



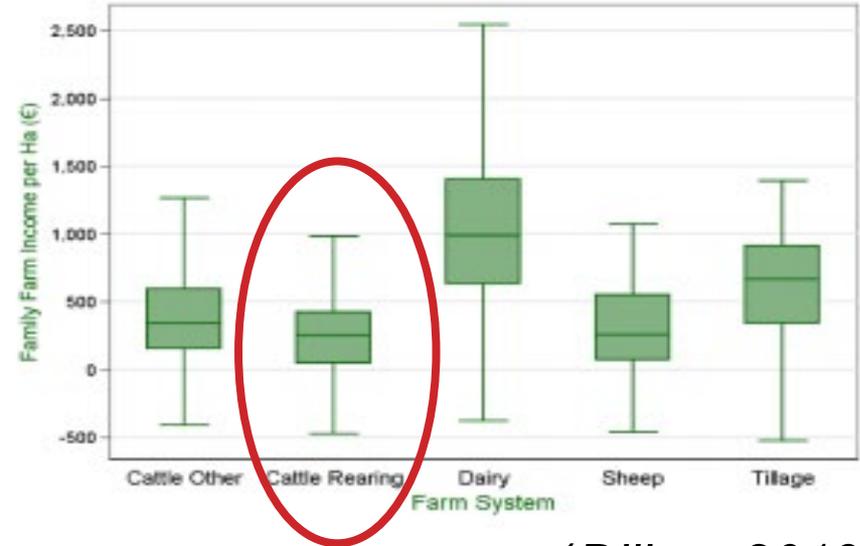
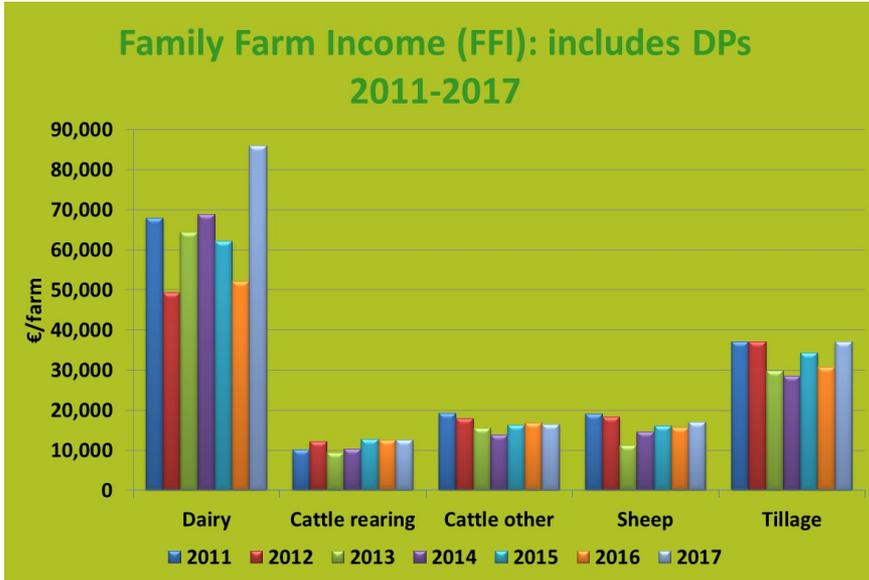
BDGP & BEEP

Breeding for a sustainable suckler cow

Alan Twomey

16/01/20

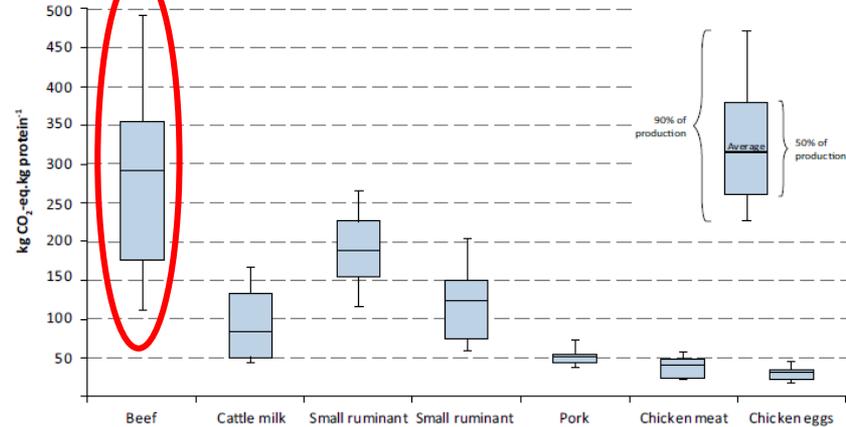
The profitability challenge.



(Dillon, 2019)

The environmental challenge.

FIGURE 3. Global emission intensities by commodity



Source: GLEAM.



HANKAH GUINN-MULLIGAN
 With climate change
 becoming a reality, the
 Government's
 Climate Change
 Advisory Council
 has issued three copies of
 cutting the suckler herd by 25% and
 50% to reduce overall agricultural
 emissions.
 Suckler cow reductions of between
 204,000 and 376,000 are forecast
 by the chair of the council, Pádraig
 Fitzgerald. This would mean a 20% or
 25% cut in the current suckler herd.
 Agriculture accounts for 31.6% of
 Ireland's greenhouse gas emissions,
 the highest of any sector.
 The country will miss its 2020 tar-
 get unless agriculture emissions are
 reduced.
 Increasing forestry and adopting
 low-emission dairy spreading would
 not be enough to meet 2020 targets
 without reducing cattle numbers,
 Fitzgerald said.
 The report recommends an "ex-
 tensive" process be included
 in the next CAP.
 Farmers would be guaranteed their
 full direct payment from CAP for re-
 ducing numbers, the report says.
 It also suggests cutting the pay-
 ment of farmers who increase the num-
 ber of suckler cows who opt to re-
 duce numbers.
 "We're not trying to wipe out a sec-
 tor," Fitzgerald told the Irish Farmers
 Journal. "What we're suggesting is a
 steady [dairy] production over the next
 10 years."
 He also questioned future expand-
 ing for the dairy herd.
 "We really need to stop expand-
 ing the dairy herd," Fitzgerald said.
 "If there is any increase in the dairy
 herd then we need a bigger reduc-
 tion in the suckler herd."

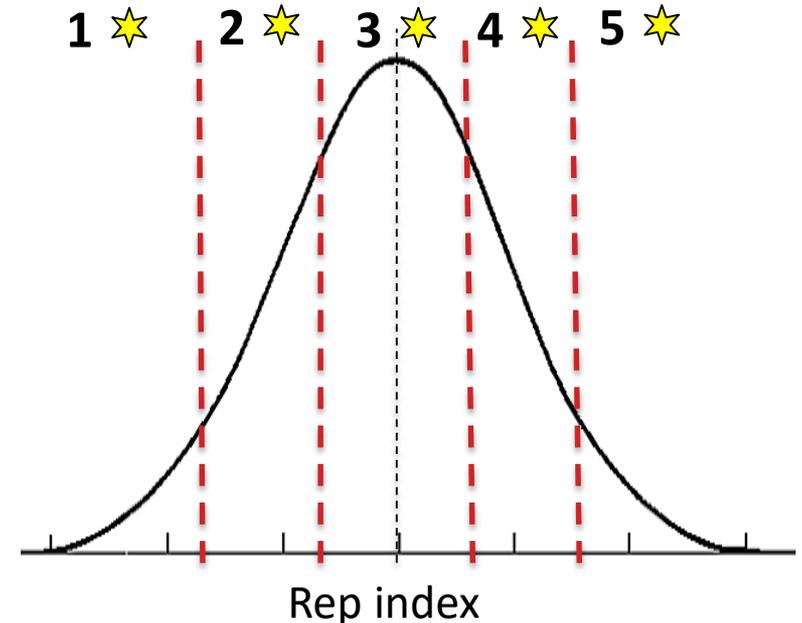


What is the Replacement index?

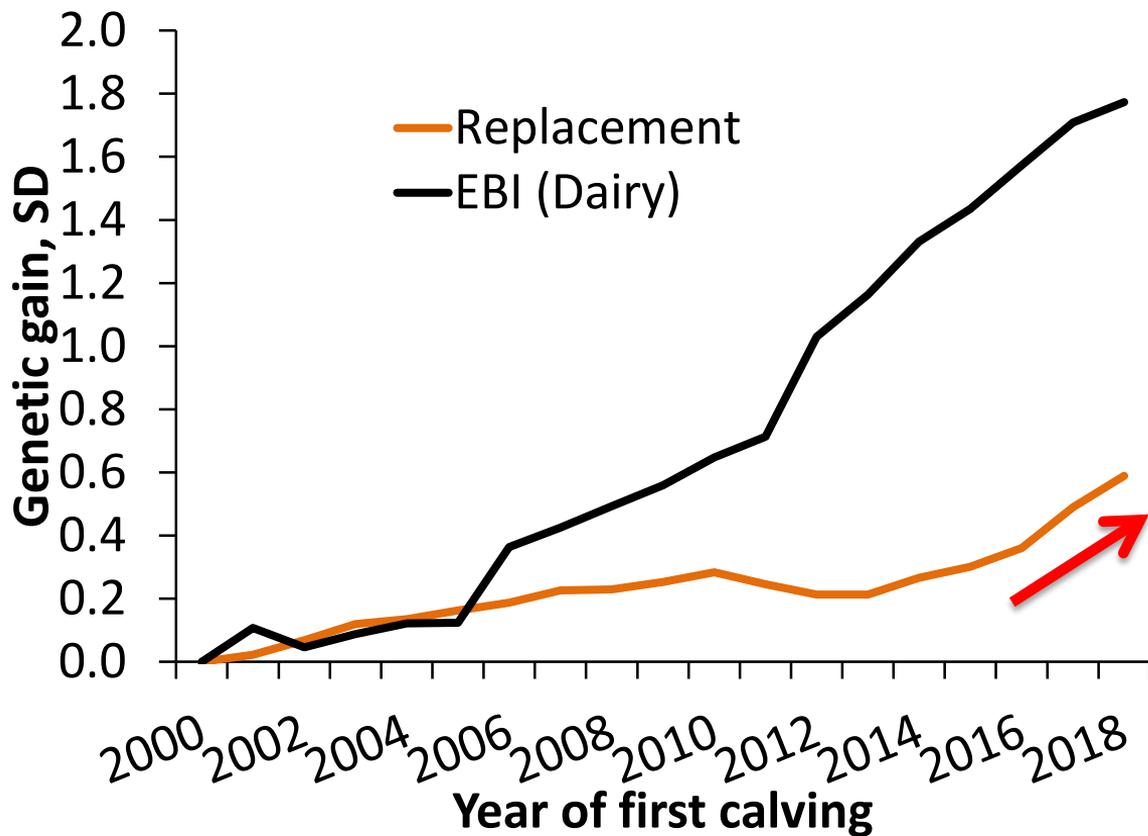
- Aid beef farmers in the selection of more profitable breeding animals

Euro-Star Replacement Index			
Trait	Economic Weight (€ Unit)	Trait Emphasis	Trait Type
Maternal Calving Difficulty	-4.98	6%	Cow Traits 71%
Age 1st Calving	-0.99	6%	
Calving Interval	-5.07	9%	
Survival	8.86	8%	
Milk	5.58	18%	
Heifer Intake	-0.76	8%	
Cow Intake	-0.55	6%	
Cow Docility	77.27	4%	
Cull Cow Weight	0.91	7%	
Calving Difficulty	-5.12	7%	Calf Traits 29%
Gestation	-2.48	2%	
Mortality	-5.87	1%	
Docility	14.72	1%	
Feed Intake	-0.07	4%	
Carcass Weight	2.1	10%	
Carcass Conformation	10.22	3%	
Carcass Fat	-5.44	1%	

- What do the star ratings mean?



Genetic trends

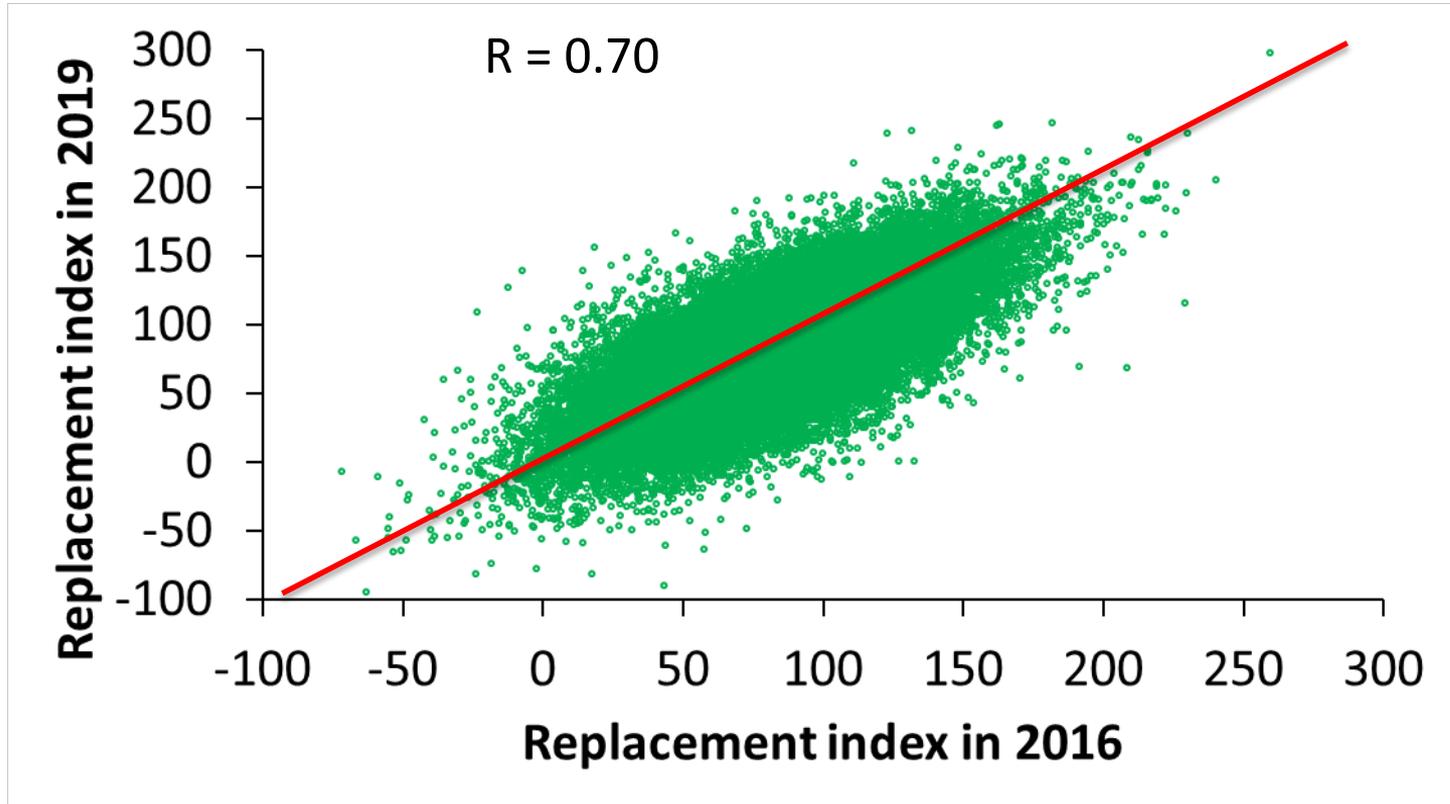


- Since 2000, large genetic gain in dairy
 - 0.1 GSD/year
- Prior to BDGP, little gain in Rep index
 - 0.01 GSD/year
- Since BDGP, Rep index and EBI equal genetic gain
 - 15 year lag

BDGP heifers calved in 2017

		Percentage in star rating in today's evaluation				
First genomic evaluation 2016	Number	5 ★	4 ★	3 ★	2 ★	1 ★
5 ★	20,931	52	24	14	7	3

Prediction of today's evaluation



But does it work?

- Validation dataset
 - All cows born in 2012 and 2013 were retained
 - National evaluation from 2013 was used to predict their performance
 - » No cow had a calving event prior to the 2013 evaluation
 - » Estimated using ancestry
- Estimate the performance of animals within each star rating



Analysis

- All animals were corrected to a common animal relative to the trait analysed

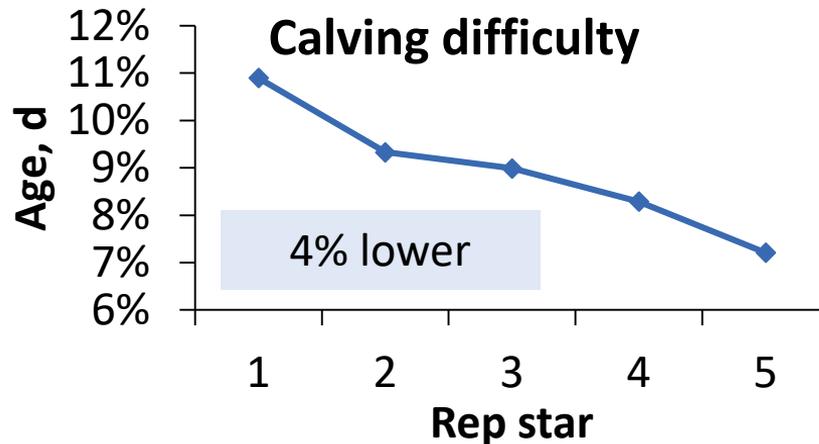
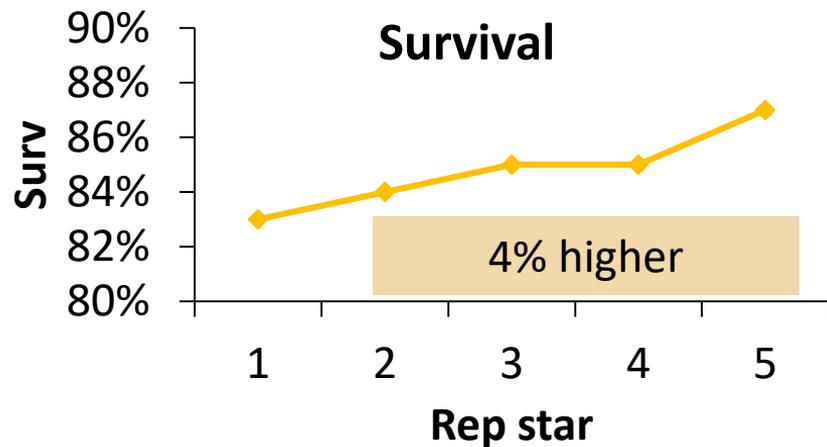
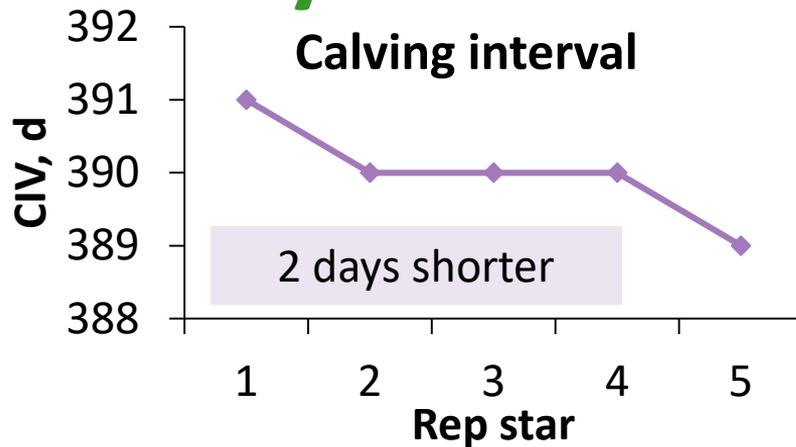
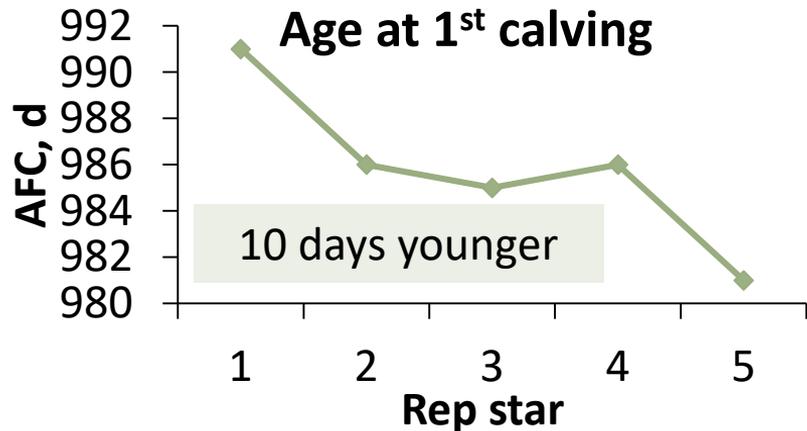
Cow traits

- Purebred cow (no hybrid vigour)
- Parity 3 cow (except AFC)
- 12 months since DSC (only carcass traits)
- Common contemporary group

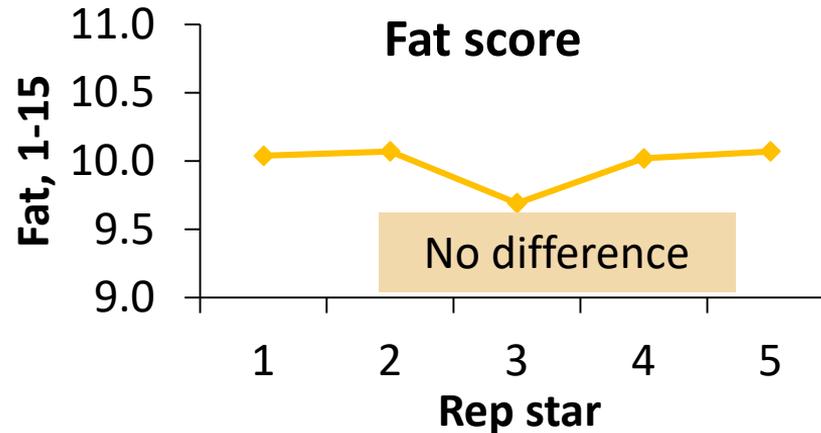
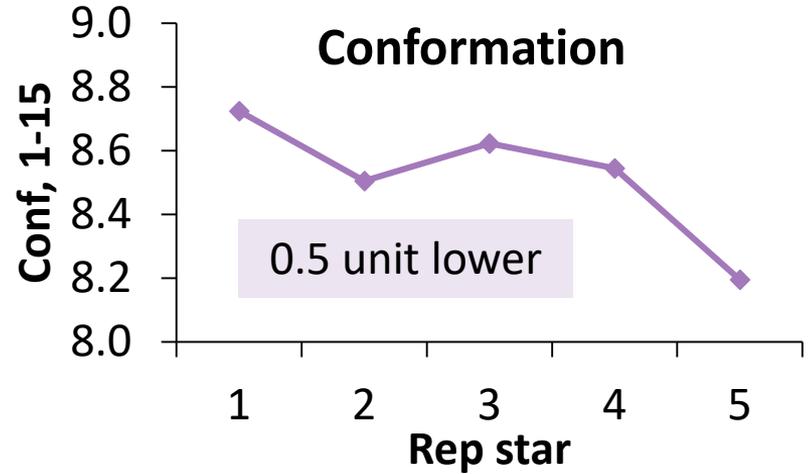
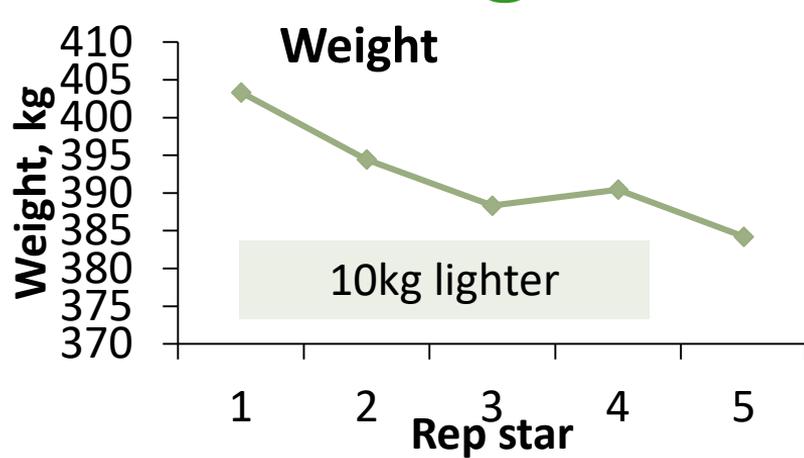
Progeny traits

- Purebred cow and animal
- Parity 3 cow
- 24 month steer (For age of slaughter 360Kg 3= steer)
- Common sire
- Common contemporary group

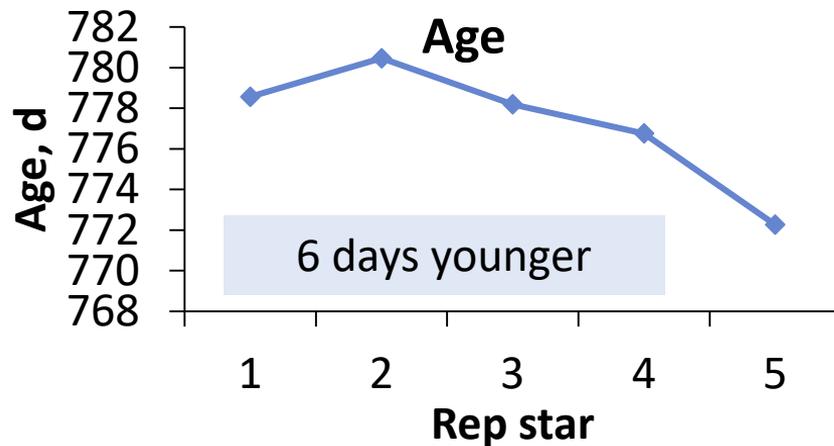
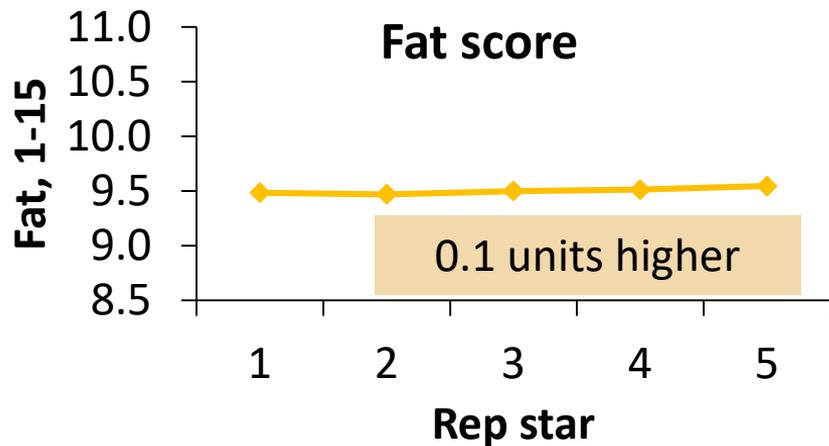
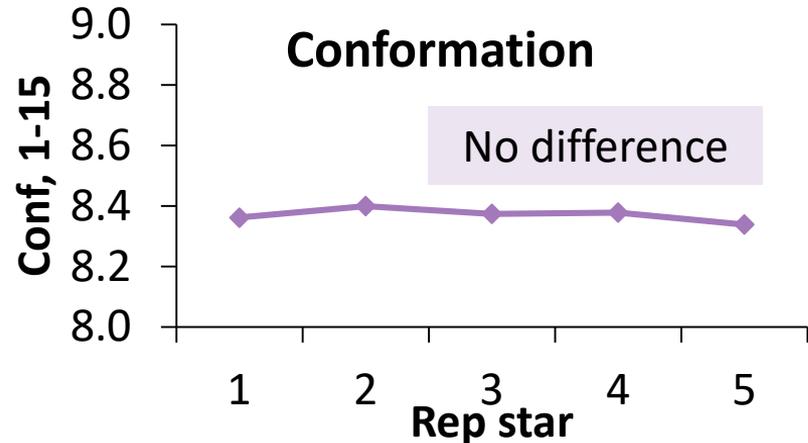
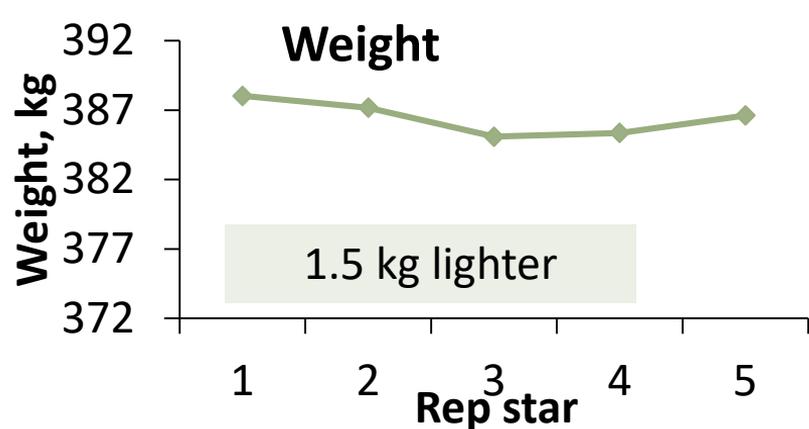
Fertility and calving difficulty



Carcass weight of cows



Carcass weight of progeny



Beef Environmental Efficiency Program

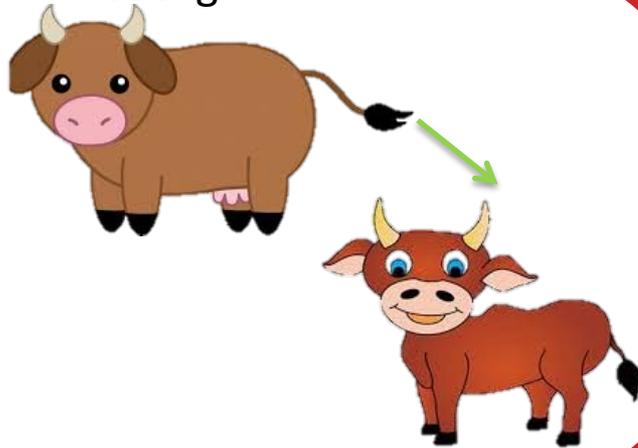
- Launched in January 2019
- Benefits
 - Measure milk ability of cows (measured by weaning weights) and cow live-weights
 - Improves reliability of breeding values
 - Identify the most efficient cows

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What is an efficient cow?

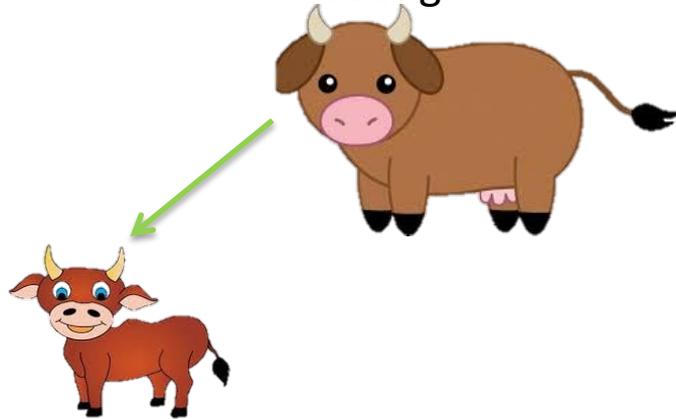
- A cow with a low economic and environmental cost but produces a high value calf
 - ↓ cow weight = ↓ intake = ↓ methane emissions

Cow A
650kg



300kg

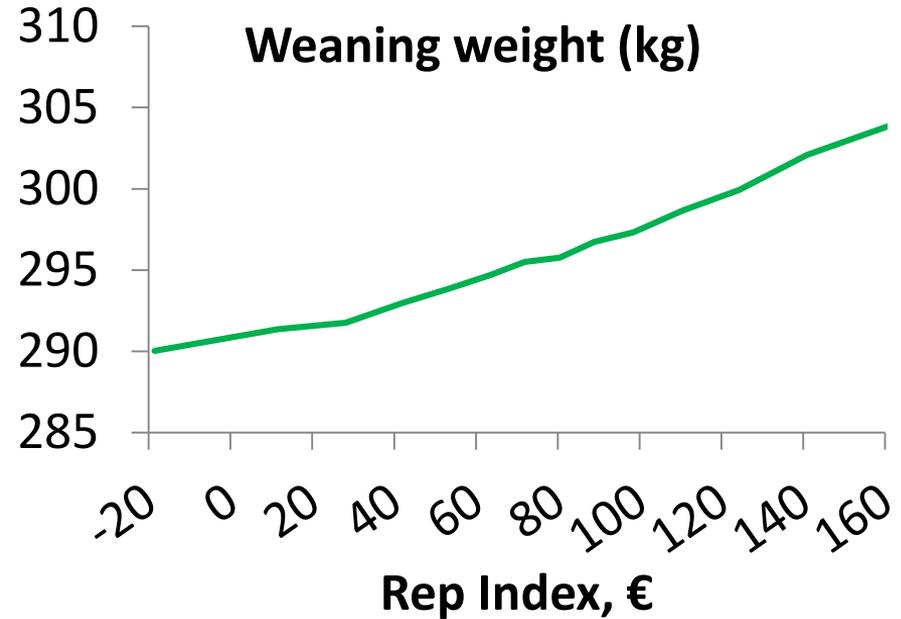
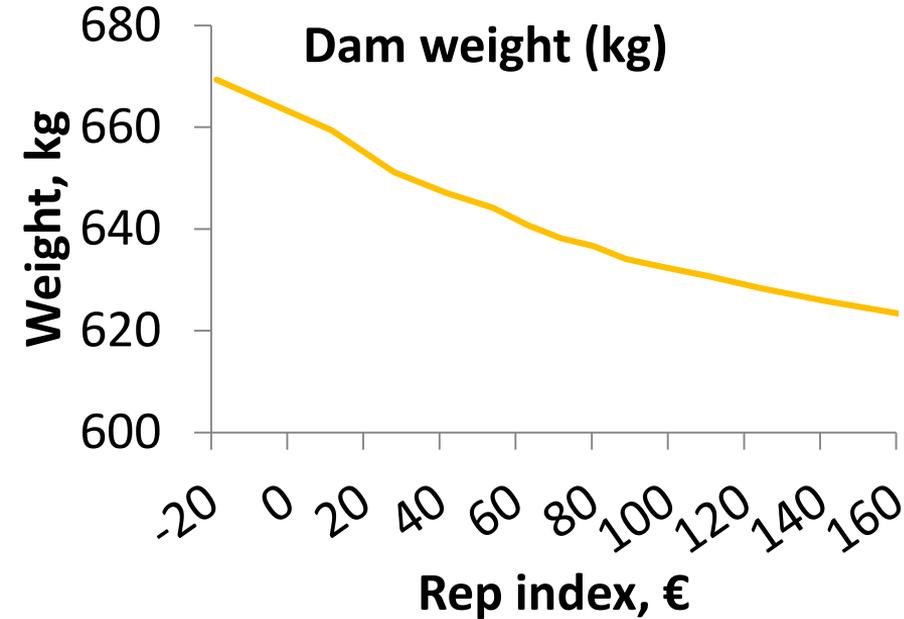
Cow B
650kg



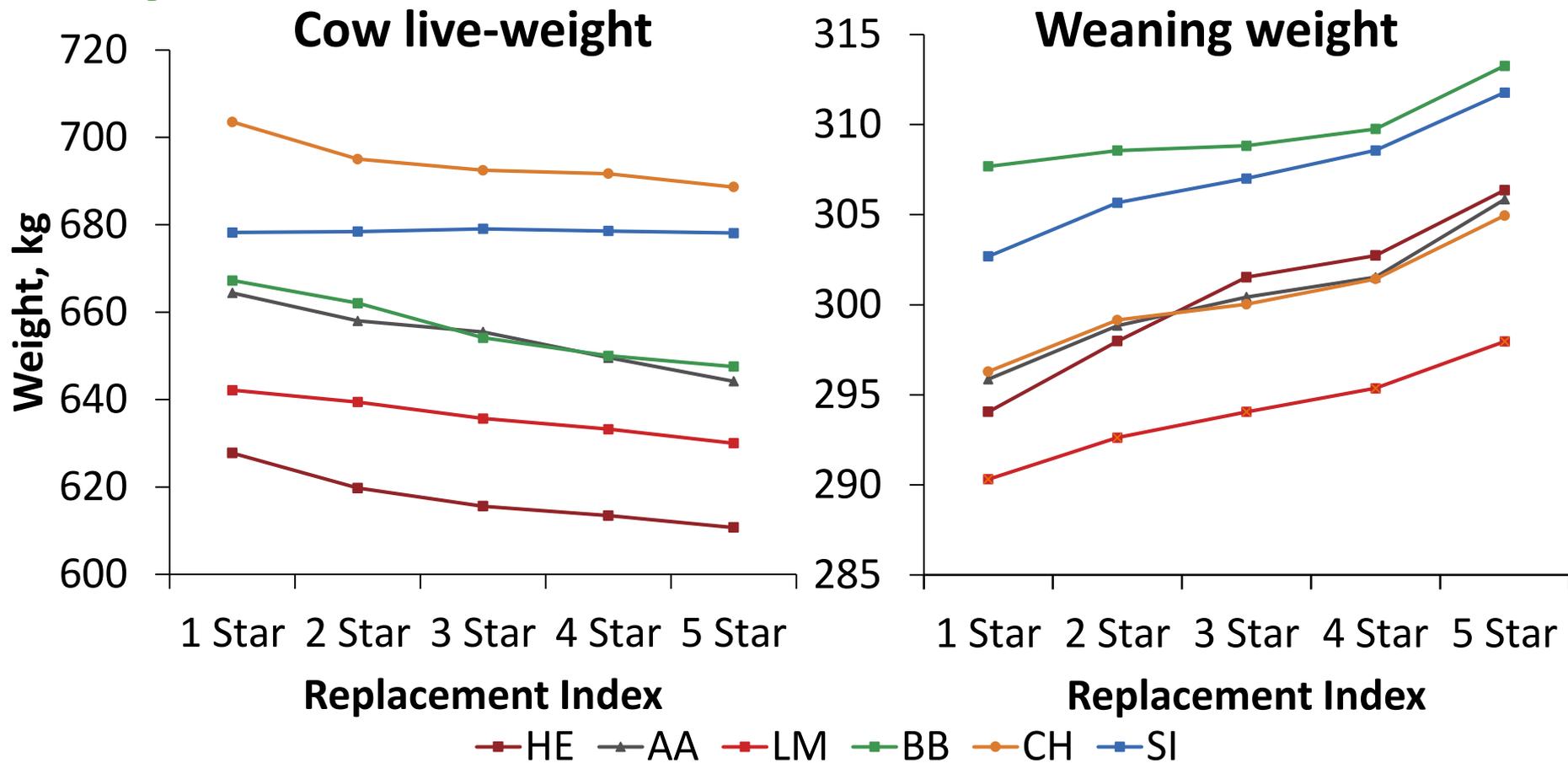
280kg

Do small cows produce small calves?

- 10 kg ↓ in cow live-weight = 1kg ↓ in weaning weight
- Replacement index identifies the efficient cows (outliers)



Improvement observed in all breeds



Conclusion

- Large genetic progress being achieved since BDGP
- Replacement index is improving maternal traits
 - Little or no impact on carcass performance
- Replacement index identifies cows more environmentally friendly

