IRISH CATTLE BREEDING FEDERATION

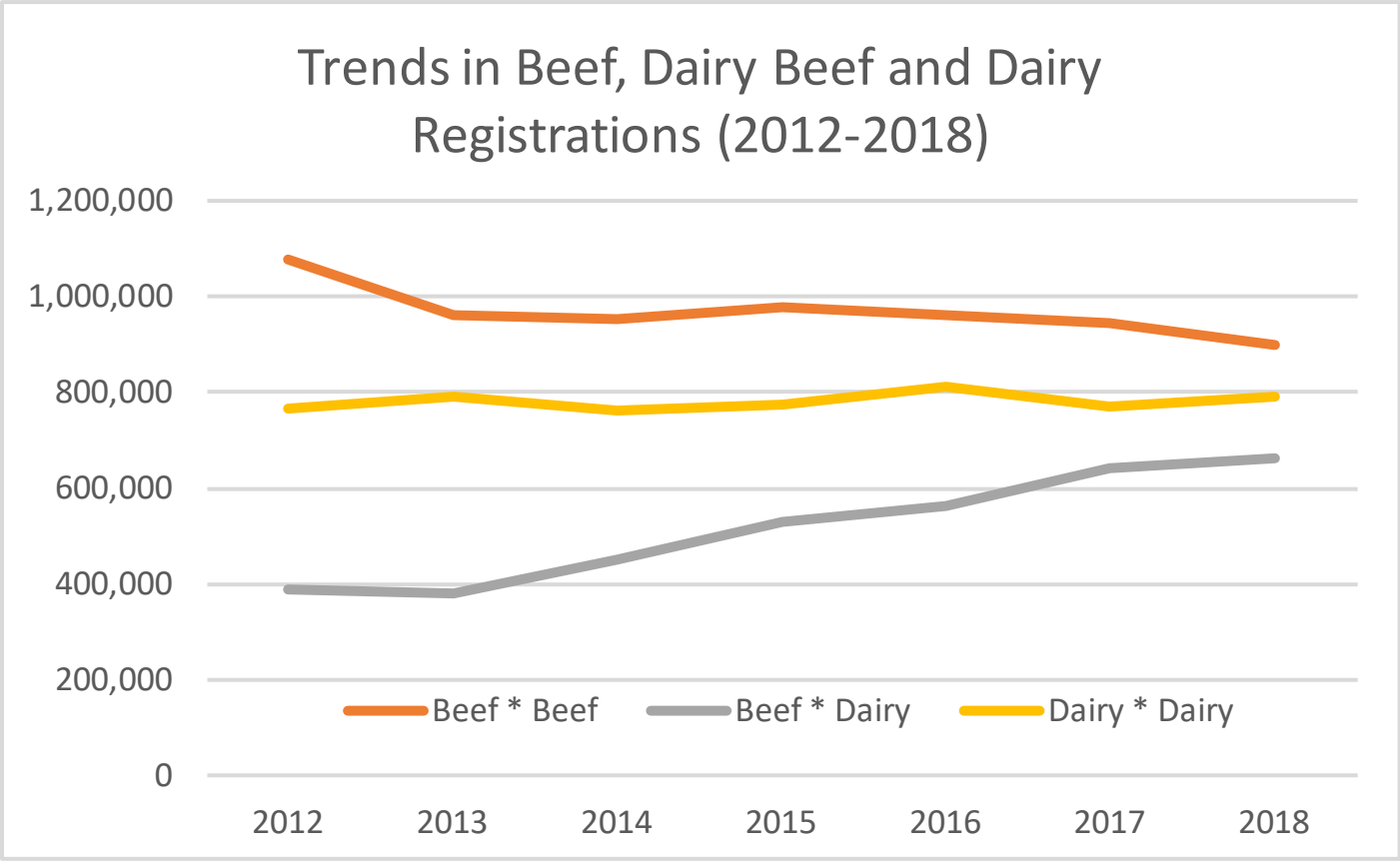
Animal Welfare – Protecting Our Social License.



Dr. Andrew Cromie, Technical Director, ICBF.

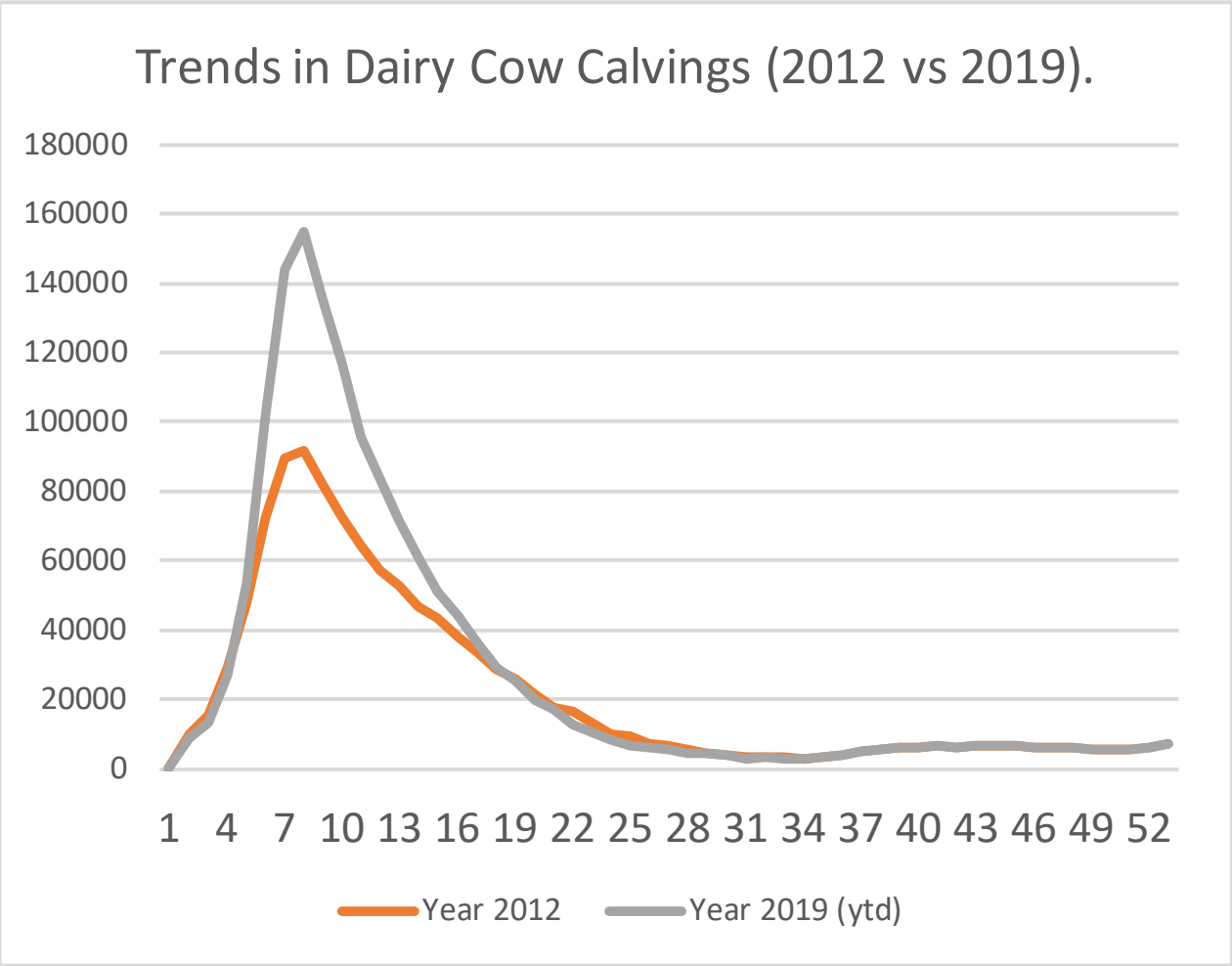
NDP
National Development Plan
Transforming Ireland

Challenge; More calves from the dairy herd.



- EU quota removal in 2015 => number of Irish dairy cows has grown from 1.1m to 1.5m in last years.
- Big increase in usage of beef bulls on dairy herd. Mainly AA & HE (+ 69%).
- Now 46% of calves from dairy cows are by beef sires. Dairy males also reared for beef.

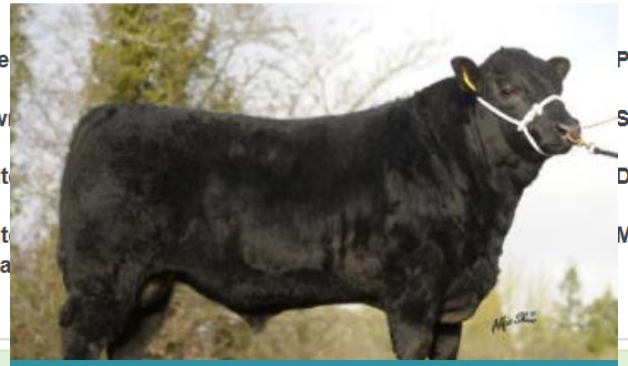
Challenge; They are coming at the same time.



- ~370k more dairy calvings in last 7 years
- All of the growth has come from births in Spring time (onset of grass growth)
  - Direct success of the EBI!
- Increasingly busy time on farms. Farmers are focused on easy calving and short gestation, especially when selecting beef bulls.

Challenge; Easy calving is all that's needed!

AI Code:	KYA	Bre	Pedigr
Animal Name:	CORNAMUCKLA LORD HARDY K222	Ow	Sire:
Sex:	MALE	Dat	Dam:
National ID:	IE121213180222	Dat Eva	MGS:
International ID:	AANIRLM121213180222		



CORNAMUCKLA LORD HARDY K222 (KYA)

Genotype included in evaluation

€uro-star Index | Replacement Graphics | Terminal Graphics | Linear Type | TB And Liver Fluke | Pedigree | Evaluation Histo

Star Rating (within Angus breed)	Economic Indexes	€uro value	Index reliability	Star Rating (across all beef breeds)
★★★★★	Replacement (per daughter lactation)	€138	97% (V High)	★★★★★
★★★☆☆	Terminal	€67	95% (V High)	★★☆☆☆
★★★★★	Dairy Beef	€85	97% (V High)	★★★★★

Star Rating (within Angus breed)	Key profit traits	Index value	Trait reliability	Star Rating (across all beef breeds)
	Expected progeny performance			
	Calving difficulty (% 3 & 4) Breed ave: 2.08%, All breeds ave: 4.49%	0.80%	99% (V High)	
★★☆☆☆	Docility (1-5 scale) Breed ave: 0.00, All breeds ave: 0.01	-0.03 scale	99% (V High)	★★☆☆☆
★☆☆☆☆	Carcass weight (kg) Breed ave: 5.78kg, All breeds ave: 16.19kg	-1.7kg	99% (V High)	★☆☆☆☆

- KYA – Dairy farmers dream. Not so much if you are a beef farmer buying the calf!
  - Exceptional easy calving, but poor for carcass weight/conformation.
- If/when we find an outlier, how do we then get farmers (& AI companies) to move to a new and better bull the following year?

Challenge; A downward trends in beef traits.

T1. Trends in beef performance traits for dairy beef steers.

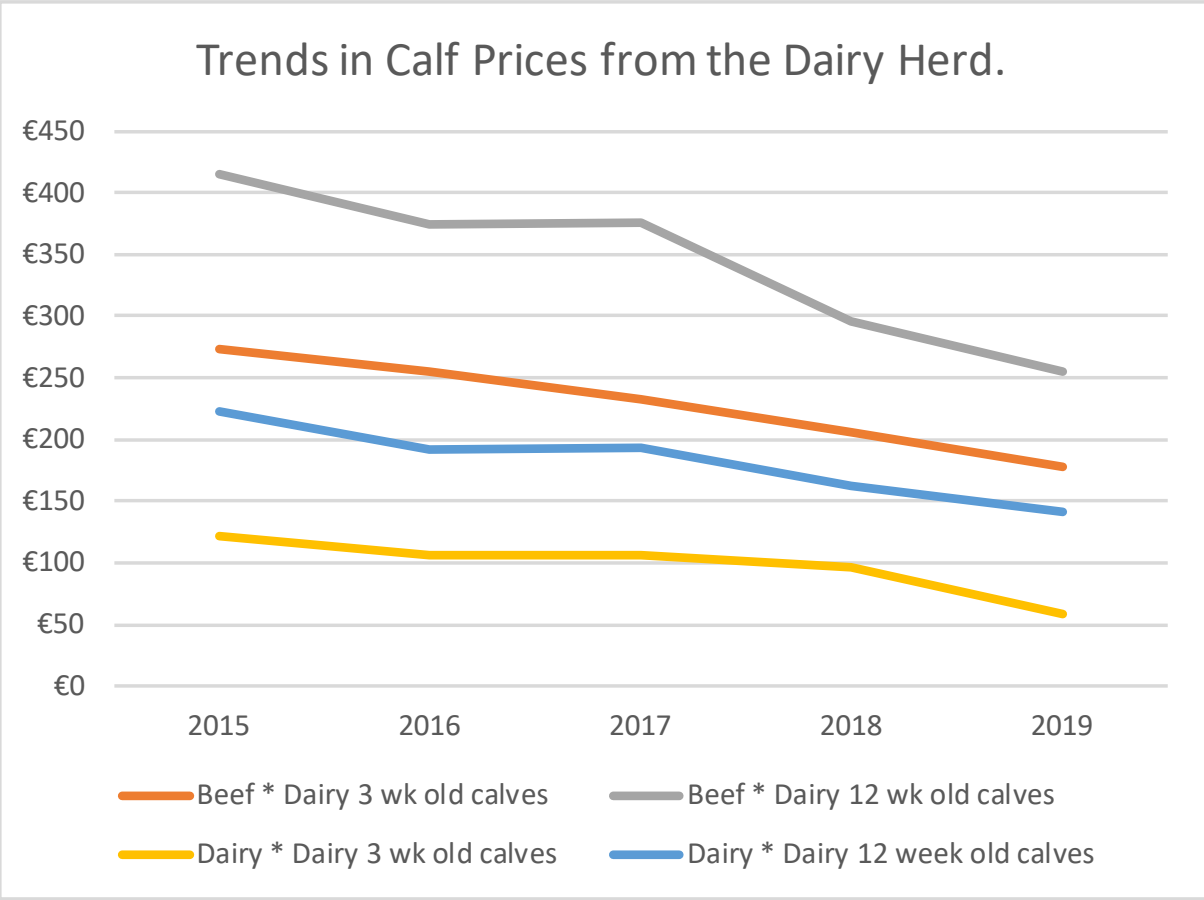
Year	Count	Carc Wt kg	Carc Conf	Carc Fat
2015	142,810	342.9	5.9	8.9
2016	167,147	340.9	5.8	8.7
2017	197,200	339.1	5.6	8.7
2018	200,453	333.6	5.5	8.5
% Change	40.4%	-2.7%	-7.6%	-4.7%

T2. Trends in beef performance traits for dairy steers.

Year	Count	Carc Wt kg	Carc Conf	Carc Fat
2015	180,297	325.9	4.1	7.9
2016	164,780	326.1	4.0	7.7
2017	184,912	319.6	3.8	7.7
2018	183,057	316.2	3.7	7.5
% Change	1.5%	-3.0%	-9.7%	-5.0%

- Breeding for easy calving and short gestation traits => negative genetic correlation & steady downward trends in beef performance traits.
- Trends are also evident in dairy bred animals => farmers are focused on smaller more efficient & profitable cows => the EBI.

Challenge; More calves + declining beef traits => downward trends in calf prices.



- Beef bred calves = +€150.
- But; In line with growth in numbers, consistent decline in price of all calves => Down 40% in 5 years
- Cost of rearing a calf from 3-12 weeks = €123 (Teagasc, 2019)
- Market is returning a difference of €80 => a loss of €43/calf.
- Value of 3 week calf is declining. Good for the calf rearer? What about the health & welfare of the calf?

IRISH FARMERS JOURNAL
BEEF DAIRY SHEEP AGRIBUSINESS MACHIN

Genetics key for Thrive dairy calf to beef project

The new programme will see bulls used that have easy-calving characteristics coupled with short gestation along with good carcase weight and conformation traits.

5 factors contributing to profitable dairy-beef production

5) Dairy Beef Index

Going forward, the new Dairy Beef Index (DBI) will be a useful tool in identifying easy calving, short gestation and low-mortality beef bulls that have minimal consequences on dairy cow performance, milk production or health.

Sire breed	No. of sires	No. of progeny	Progeny not hitting 280kg	Progeny not hitting O=
Aberdeen Angus	35	2,309	32%	12%
Belgian Blue	29	2,405	8%	2%
Hereford	31	1,251	27%	17%
Limousin	25	4,834	10%	1%
Friesian	117	2,066	26%	51%
Holstein	509	957	31%	74%
Jersey	50	244	66%	84%
Norwegian Red	10	168	29%	62%

The Opportunity; Genetic Differences.

SIRE	Carcass Weight (kg)	CONF (1 - 15)	FAT (1 - 15)	VALUE (€)	AGE (Days)
ZLT	279	7.18 (R-)	7.58 (3+)	1090	647
ZTP	281	5.74 (O+)	8.12 (4-)	1074	644
AA2025	283	5.99 (O+)	8.00 (4-)	1089	638
KYA	294	5.64 (O+)	7.56 (3+)	1133	639
AA2387	298	5.70 (O+)	6.97 (3+)	1134	625
AA2123	300	4.94 (O=)	7.12 (3+)	1124	641
AA2192	303	5.25 (O=)	8.43 (4-)	1120	633
GZJ	303	7.02 (R-)	8.33 (4-)	1120	629
RGZ	303	6.00 (O+)	7.52 (3+)	1136	636
AA4057	304	5.94 (O+)	7.44 (3+)	1167	628
TKR	304	6.28 (O+)	7.74 (4-)	1188	634
AA2203	311	5.87 (O+)	7.58 (3+)	1196	636
AA2309	317	6.37 (O+)	8.42 (4-)	1202	625
FPI	323	5.70 (O+)	7.33 (3+)	1247	651

€173 difference in carcass value

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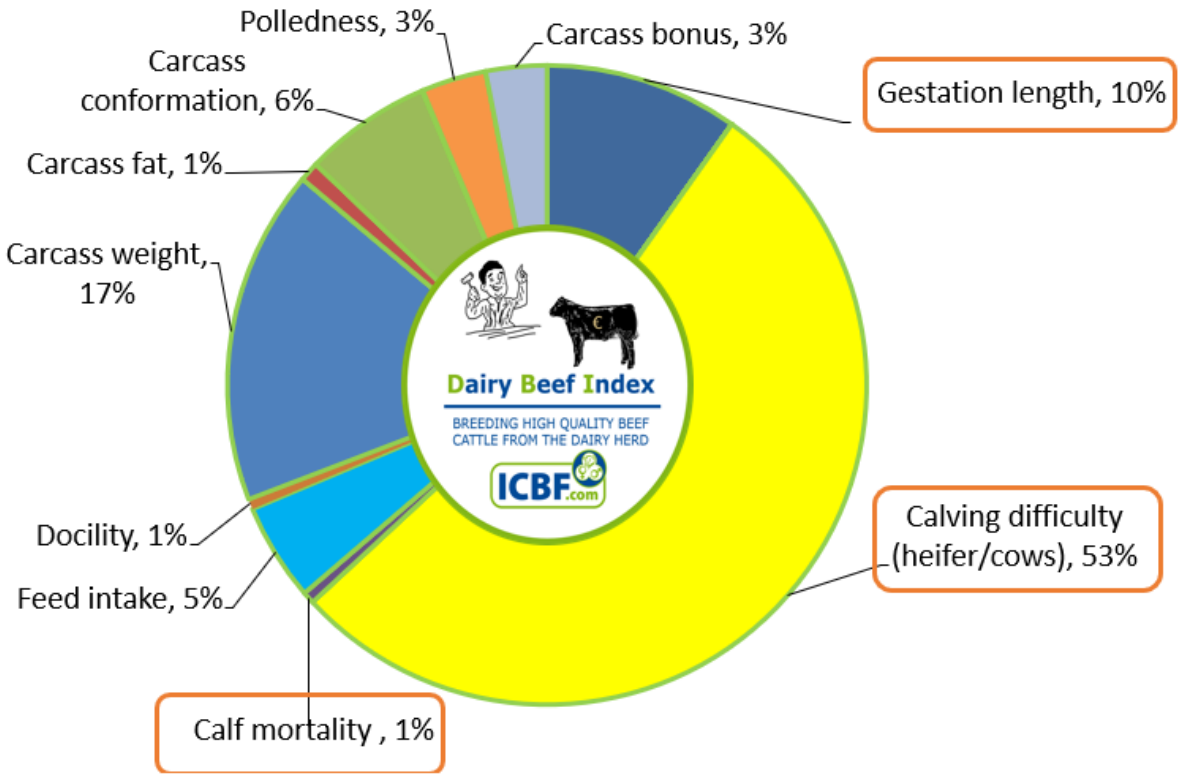
- G€N€ IR€LAND dairy beef program established by ICBF, Teagasc, ABP (an Irish meat processor) & partner AI companies in 2015.
- Includes existing reference and new progeny test bulls; AI companies own the bulls, ICBF collect data + undertake evaluations etc.
- Large genetic differences established between sires for key beef performance traits => €173 difference in carcass value.

Some high level calf numbers.

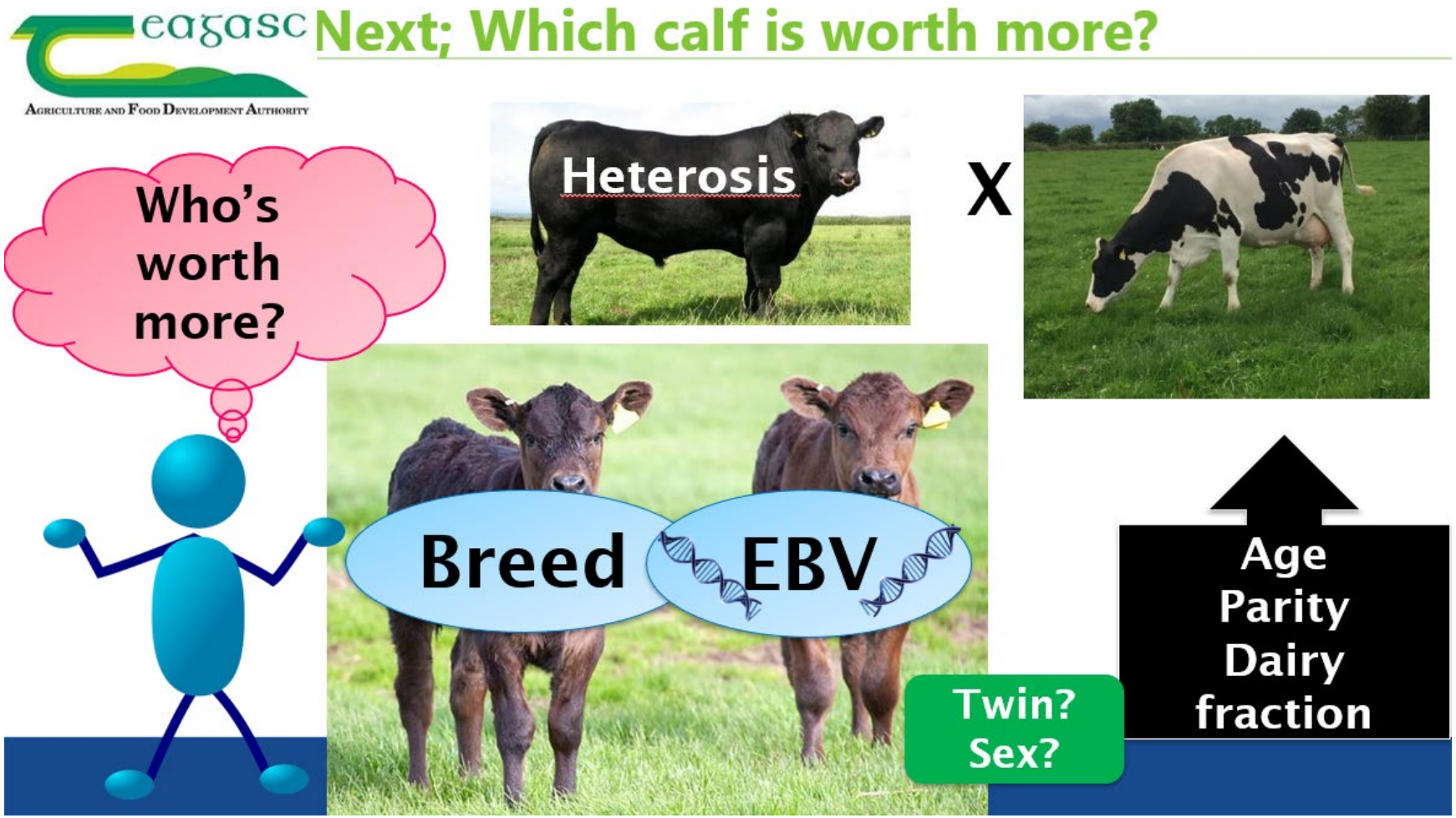
- 1.5m dairy cows => 1.4m calves.
  - 400k dairy females.
  - 400k dairy males.
  - 600 beef sired calves.
- 1.0m “non-core”dairy bred calves.
  - **200k exported.**
  - **350k moved to rearers => 10k rearers.**
  - 350k still on farm.
  - 100k dead/disposed (50k dead birth, 20k dead subsequently & 30k slaughtered).

Dairy Beef – Key focus areas for ICBF.



- New dairy beef index.
- Updating beef sub-index of EBI.
- **New "calf value" based on beef.**
- **DNA calf registration.**
- **Expanded pilot project with ICOS marts.**
- Sexed semen.
- Providing national benchmark data for farmers & co-ops.

Beef value on all calves at birth.



- Once a calf is born => generate a "beef value".
- Calculated as (Dairy Beef index – cost of calving) + some non-genetic effects (e.g., age, parity, breed).
- Need for DNA verification (~15% sire errors).
- Means of trading dairy beef calves with confidence.

DNA-based calf registration.

Database predicts
Sire
Dam
Sex
Breed

Output (by day 14)
EU Registration
Parentage
Genomic Evaluation
Major Genes
Herdbook (optional).
Quality Assurance.

- Very successful pilot project undertaken in Spring 2019.
- Further pilot planned for Spring 2020 => 250 herds & 40k cows & calves.

- Two key objectives;
  - Surety for calf buyers.
  - "Outliers" for the breeding program => genetic gain.
- What is the value proposition for DAFM & industry?
  - Initial indications are ~3:1 RoI, based on; (i) increased genetic gain, (ii) removing stock bulls, (iii) provenance/branding and (iv) climate improvements.
  - Labour-saving/hassle!

DAFM Integrated Dairy Beef (with ICOS marts).

T.2 Summary of calves weighed by breed of sire

Category	Count	Age @ weighing (Spring)	Weight Kg (Spring)	Age @ weighing (summer)	Weight Kg (summer)	A.D.G Spring - Summer weighing
AA	**97**	**21**	**51**	**187**	**152**	**0.60**
F	66	21	49	184	138	0.53
M	31	20	56	191	182	0.74
BB	**2**	**17**	**50**	**212**	**210**	**0.82**
F	2	17	50	212	210	0.82
FR	**106**	**21**	**55**	**194**	**174**	**0.69**
M	106	21	55	194	174	0.69
HE	**110**	**17**	**56**	**202**	**186**	**0.69**
F	47	18	53	194	156	0.58
M	63	17	58	209	208	0.78
JE	**21**	**23**	**41**	**201**	**126**	**0.48**
M	21	23	41	201	126	0.48
LM	**4**	**19**	**53**	**197**	**156**	**0.55**
F	2	20	54	174	104	0.32
M	2	19	51	221	209	0.78

- Pilot project in Spring 2019 with Cork Marts.
  - 10 birth & 10 rearing herds (~400 calves). Range of breeds & calves.
  - Calves genotyped, well reared, low genetic merit calves excluded, independent pricing model, transported in/out, administration & security of payment.
- Planning to expand to 100 birth & 300 rearing herds in 2020 (~7-8k calves).

- Leveraging DAFM, ICOS and ICBF brands to address a major issue for our industry and bring forward a new approach to moving calves => **new & more calf rearers.**