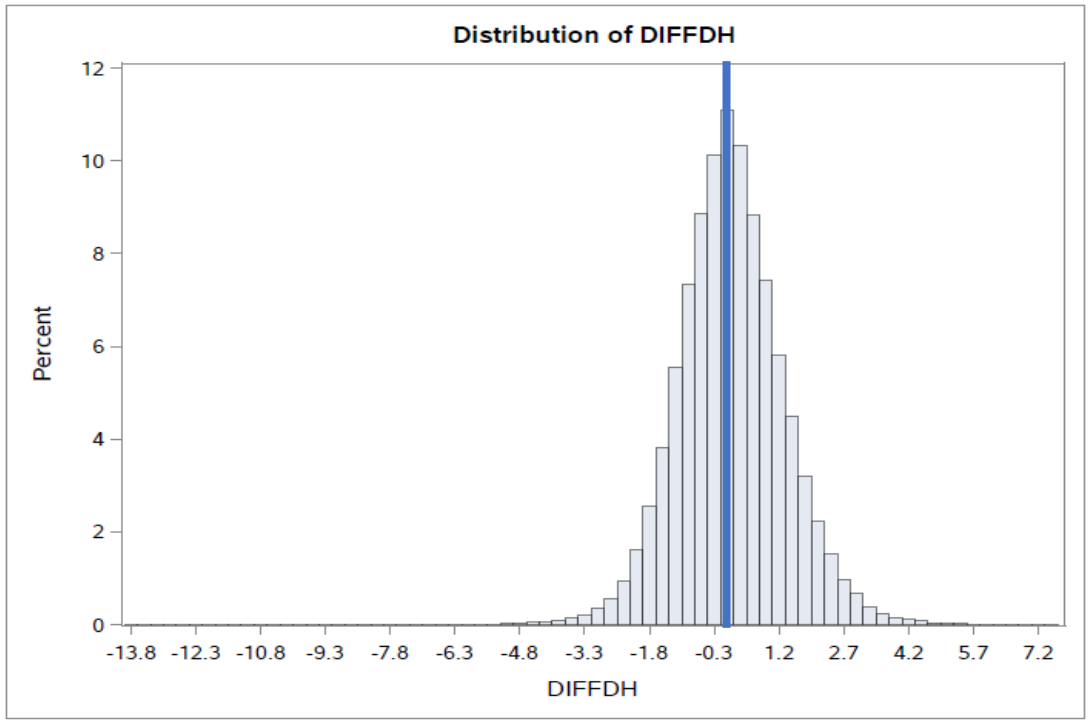
Genomics: Breed influence by trait



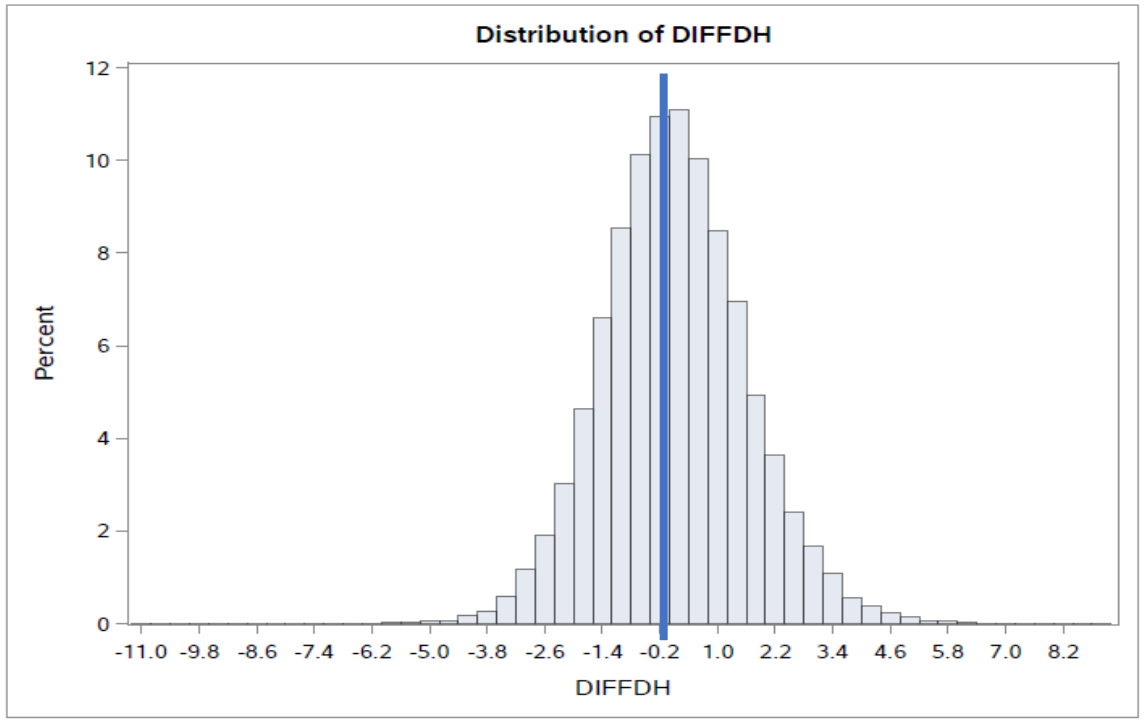
- 1.8 million animals will receive genomic calving proofs

Impact of genomics

Holstein-Friesian



Angus



- 99% of HOFR animals move by -2.9 to 3.2% on Dairy Heifer calving difficulty
- 99% of AA animals move by -3.4 to 3.9% on Dairy Heifer calving difficulty
- Average reliability increase for AA = 26% and HOFR = 24%

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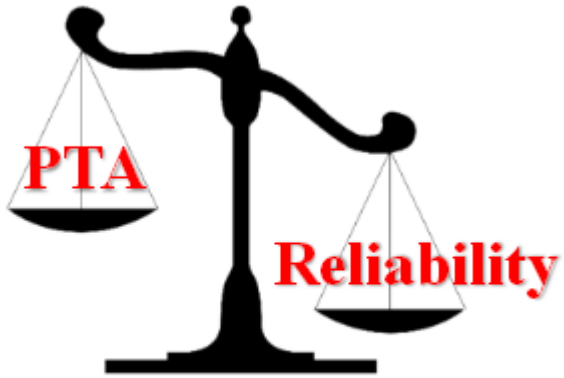
Risk for use on heifers

Current adoption

- 2% upper limit
- 2% was top 15% of Holstein AI sires



Current selection is over-reliant on PTA

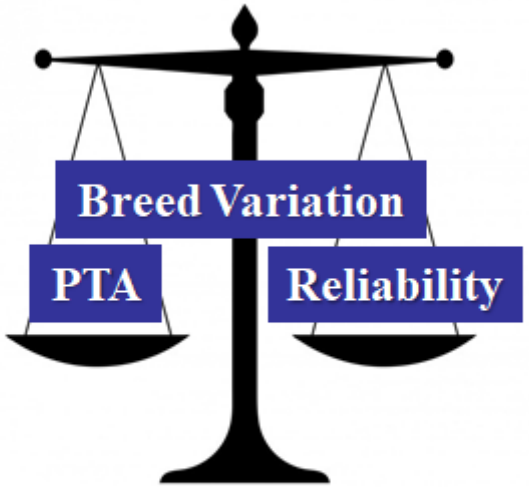
@ 75% rel < 10% of 1st parity calvings

@ 99% rel > 20% of 1st parity calvings

Preferred sire

BUT! Next year @99% With 30% 1st parity recs

New



New methodology proposes to balance PTA, reliability and breed variation

1. High Risk
2. Moderate Risk
3. Low Risk

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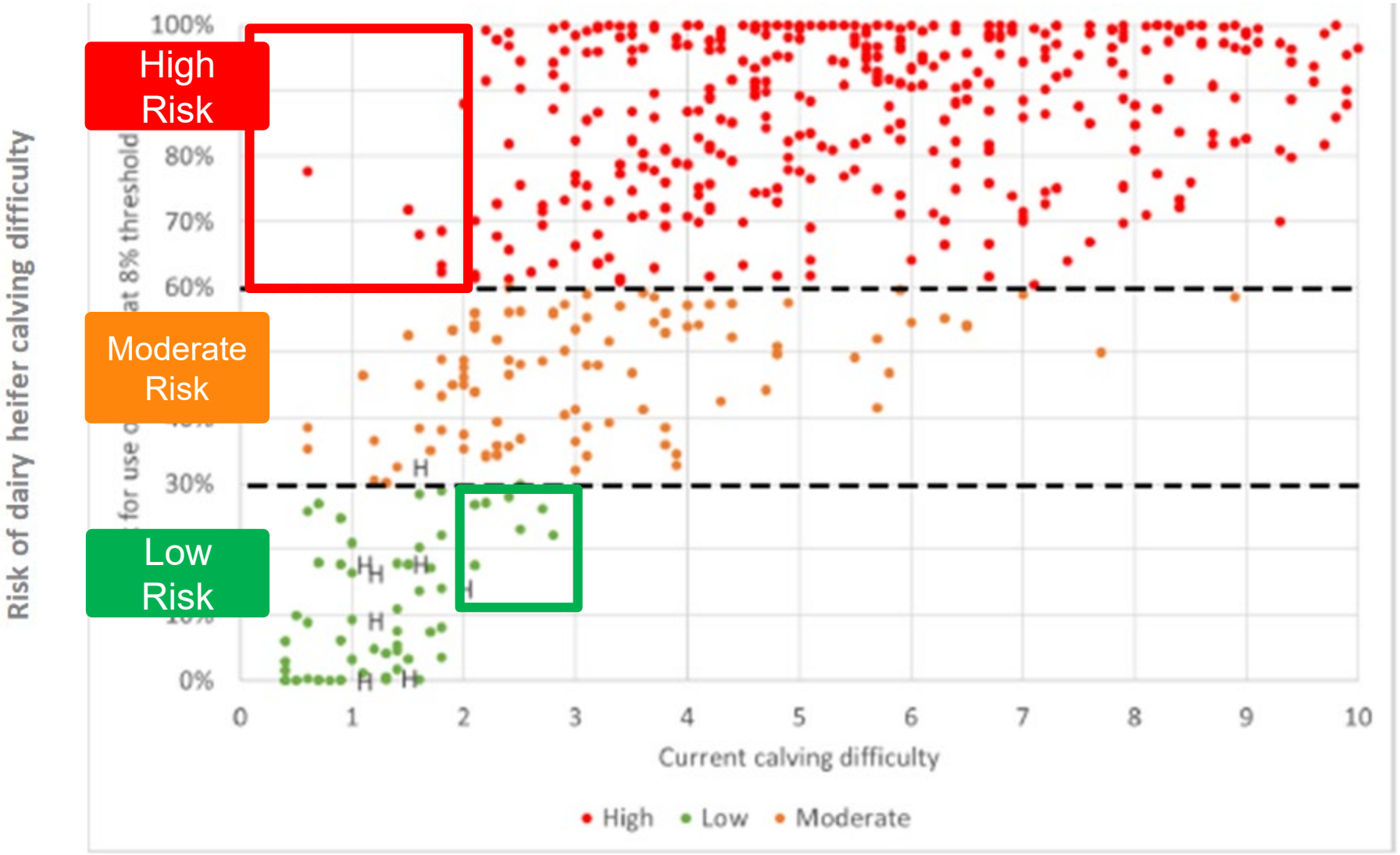
Comparing old with new



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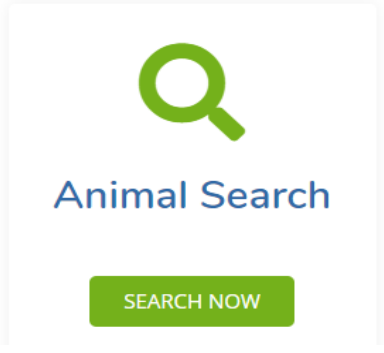
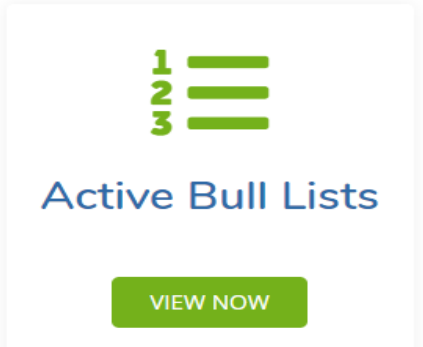
Impact on web profiles/search

133 ICBF online pages where calving difficulty PTA is shown!

All need to be changed





Profile Screen
Basic Herd Profile
Beef Eurostar
Breeding Chart Profile
C.O.W (Cow's Own Worth)
Dairy Ebi Profile
Dairy Genomic Evaluation Profile
Expected Calving (Beef)
Expected Calving (Dairy)

Reports

- BEEF CALVING REPORT
- BEEF OUTPUT REPORT
- DAIRY CALVING REPORT
- DRY STOCK REPORT
- EBI REPORT
- BDGP EURO-STAR REPORT
- BEEF EUROSTAR REPORT
- EXPECTED CALVING LIST
- END OF SEASON FERTILITY REPORT
- WEEKLY FERTILITY REPORT
- GROW REPORT
- SLAUGHTER REPORT
- SUCKLER COW REPORT
- WEIGHT RECORDING REPORT
- WEANING PERFORMANCE REPORT
- DAIRY COW REPORT
- HERDPLUS NOTEBOOK

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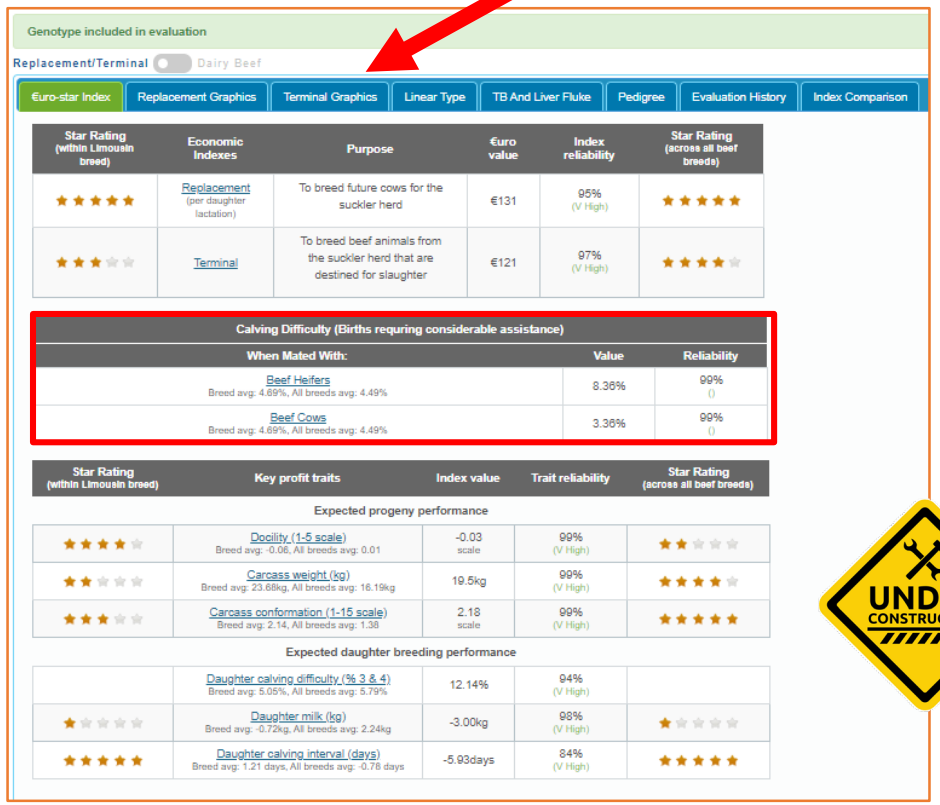
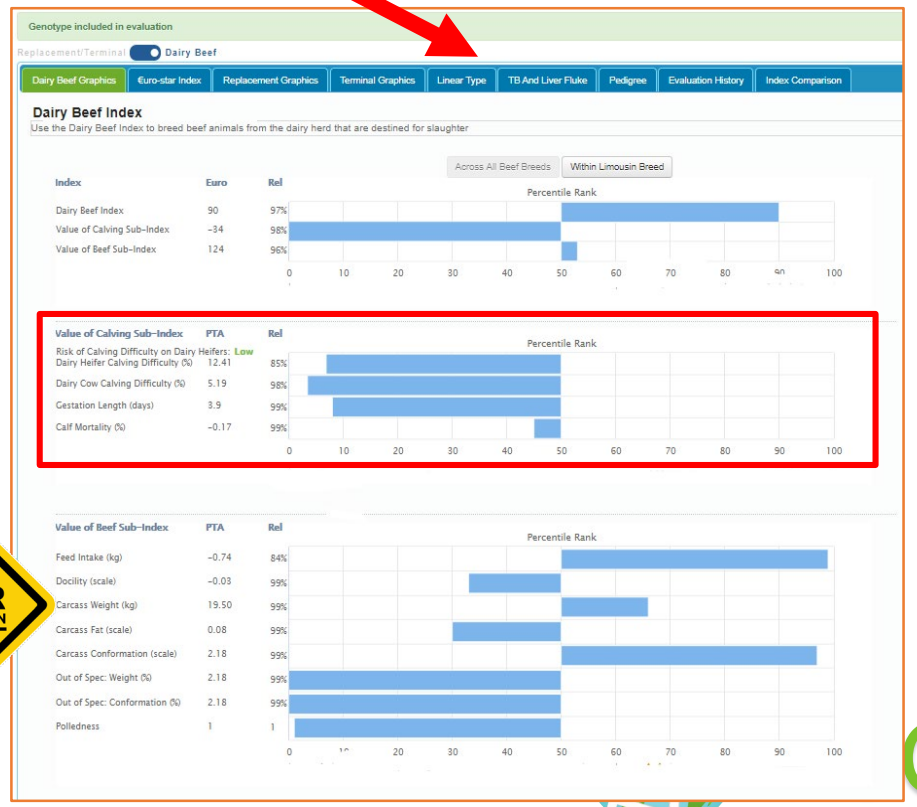
Changes to bull search

Beef Farmer

Dairy Farmer

Farmer initial preference remembered





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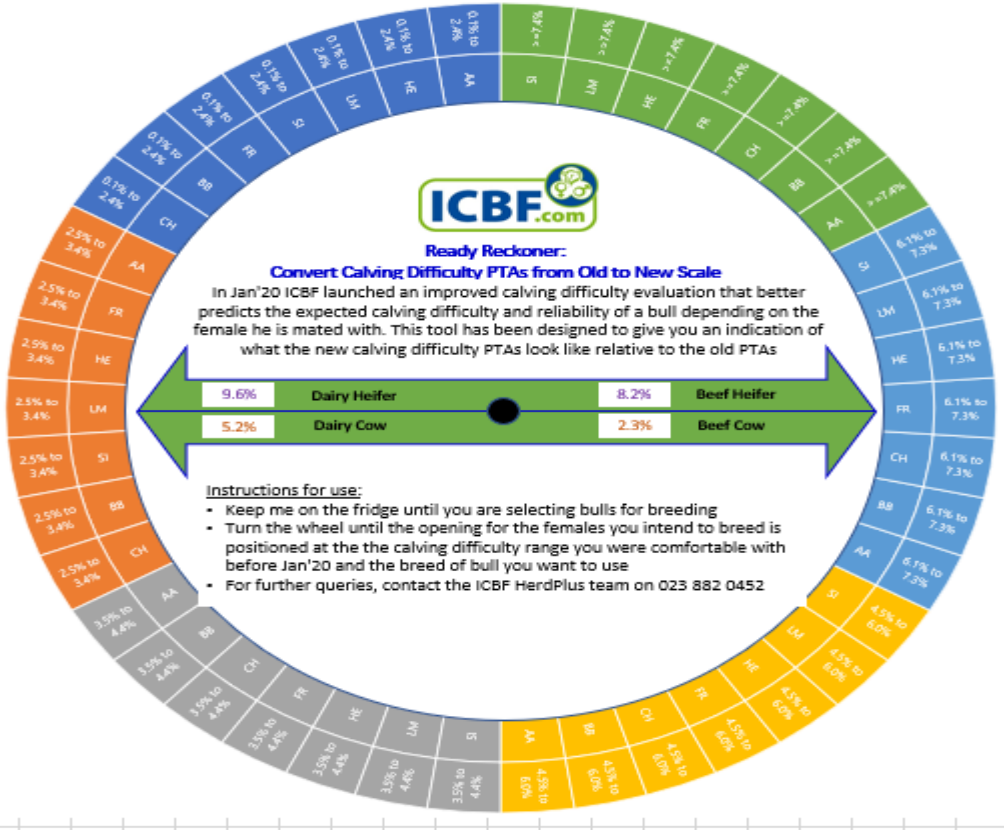
Ready Reckoner

Old	Dairy Cow	Beef Cow	Dairy Heifer	Beef Heifer
0.1% to 2.4%	2.7	2	6.7	5
2.5% to 3.4%	3.5	2.6	8	6.4
3.5% to 4.4%	4.7	3.2	10.1	7.7
4.5% to 6.0%	6.7	4.2	13.2	9.5
6.1% to 7.3%	8.5	5.5	15.9	11.3
>=7.4%	9.8	7.9	18.1	14.6



Will be distributed to farmers in coming weeks

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Conclusions

- Evaluation of calving difficulty has changed
  - Same data….. Treated differently!
  - New Holstein PTAs tally better with other countries
  - Not a big impact on EBI rankings of top sires
- Benefits of new system
  - Allows more targeted breeding decisions (heifers, beef)
  - Allows more focus on heifer trait (New Risk measure)
- Changeover happens next week with new proof run

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Ireland's native dairy breed

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