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New calving evaluations

How a more detailed model is beneficial to everyone

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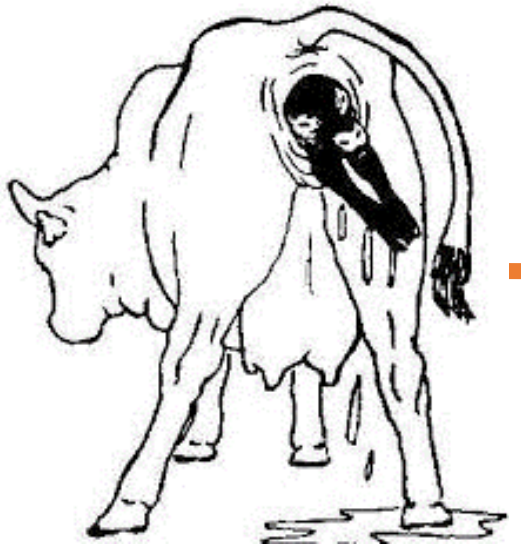
Background to Current Calving Evaluation

- **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

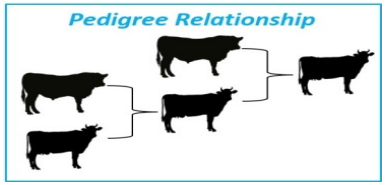
No assistance

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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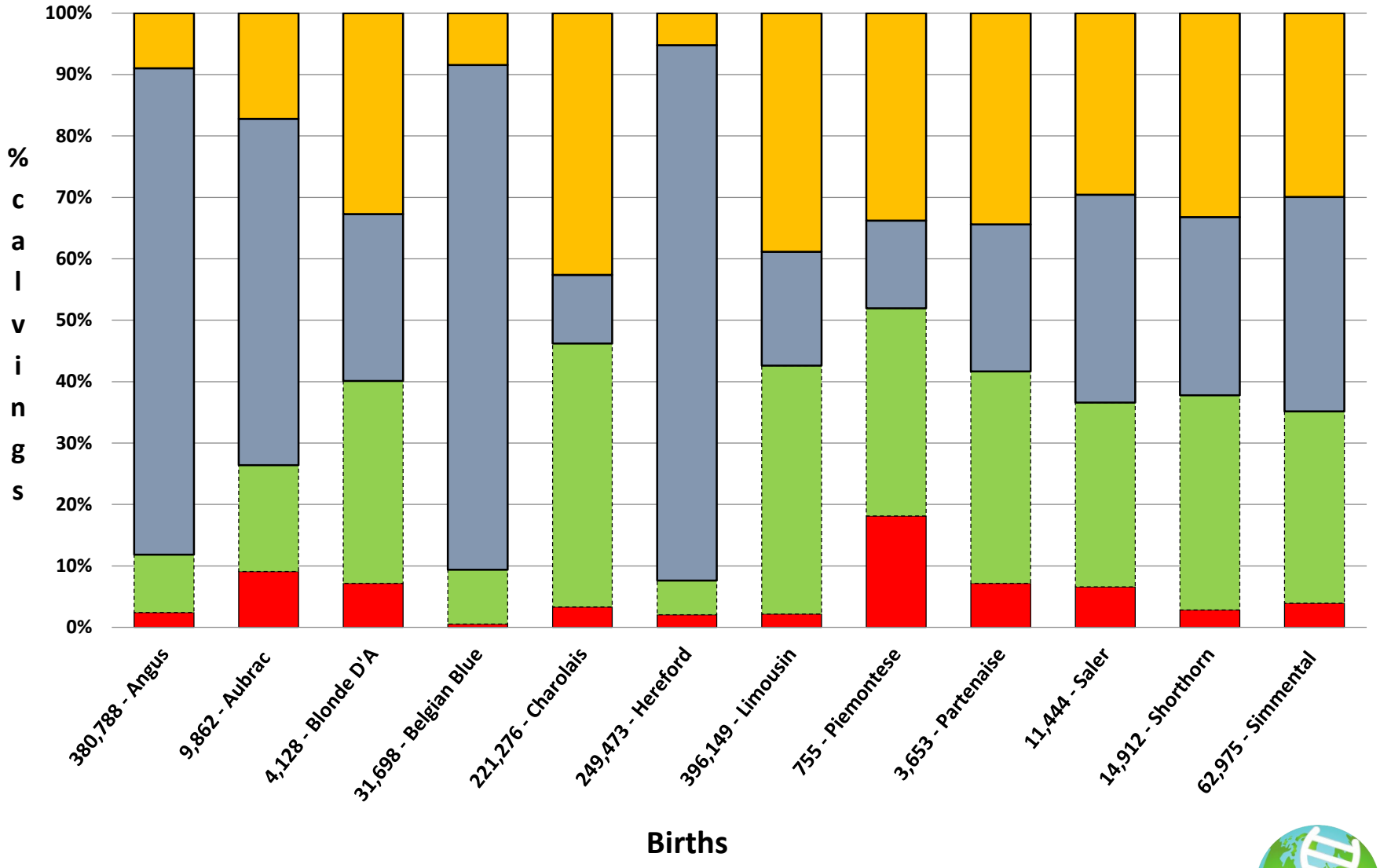
Breed Profile: Calves born 2018



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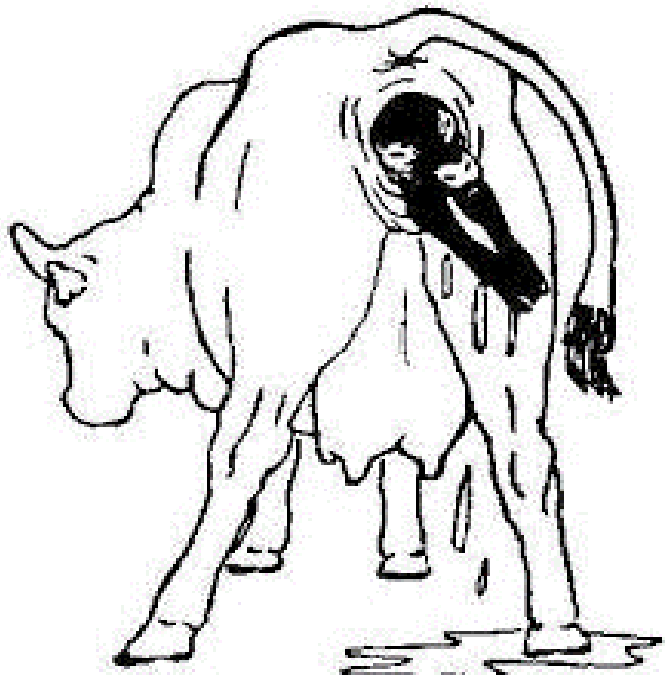
New Calving Evaluation

Dairy Herd

Dairy Heifer

Dairy Cow



Suckler Herd

Beef Heifer

Beef Cow

Now treating as 4 different traits

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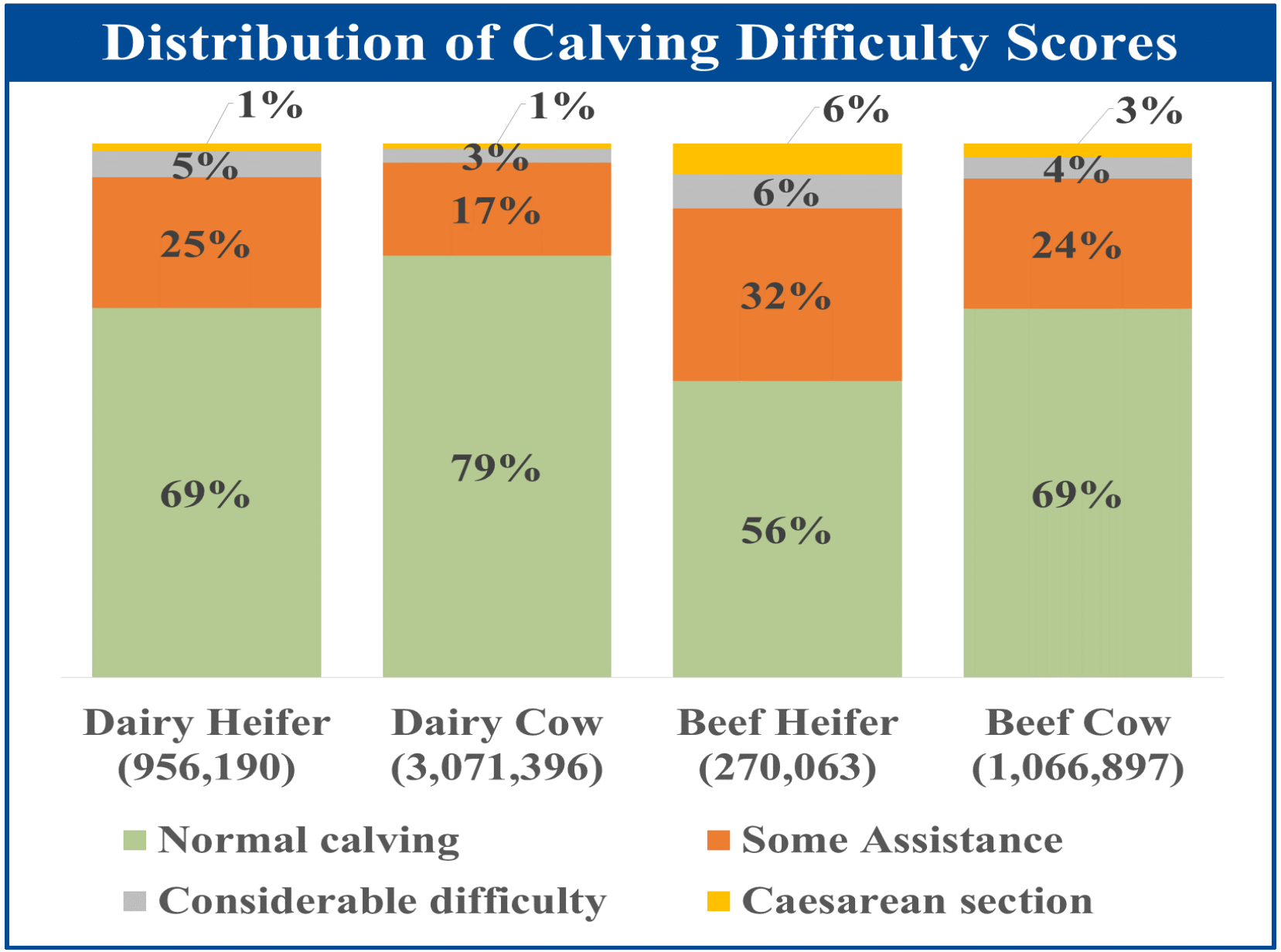
New Trait phenotypic profiles



- 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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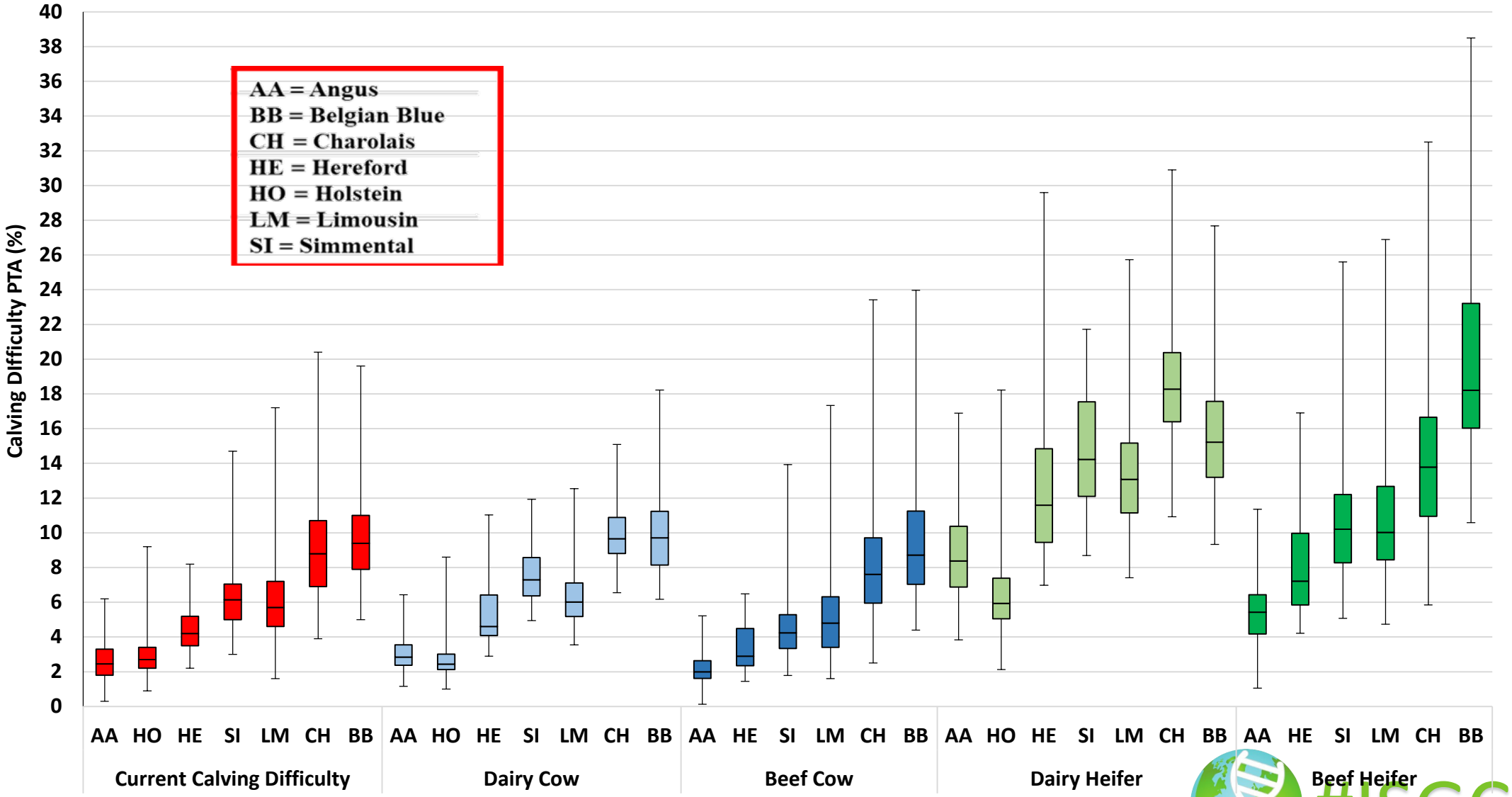
Breed profiles new v old



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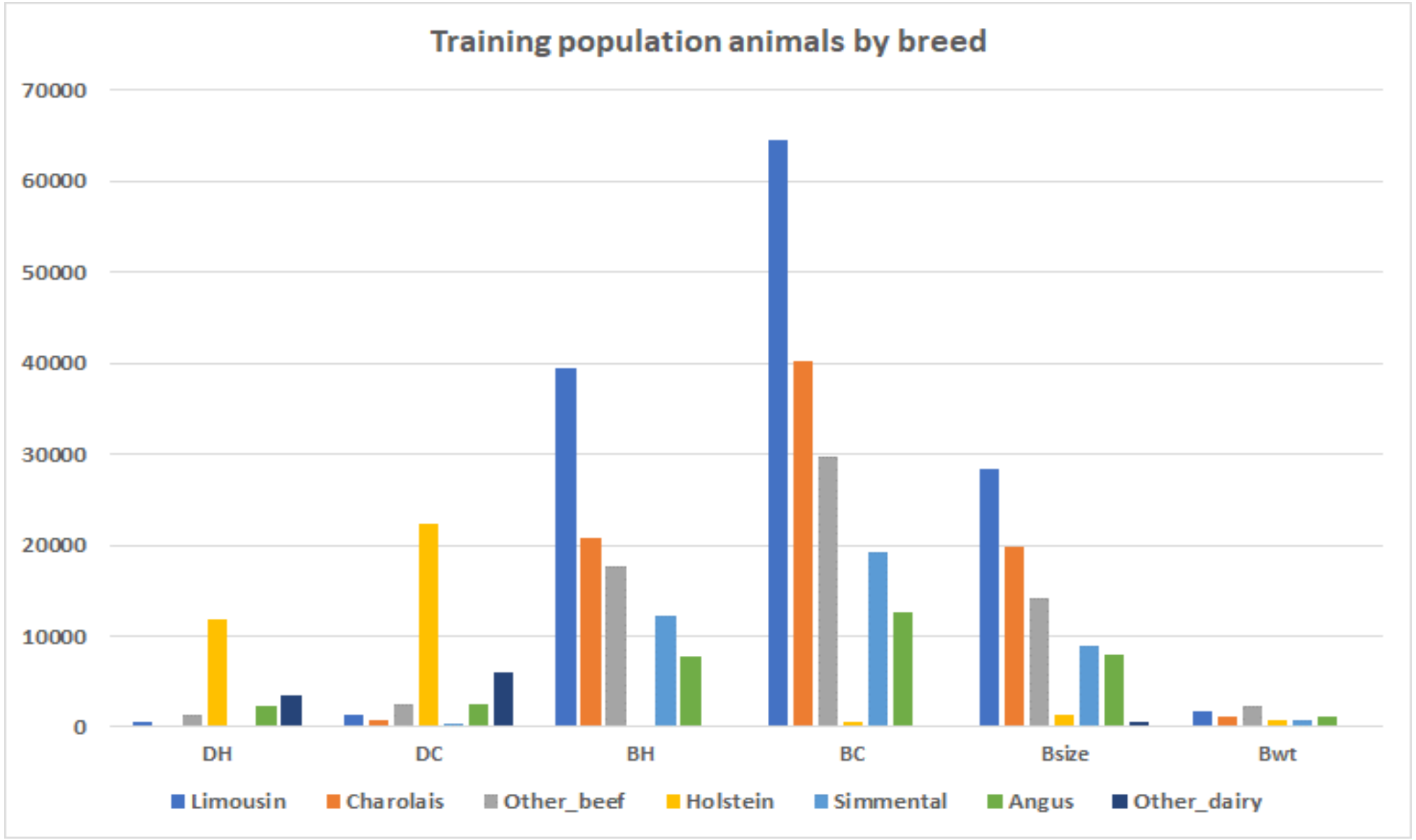
Genomics: Breed influence by trait



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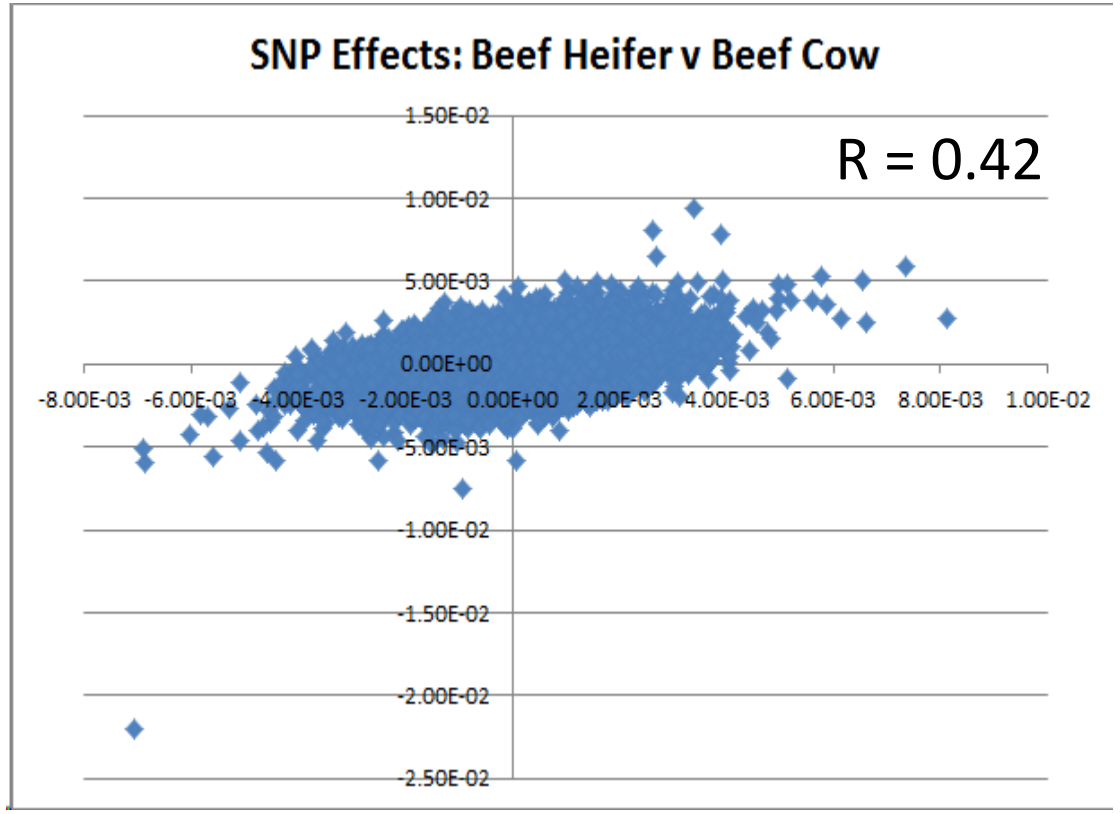
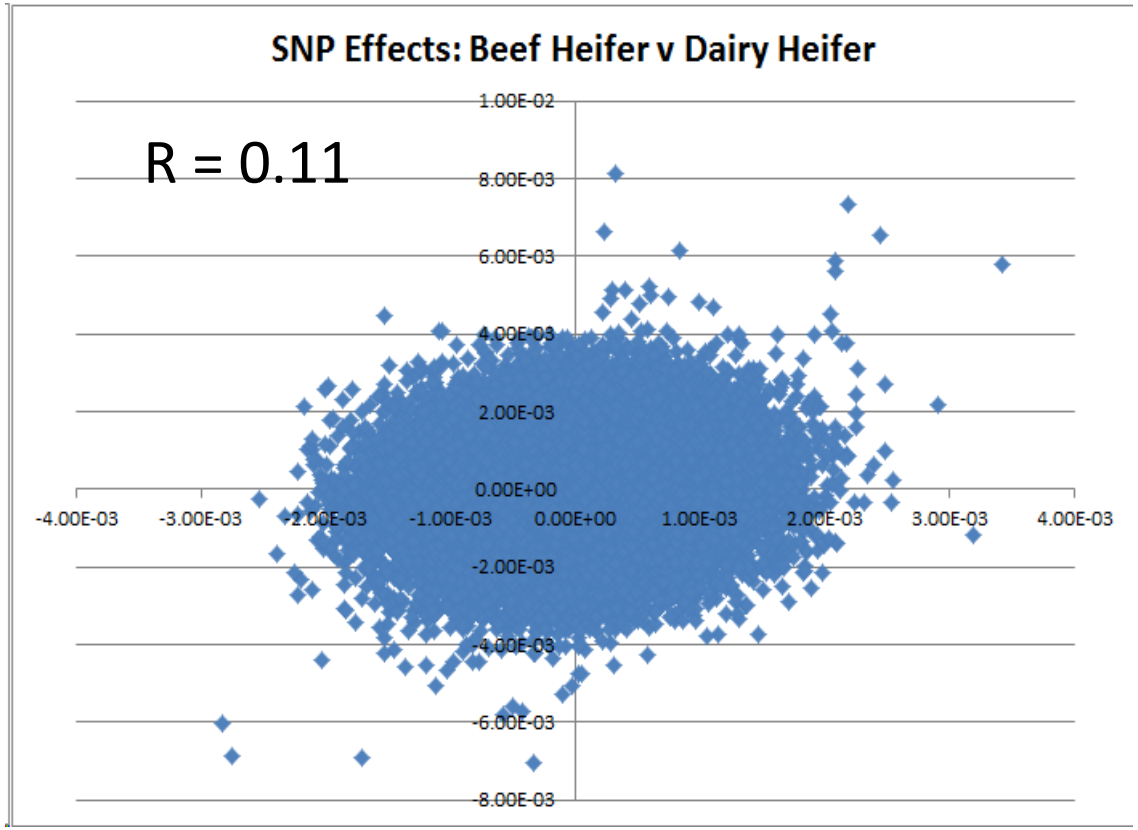
SNP effect differences by trait





SNP effects influenced by representative breeds

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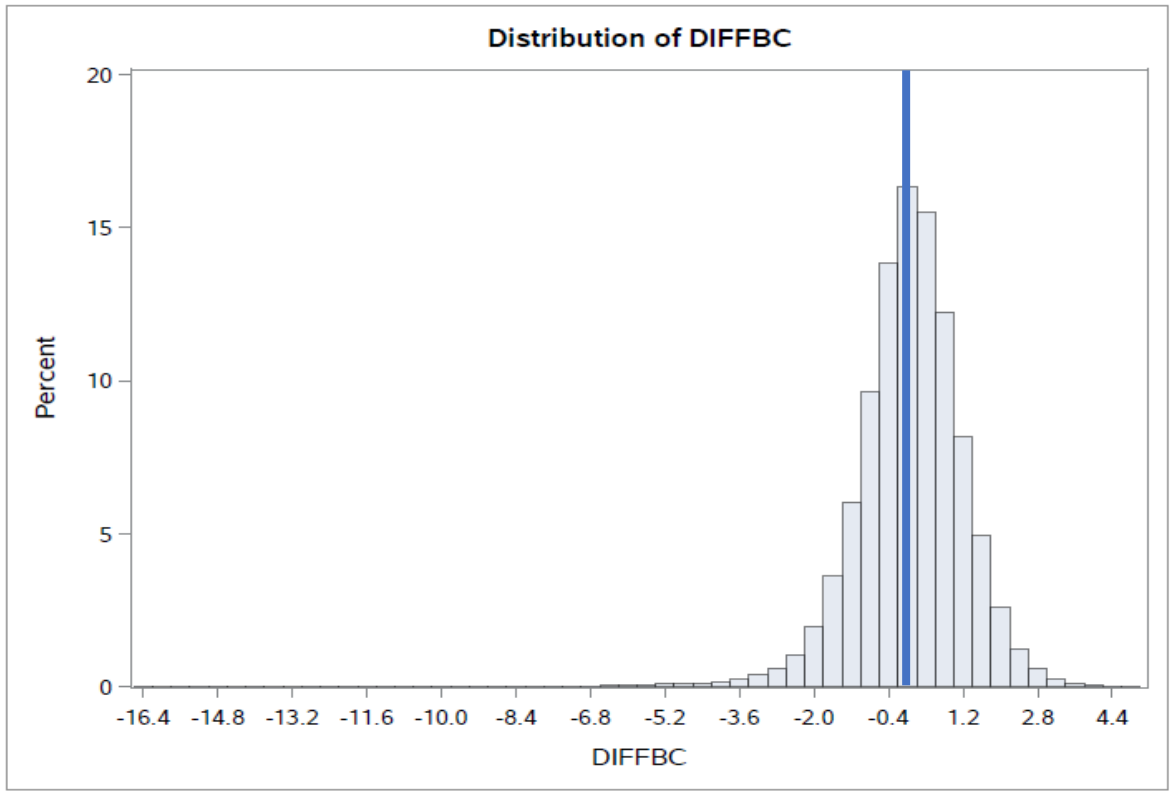
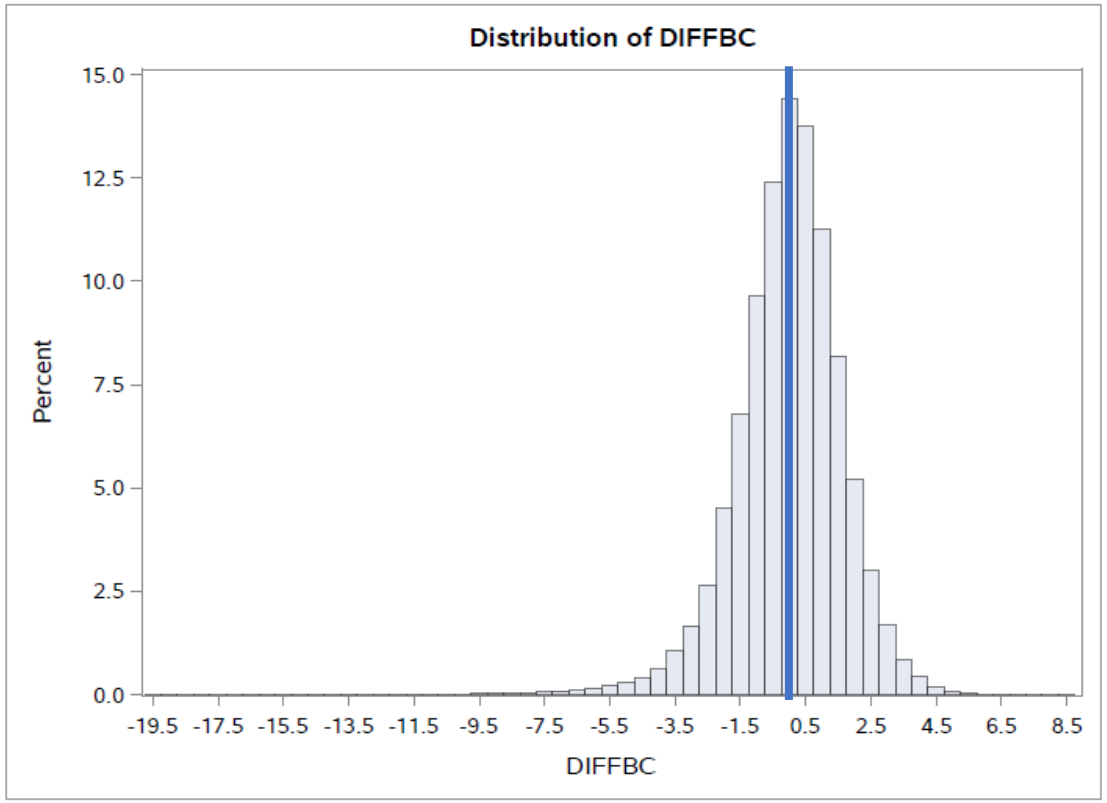
Impact of genomics

Limousin



Charolais



- 99% of LM animals move by -3.2% to 2.6% on Beef Cow calving difficulty
- 99% of CH animals move by -4.9% to 3.6% on Beef Cow calving difficulty
- Average reliability increase for LM = 34% and CH = 33%

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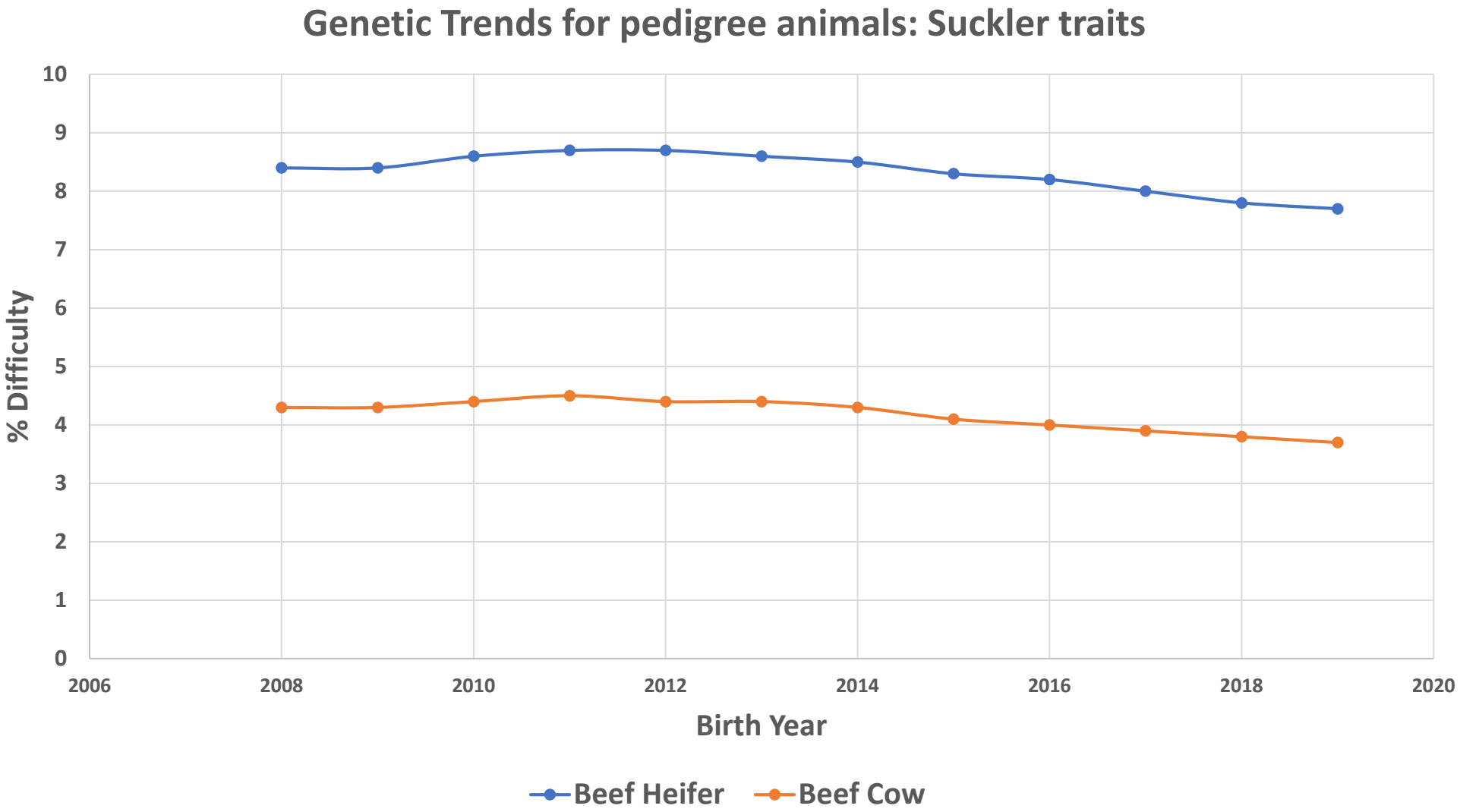
Impact of genomics



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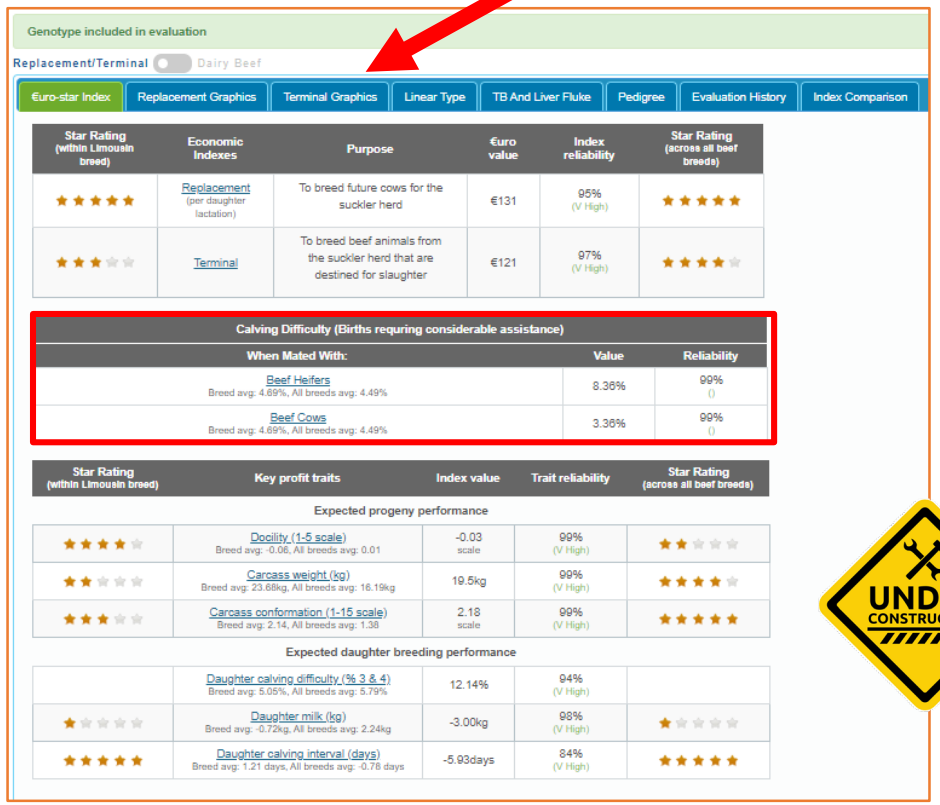
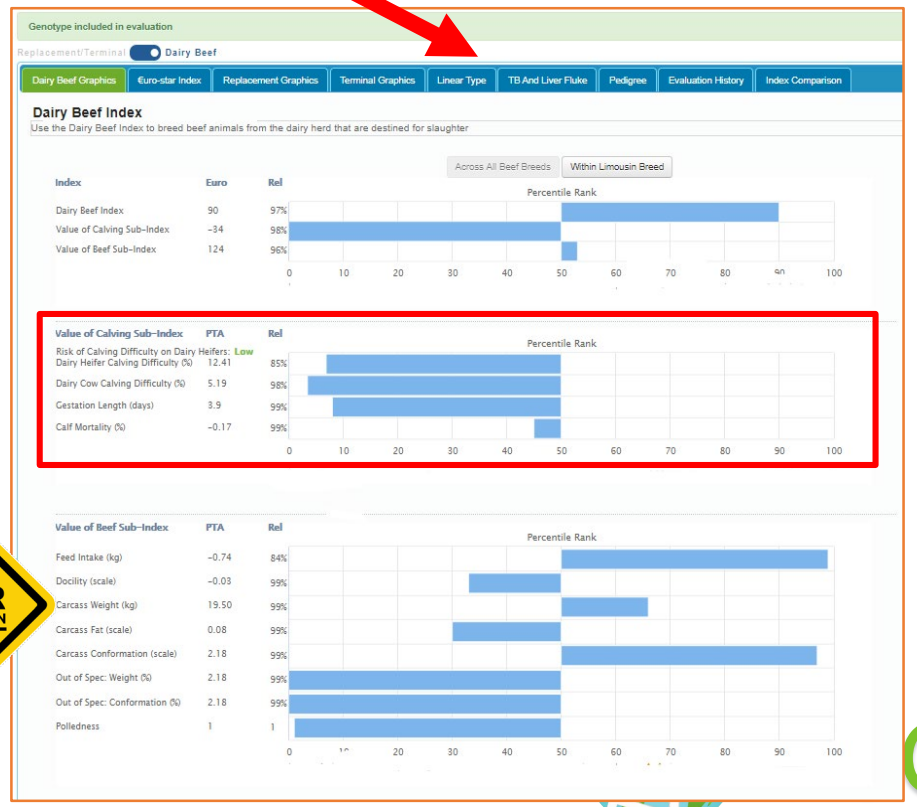
Changes to bull search

Beef Farmer

Dairy Farmer

Farmer initial preference remembered





GC20

Sales Catalogues

Modified suckler page

Lot 1 RYLE GLEN EDWARD

ID: 372224752030955 **Breed:** Hereford
Sex: Male **DOB:** 11-Nov-2017
Owner: Joe Bloggs - Timbucktwo, Co. Clare
Breeder: John Murphy - Causeway, Co. Kerry

Sire: Portanob Peter
IE281398910327
Sire Verified (SNP)

- Ardmulchan Goodman
  - Westwood Uplifter
  - Ardmulchan Clover 39th
- Portanob Julia 2
  - Ardmulchan Wanderor
  - Portanob Lady (X)

Dam: Ryle Glen Sheila V
IE331186220499
Dam Verified (SNP)

- Maclone Ger (X)
  - Maclone Bruno
  - Hazelfield Sharon (X)
- Ryle Glen Sheila 2nd (X)
  - Breaney Sam
  - Ryle Glen Sheila (X)

GENOMIC EVALUATION

Evaluation Date: Sep 2019; **Next Evaluation Date:** 21 Nov 2019

Star Rating (Within Hereford breed)	Economic Indexes	€uro value per progeny	Index Reliability	Star rating (across all beef breeds)
★	Replacement	€28	40% (Average)	★
★★★★	Terminal	€48	44% (Average)	★

Calving Difficulty (Births requiring considerable assistance)

When Mated With:	Value	Reliability
Beef cows Breed avg: 2.9%, All breeds avg: 4.0%	2.1%	70% (High)
Beef heifers Breed avg: 6.8%, All breeds avg: 8.4%	4.1%	64% (High)

Star Rating (within Hereford breed)	Key Replacement Profit Traits	Value	Reliability	Star Rating (across all beef breeds)
	Expected Progeny Performance			
★★	Docility (1-5 scale) Breed avg: 0.1,All breeds avg: 0.01	0.07 scale	38% (Low)	★★★★
★★★	Carcass weight (kg) Breed avg: 4.43kg,All breeds avg: 16.19kg	+4.7kg	46% (Average)	★
★★★★★	Carcass conformation (1-15 scale) Breed avg: 0.49,All breeds avg: 1.38	+0.77 scale	45% (Average)	★
	Expected Daughter Breeding Performance			
	Daughter calving diff (% 3 & 4) Breed avg: 5.96%,All breeds avg: 5.79%	+6.01%	39% (Low)	
★★	Daughter milk (kg) Breed avg: 3.28kg,All breeds avg: 2.24kg	+2.2 kg	37% (Low)	★★★
★	Daughter calving interval (days) Breed avg: -3.27days,All breeds avg: -0.77days	-0.76 days	37% (Low)	★★★

Additional Information:
Myostatin: F94L Non Carrier; NT821 Non Carrier

Animal not scored.

Linear composites	Value	Reliability
Muscle		
Skeletal		
Function		
Herd data quality index		
N/A		

New page not previously available

Dairy-Beef Index and Key Profit Traits

Evaluation Date: Sep 2019; **Next Evaluation Date:** 21 Nov 2019

	Dairy Beef Index	Calving Value SI	Beef Value SI	Gestation	Dairy Heifer CDiff	Dairy Cow CDiff	Carcass Weight	Carcass Conf
All Breed Average	-€5.35	-€12.13	€6.78	+1.5 days	12.0%	4.7%	4.4 kg	+0.49
HE Breed Average	-€14.52	-€74.96	€60.44	+2.7 days	12.7%	5.8%	16.2 kg	+1.38
LM Breed Average	-€14.52	-€74.96	€60.44	+2.7 days	12.7%	5.8%	16.2 kg	+1.38
SI Breed Average	-€14.52	-€74.96	€60.44	+2.7 days	12.7%	5.8%	16.2 kg	+1.38

LOT 1
RYLE GLEN EDWARD
372224752030955

Breed Hereford GENOTYPED
Birthdate 11-Nov-2017
Sire IE281398910327(Portanob Peter); Sire Verified (SNP)
Dam IE331186220499 (Ryle Glen Sheila V); Dam Verified (SNP)

Dairy Beef Index **Dairy Beef Index** €48 (Rel:40%) | **Calving Value SI** -€29 (Rel: 23%) | **Beef Value SI** €35 (Rel: 43%)

Calving Traits **Gestation** -2.4 days (Rel:38%) | **Dairy Cow CDiff** 2.5% (Rel:34%) | **Risk of Dairy Heifer CDiff** High Risk | **Dairy Heifer CDiff** 12.1% (Rel:53%)

Beef Traits **Carcass Weight** 4.7 kg (Rel:46%) | **Carcass Conformation** 0.77 (Rel:45%)

Additional Information **Myostatin:** F94L Non Carrier; NT821 Non Carrier

LOT 2
CILL CORMAIC QUARTZ
372222028060634

Breed Limousin GENOTYPED
Birthdate 27-Oct-2017
Sire GGM (Gageboro Morgan); Sire Verified (SNP)
Dam IE301326840486 (Cill Cormaic Nadine); Dam Verified (SNP)

Dairy Beef Index **Dairy Beef Index** €31 (Rel:44%) | **Calving Value SI** -€17 (Rel: 33%) | **Beef Value SI** €11 (Rel: 44%)

Calving Traits **Gestation** +0.9 days (Rel:59%) | **Dairy Cow CDiff** 3.3% (Rel:71%) | **Risk of Dairy Heifer CDiff** Medium Risk | **Dairy Heifer CDiff** 8.6% (Rel:67%)

Beef Traits **Carcass Weight** 0.8 kg (Rel:46%) | **Carcass Conformation** 0.49 (Rel:46%)

Additional Information

LOT 3
GURTERAGH DICTATOR 757 ET
372213625340757

Breed Simmental
Birthdate 21-Nov-2017
Sire IE151205870652 (Gurteragh Oakley 652)
Dam IE151205820367 (Gurteragh Fantasy)

Dairy Beef Index **Dairy Beef Index** | **Calving Value SI** | **Beef Value SI**
Dairy Beef Index not available as animal is not genotyped

Calving Traits **Gestation** +2.2 days (Rel:39%) | **Dairy Cow CDiff** 5.1% (Rel:66%) | **Risk of Dairy Heifer CDiff** High Risk | **Dairy Heifer CDiff** 11.4% (Rel:61%)

Beef Traits **Carcass Weight** 5.3 kg (Rel:46%) | **Carcass Conformation** 0.67 (Rel:45%)

Additional Information

Colour just to help user to identify Dairy-Beef page

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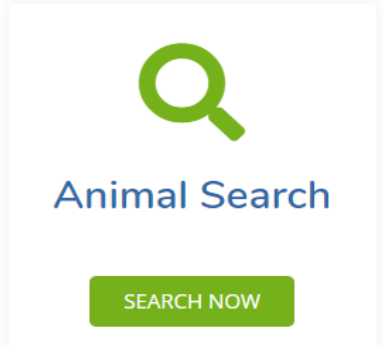
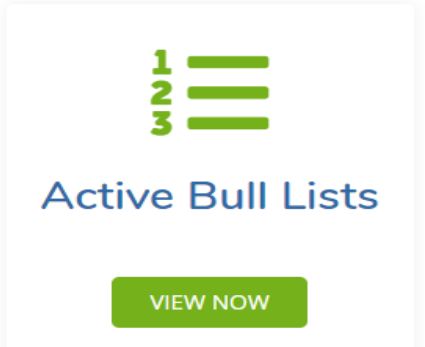
Impact on on-line services

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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Ready Reckoner

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

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Conclusions

- Evaluation of calving difficulty has changed
  - ➢ Same data….. Treated differently!

- Benefits of new system
  - ➢ Allows more targeted breeding decisions (heifers v cows)
  - ➢ Specific trait reliabilities indicate where a sire has most data

- Genetic trends are positive for Suckler Heifer and Cow traits

- New evaluations will roll-out next week with next proof run

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An Roinn Talmhaíochta, Bia agus Mara

Irish Creamery Milk Suppliers Association

IFA

Our AI & Milk Recording Organisations

DoveaGENETICS

munster cattle breeding group

Progressive Genetics

Tipperary Co-op

Our Herdbooks

Ayrshires Cattle Society of Great Britain and Ireland

The Aberdeen-Angus Cattle Society

IBBCS

EASBB

Irish Aubrac

Blonde d'Aquitaine

Irish Charolais Cattle Society

Irish Hereford

IHFA

The Irish Moiled Cattle Society

Irish Limousin Cattle Society

Parthenais

Irish Piemontese Society

Irish Shorthorn Society Ltd.

Simmental

ISP

Droimeann Cattle Society

Irish Cattle Society

Ireland's native dairy breed

Montbeliarde

MRI Cattle Society of Ireland
Meuse Rhine Issel -- Milk & Muscle!

Norwegian Red Cattle Society

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