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ABACUSBIO LIMITED

Make a difference to food production internationally using science & technology

THEN & NOW
10 YEARS OF SHEEP IRELAND

ICBF and Sheep Ireland genetics conference: 'Sustainable Farming – Progress through Genetics'

5th of December 2018

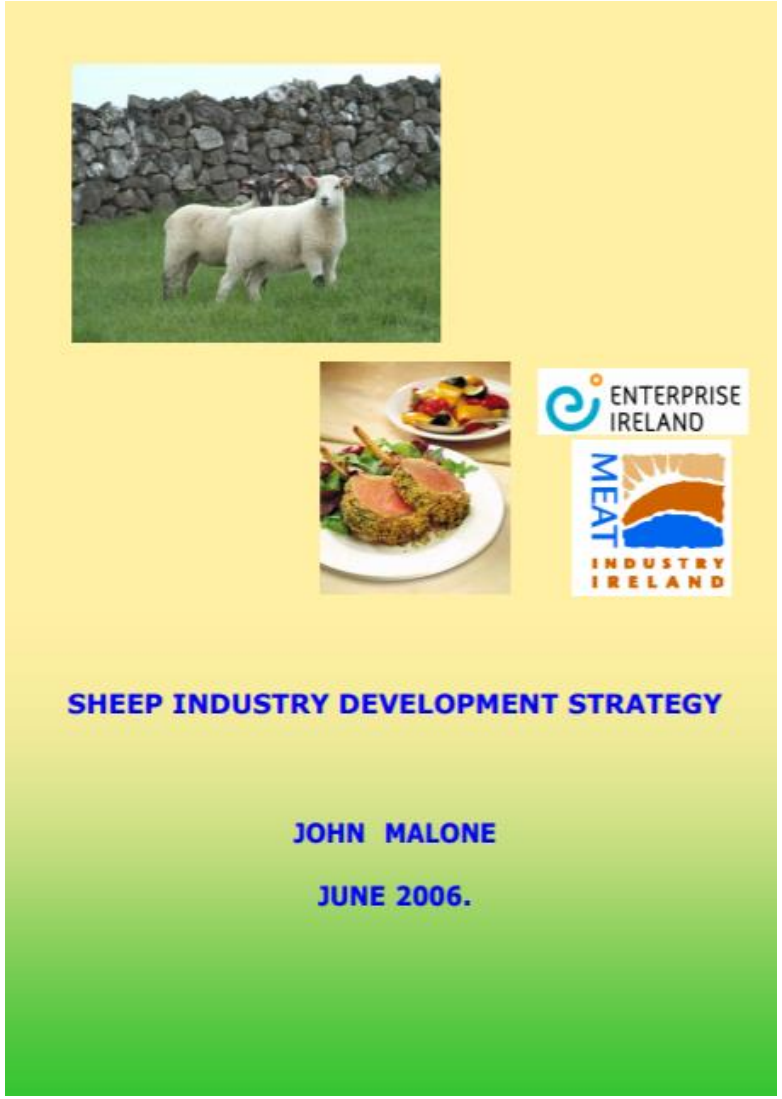
Tim Byrne

AbacusBio International Limited

Edinburgh

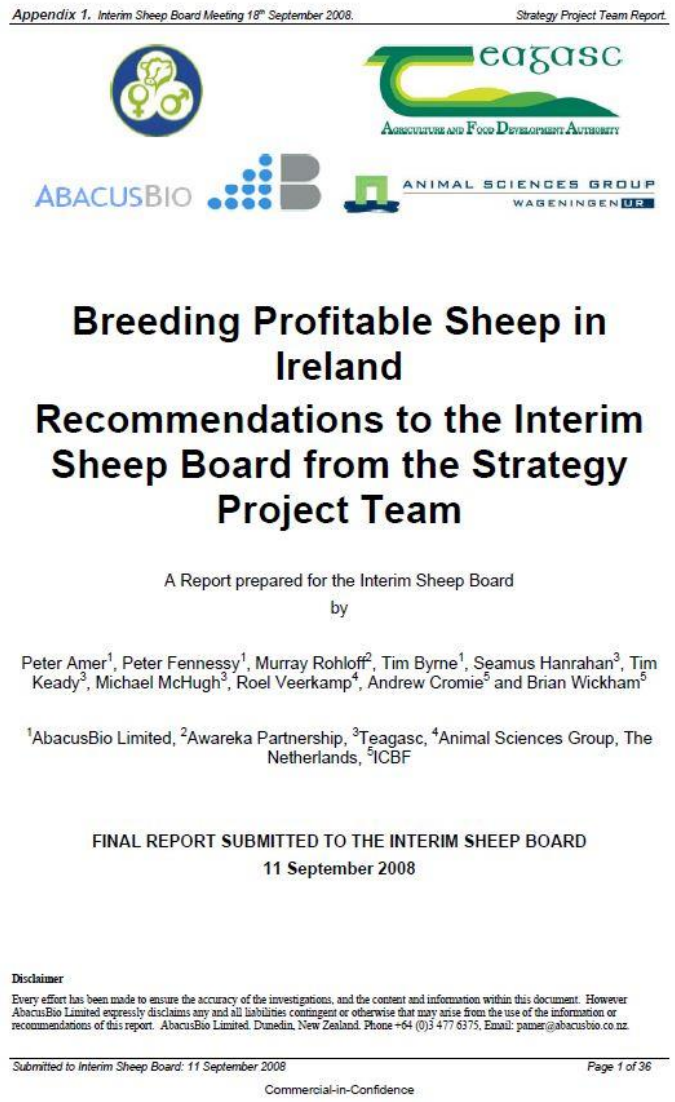
Back then

- Malone 2006
- **BALANCED** breeding goal
- **SUSTAINABLE** genetic gain



Back then

- Development strategy put together
- 20 recommendations covering all aspects
- Start point of Sheep Ireland



Breeding Profitable Sheep in Ireland

Recommendations to the Interim Sheep Board from the Strategy Project Team

A Report prepared for the Interim Sheep Board
by

Peter Amer[1], Peter Fennessy[1], Murray Rohloff[2], Tim Byrne[1], Seamus Hanrahan[3], Tim Keady[3], Michael McHugh[3], Roel Veerkamp[4], Andrew Cromie[5] and Brian Wickham[5]

[1]AbacusBio Limited, [2]Awareka Partnership, [3]Teagasc, [4]Animal Sciences Group, The Netherlands, [5]ICBF

FINAL REPORT SUBMITTED TO THE INTERIM SHEEP BOARD
11 September 2008

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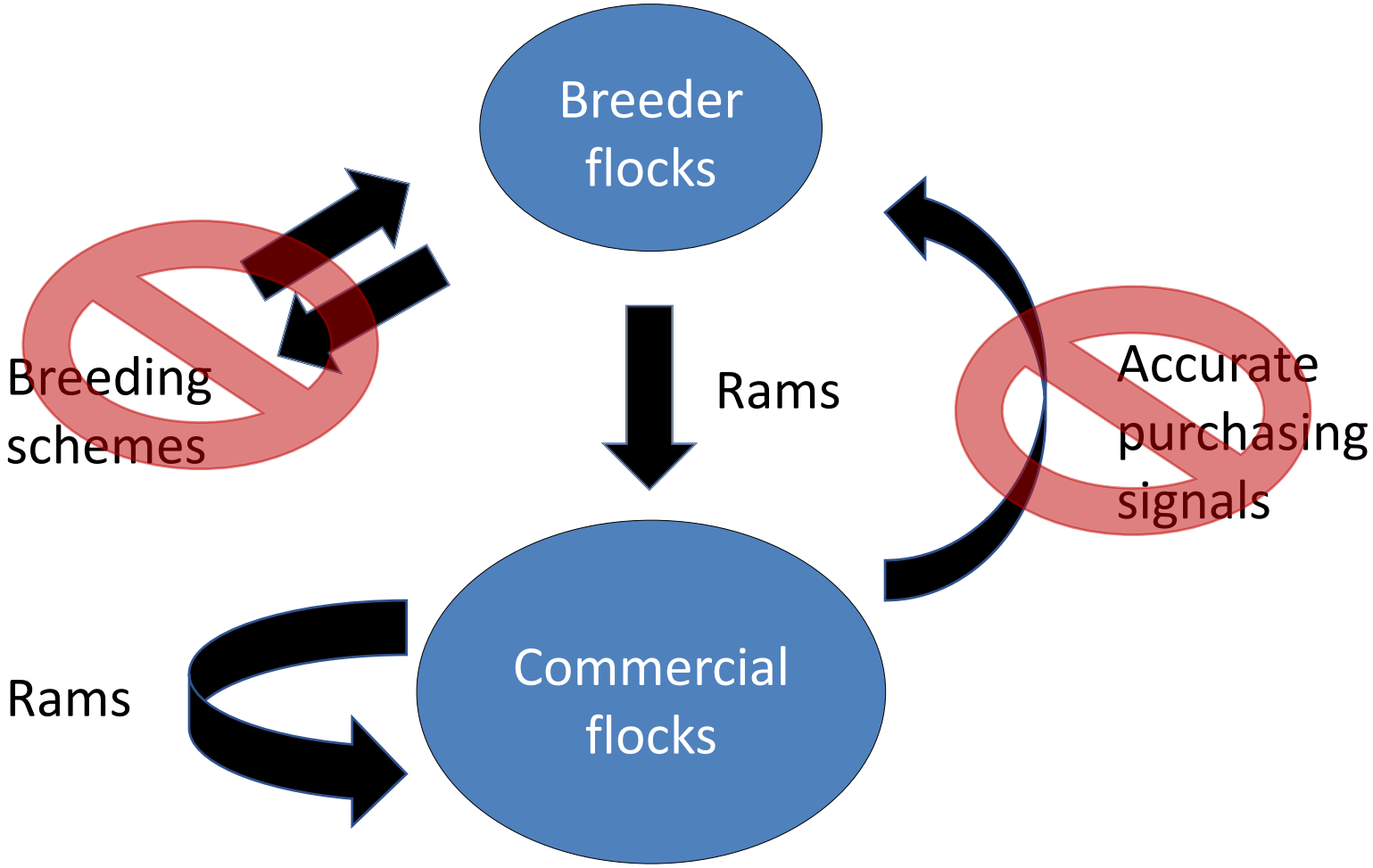
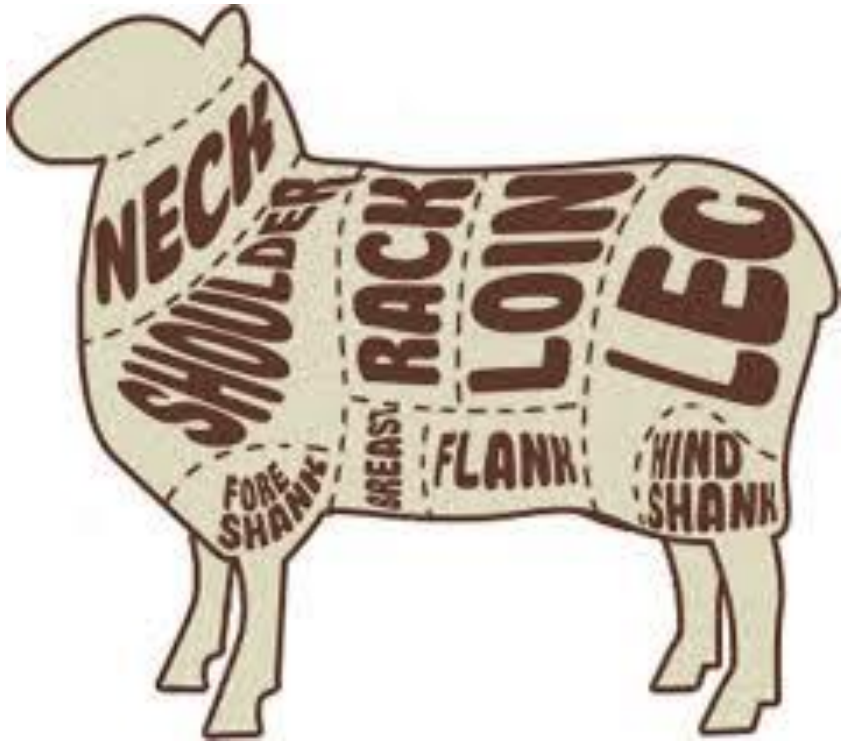
Back then - Industry structure



Back then – Challenges

- Part-time sheep farmers with small flocks
- Shrinking market
- Small number of breeders familiar with performance recording on a few traits
- Commercial farmers:
  - Were not involved
  - Had not supported the breeders who used performance recording

Terminal focus



The new focus

Maternal traits for functional and more profitable sheep

- Needed data

Communication

Timeline

- 2009 – Sheep Ireland born/ MALP
- 2010 – CPT begins
- 2011 – 1st LambPlus ram sale
- 2012 – Online ram search goes live
- 2013 – STAP industry payment scheme launched
- 2014 – New Indexes released
- 2015 – New database and website launched
- 2016 – Collected 18,000 DNA Samples/ Data quality index
- 2017 – Health Index
- 2018 – Launched LambPlus App

LambPlus

- The service centre
- Add value
- Educate
- Build confidence

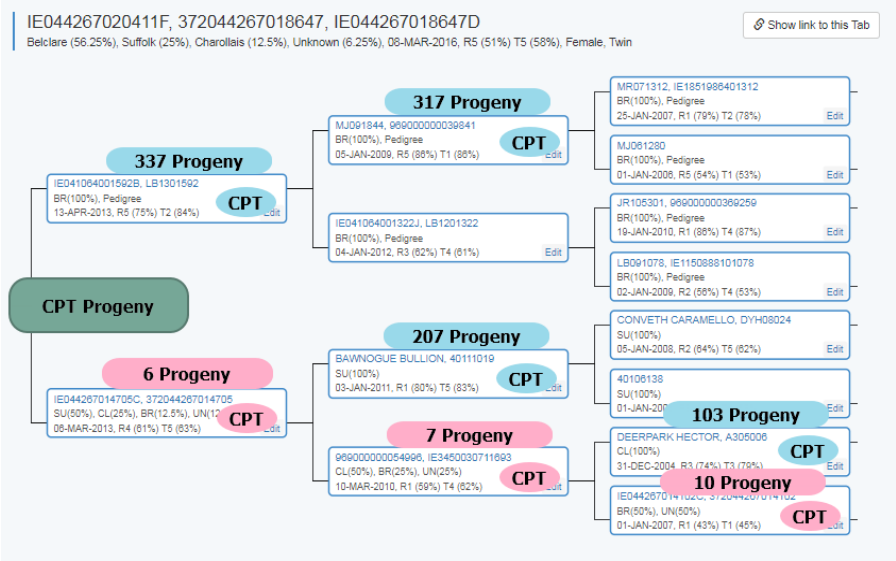
Maternal Lamb Producer Groups

- 22 commercial flocks
- Source of Commercial data
- DNA-based parentage technology

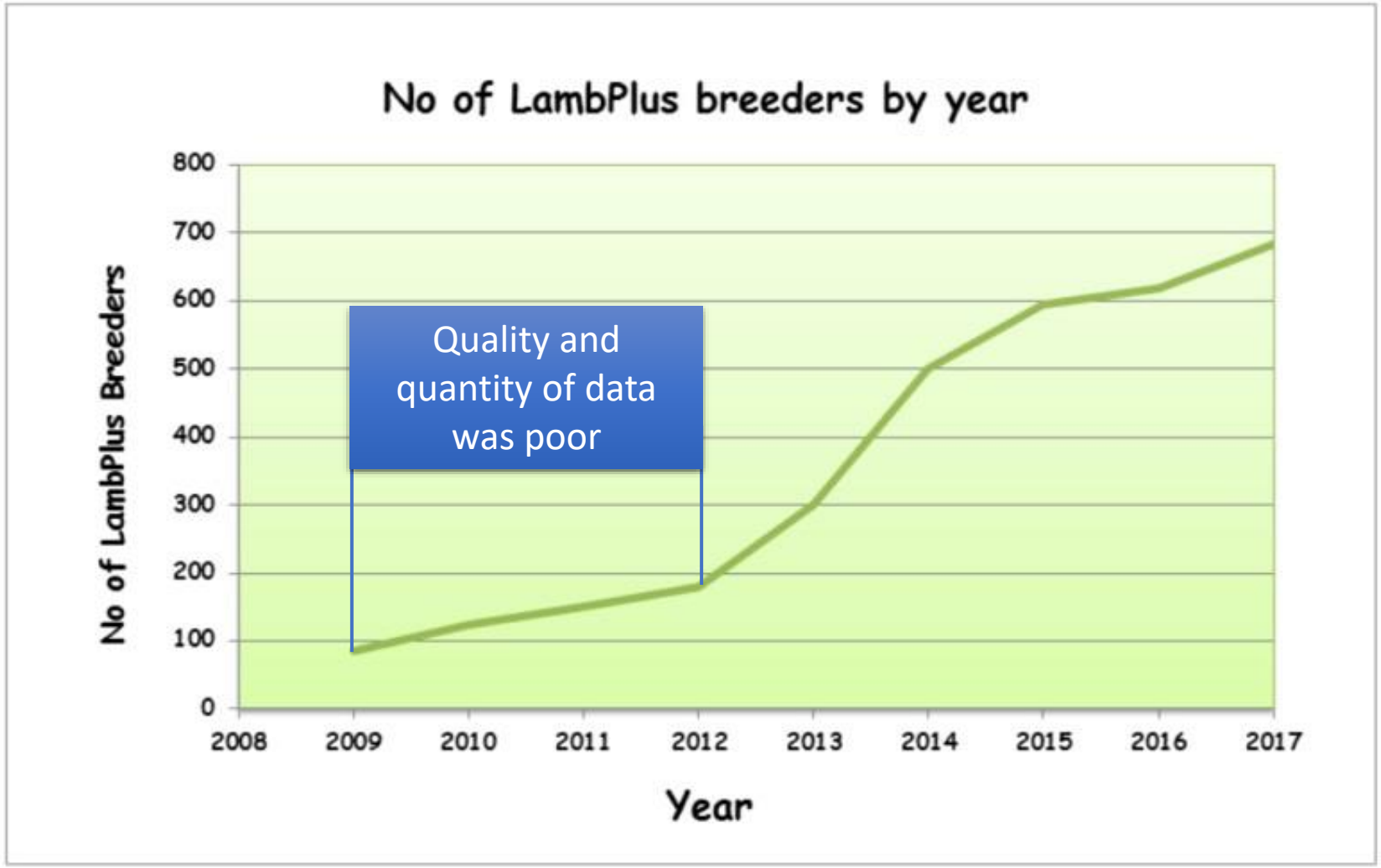
Ceased in 2015

Central Progeny Test (CPT)

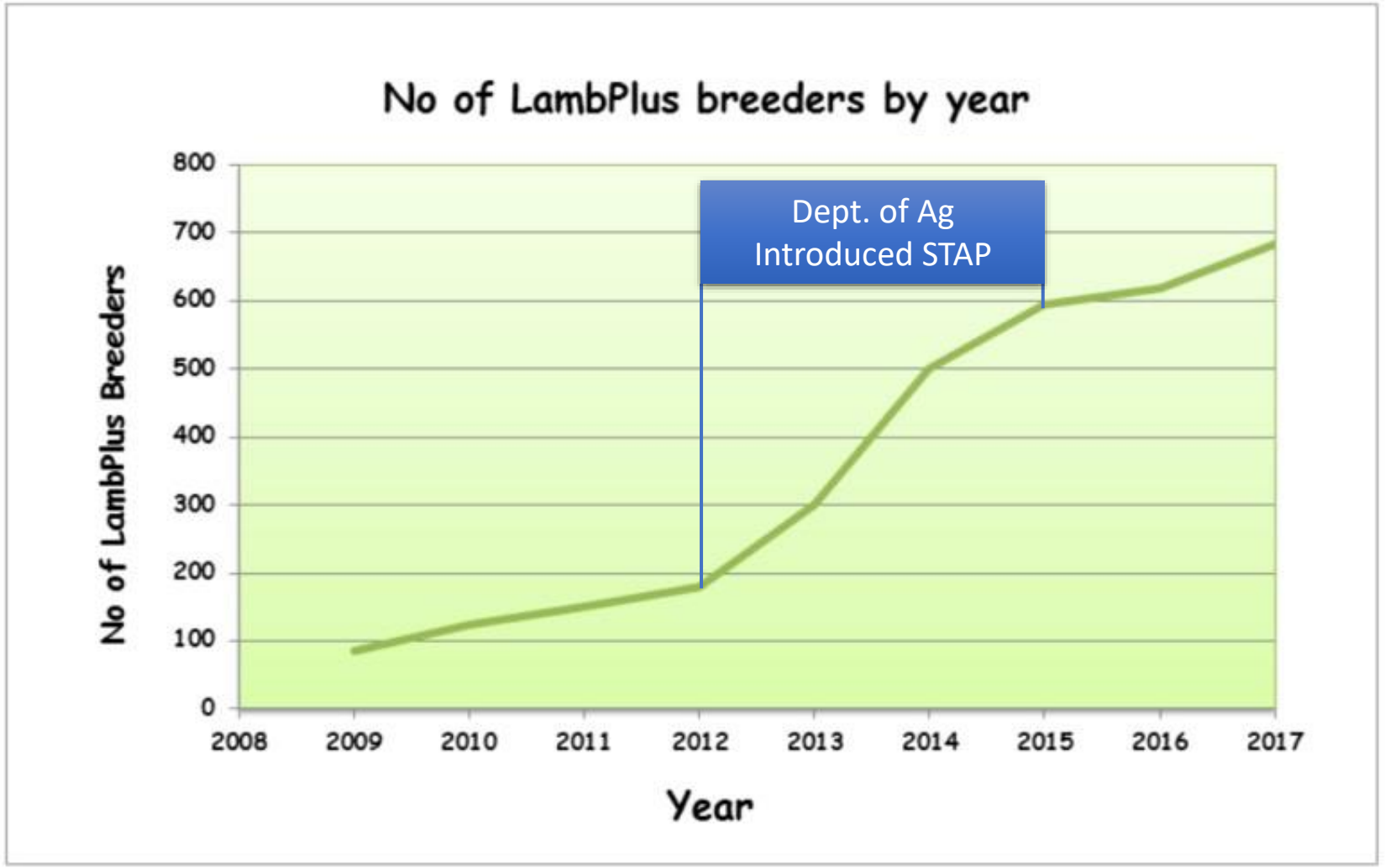
- 4 commercial farms ~ **2,500 ewes**
  - Genetic Linkage
  - Collecting data on novel traits
  - Proving new maternal bloodlines
  - Validation



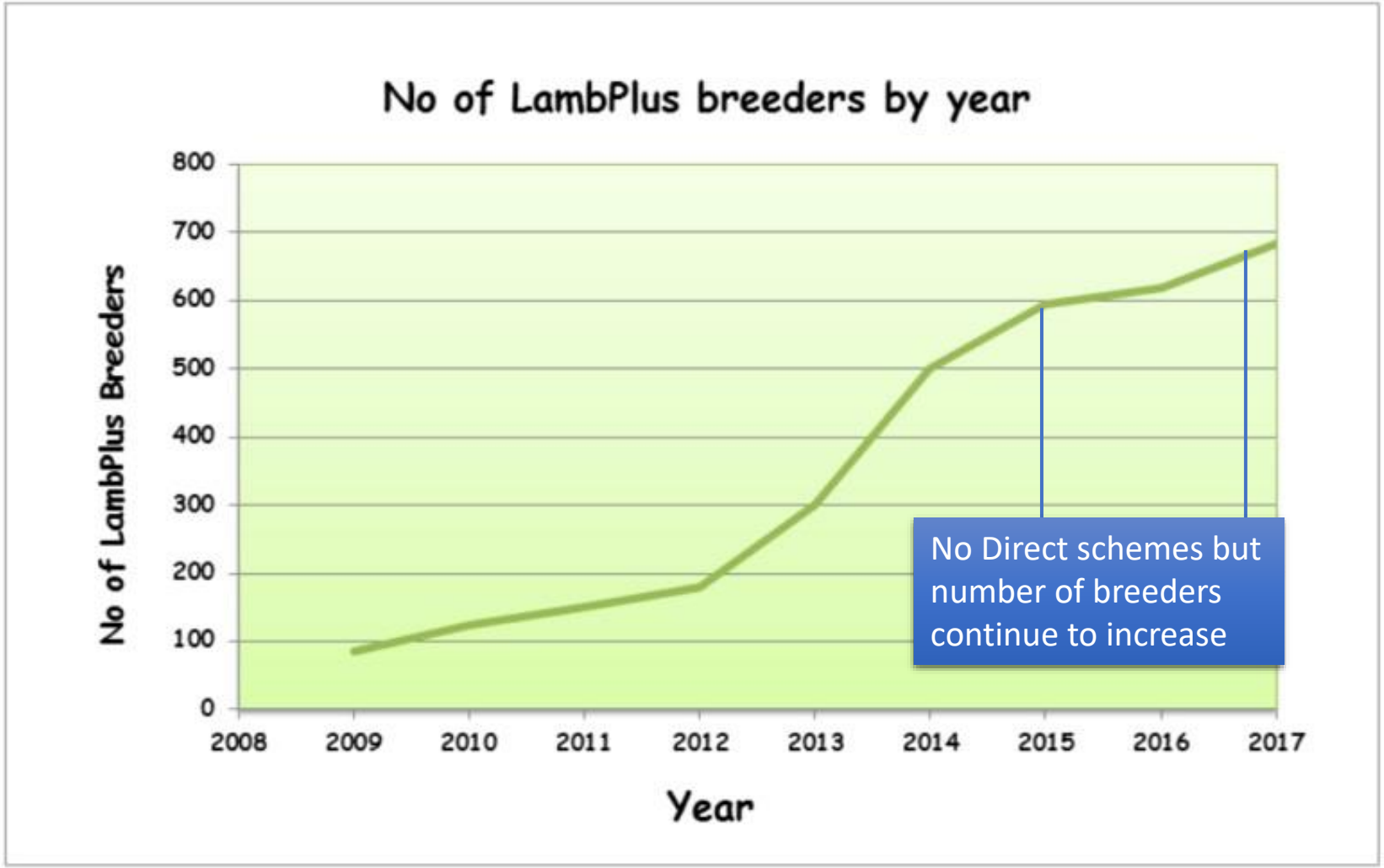
Phase 1: Setting up



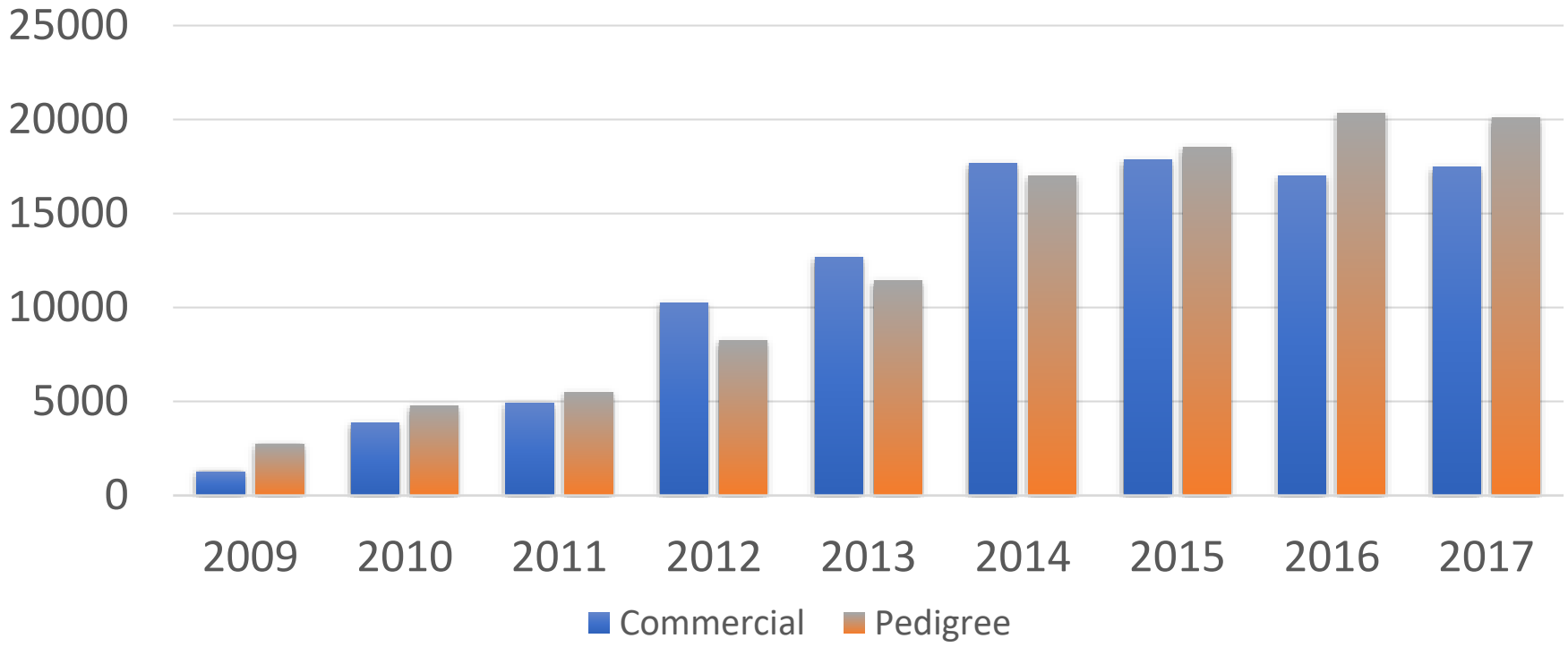
Phase 2: Substantial data flow



Phase 3: Expansion

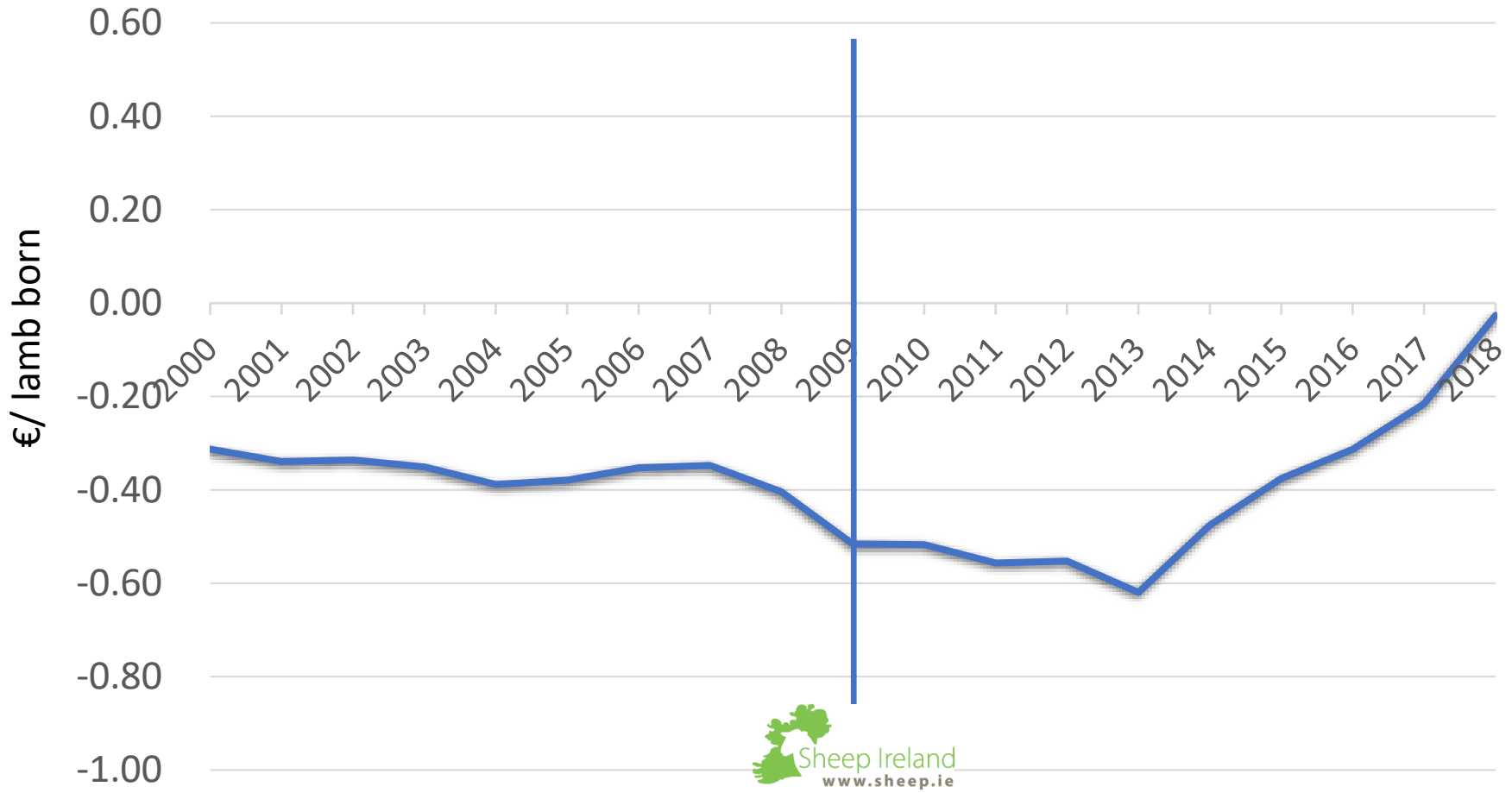


Growth in data – lambs recorded



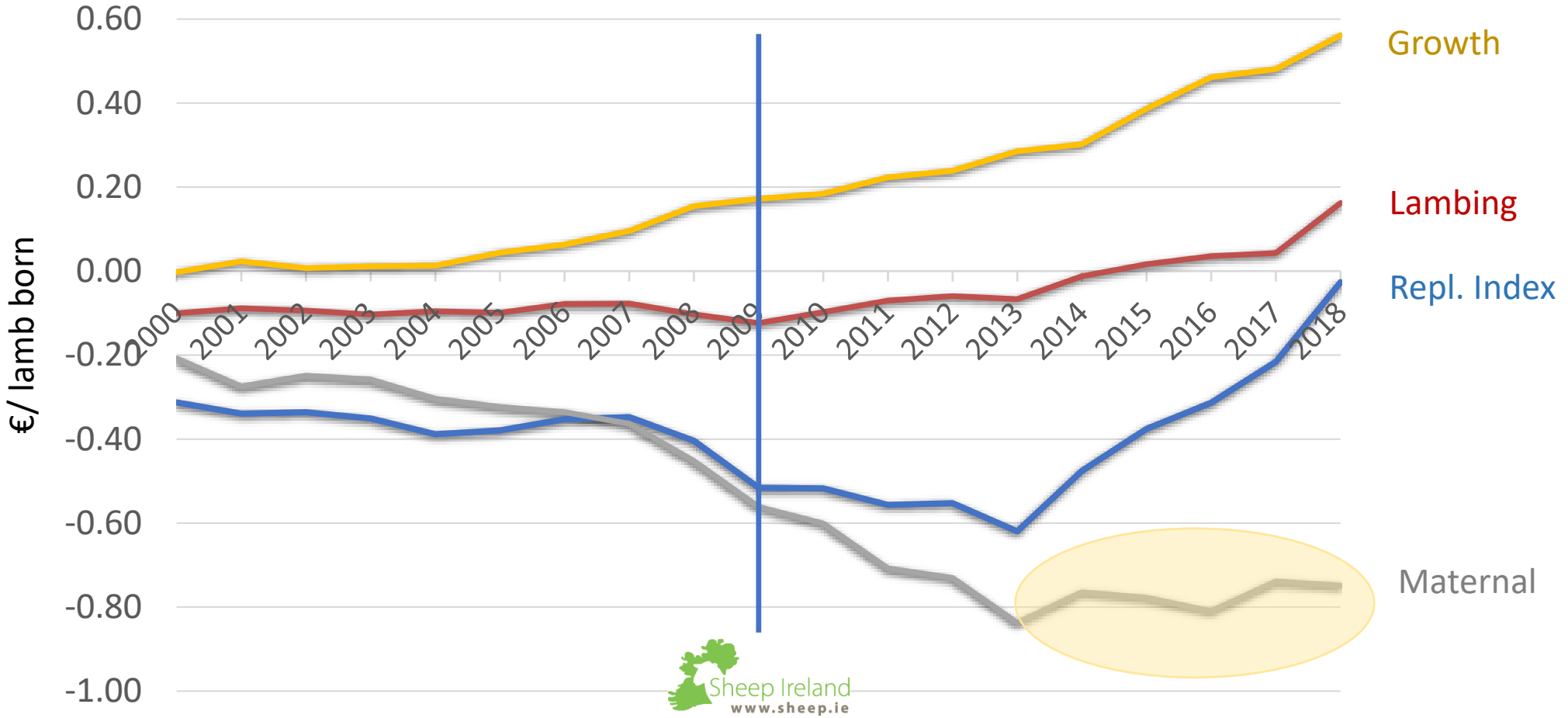
Terminal index trend

Replacement index trend

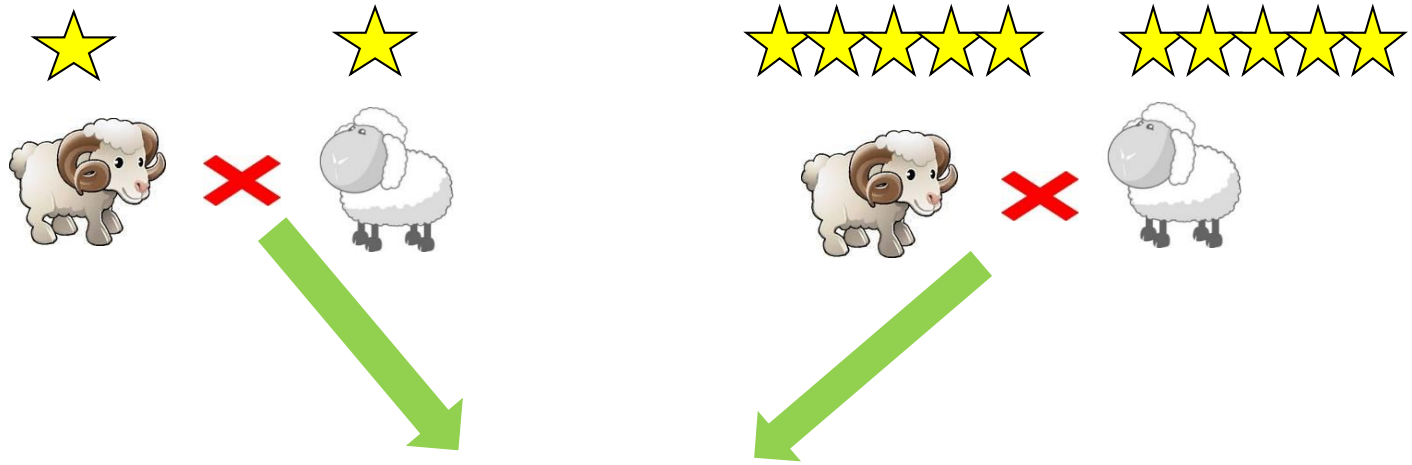


12 cents/ year

Replacement sub-index trends

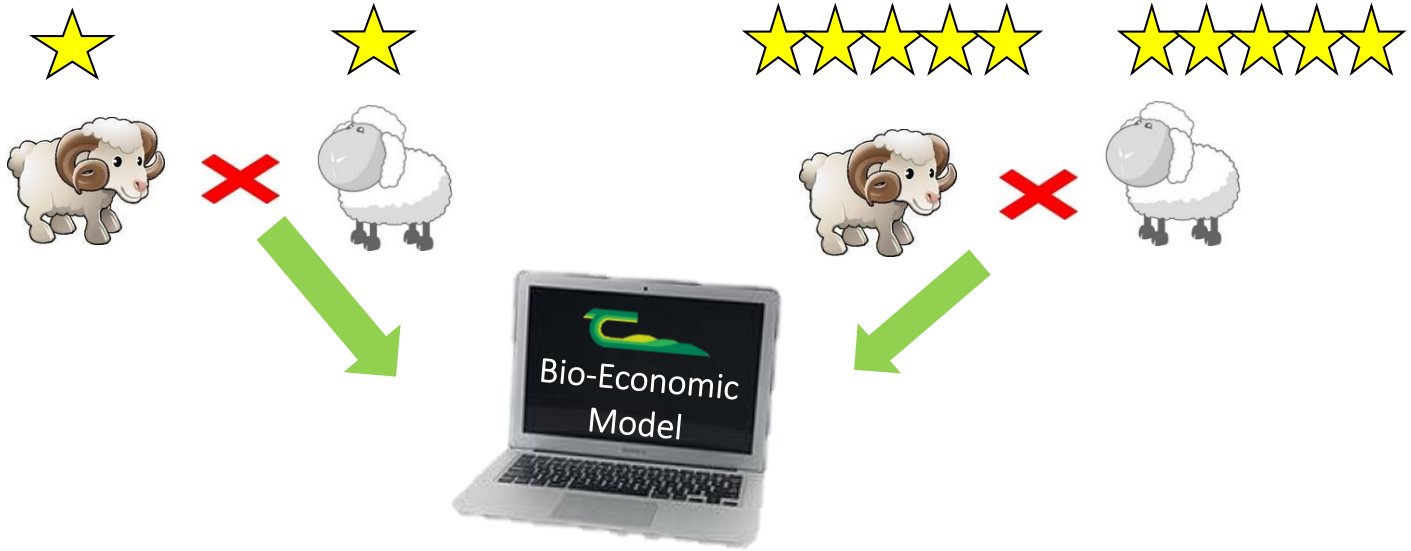


What's it worth?



Index	Trait	★	★★★★★	Difference
Replacement	Lamb Mortality (%)	10.7%	9.5%	-1.20%
	Number of lambs born	1.92	1.97	0.05
	Ewe mature weight (kg)	78.7	76.8	-1.9
Terminal	Lambing Difficulty (%)	23.1%	18.2%	-4.9%
	40 Day weight (kg)	18.1	20.2	2.10
	Weaning weight (kg)	31.9	34.5	2.60

What's it worth?



Fully recorded flock

- 1 Star X 1 Star
- 5 Star X 5 Star

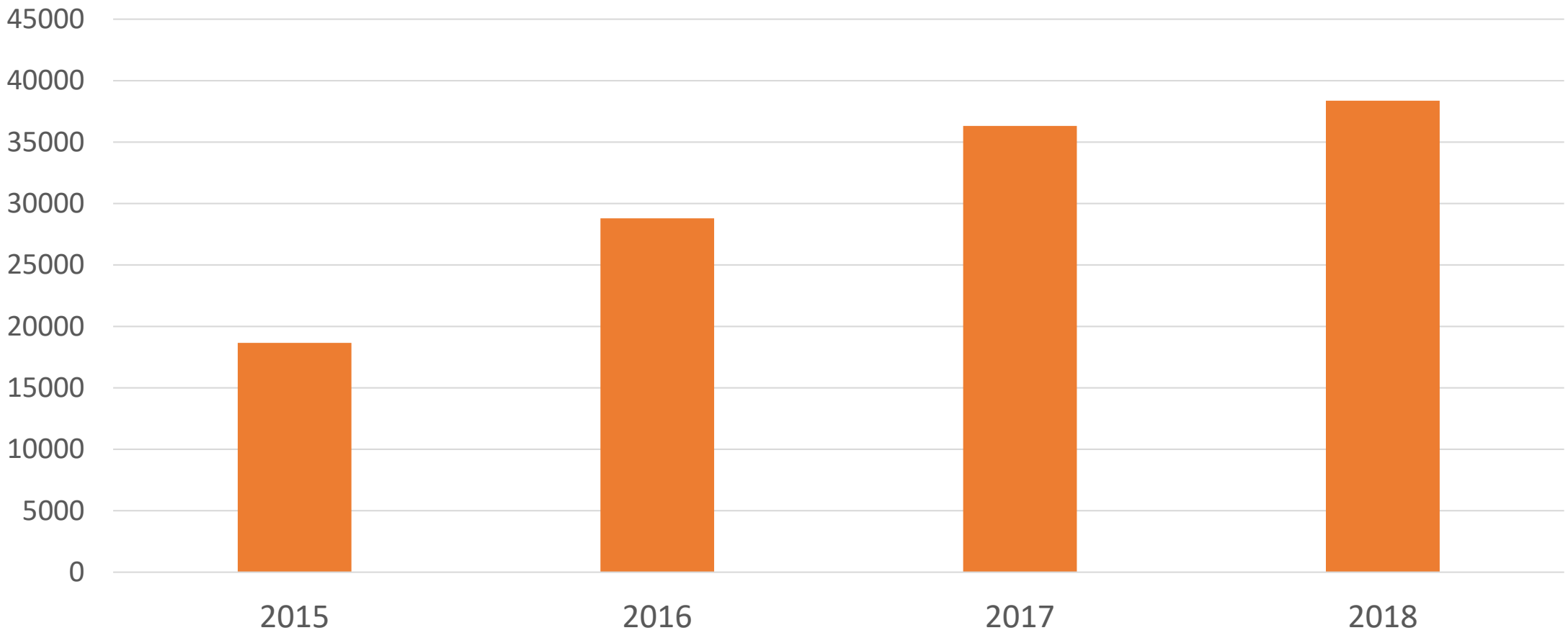
Difference in profit of **€20/ewe**

Commercial Flock

- Non-recorded
- Using 5 Star rams VS 3 Star

Difference in profit of **€5/ewe**

Searches on RamSearch.ie



The future - New traits

- Age at slaughter
- Lamb vigour
- Mothering ability
- Mastitis
- Ewe productivity (number of lambings)
- GHG emissions

The future

- Inclusion of more traits
- Routine genomic parentage assignment
- International EBVs
- Across-breed evaluations
- Maternal sub-index gains
- Genomic Evaluations
- …

New challenges

- Overcome use of non-recorded rams (est. to be 75% of rams used)
- Labour costs
- Global market uncertainty
- Lack of factory data from commercial animals
- Consumer traits (e.g. eating quality)
- Overall industry direction - a new “Malone” report?

- **The hippo is still chasing**

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Parentage assignment using genomics

Donagh Berry[1], Aine O'Brien[1], Ciara Long[2], Thomas Browne[2], John McCarthy[2], Daragh Mathews[2], Kevin McDermott[2], Noirin McHugh[1]

[1]Teagasc, Moorepark,

[2] Sheep Ireland

Donagh.berry@teagasc.ie

Sheep Ireland/ICBF Annual Conference
December 2018

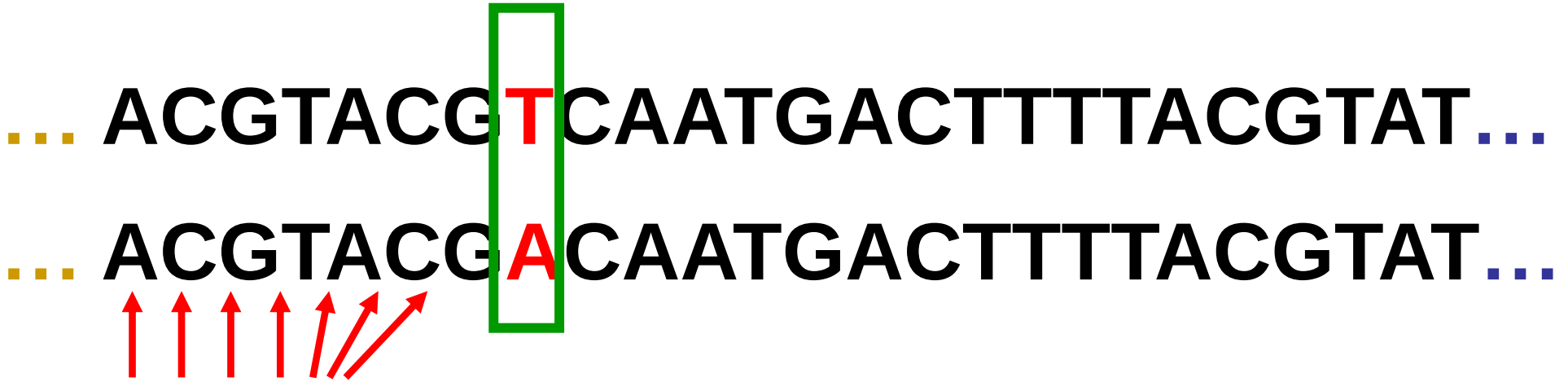
Why important?

- Accurate genetic evaluations (national + flock)
  - High reliability
  - High precision (less fluctuations in proofs)
- Knowledge of inter-animal relationships
  - Mating plans - inbreeding
- Integrity of flockbook

The theory

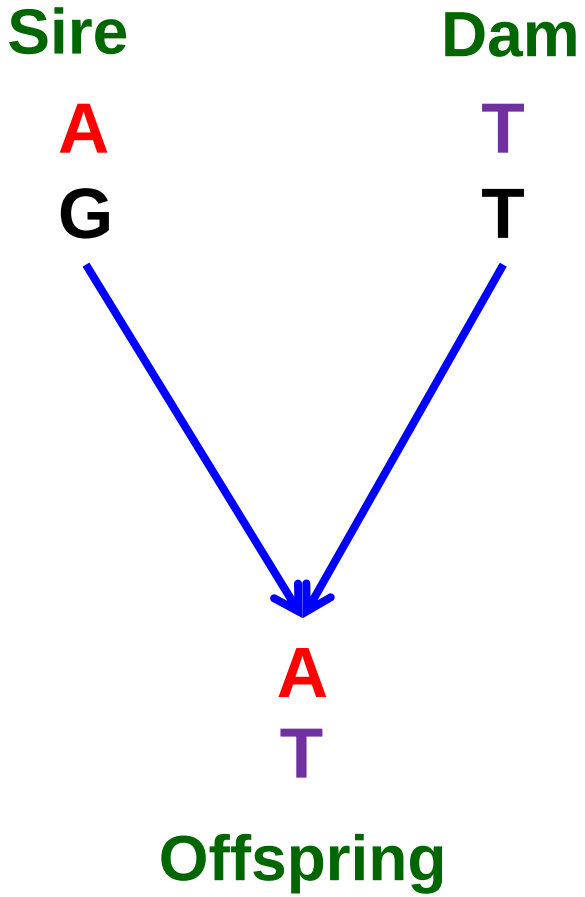
The technology

- 99.9% of human DNA is identical – most of the differences are in the form of SNPs

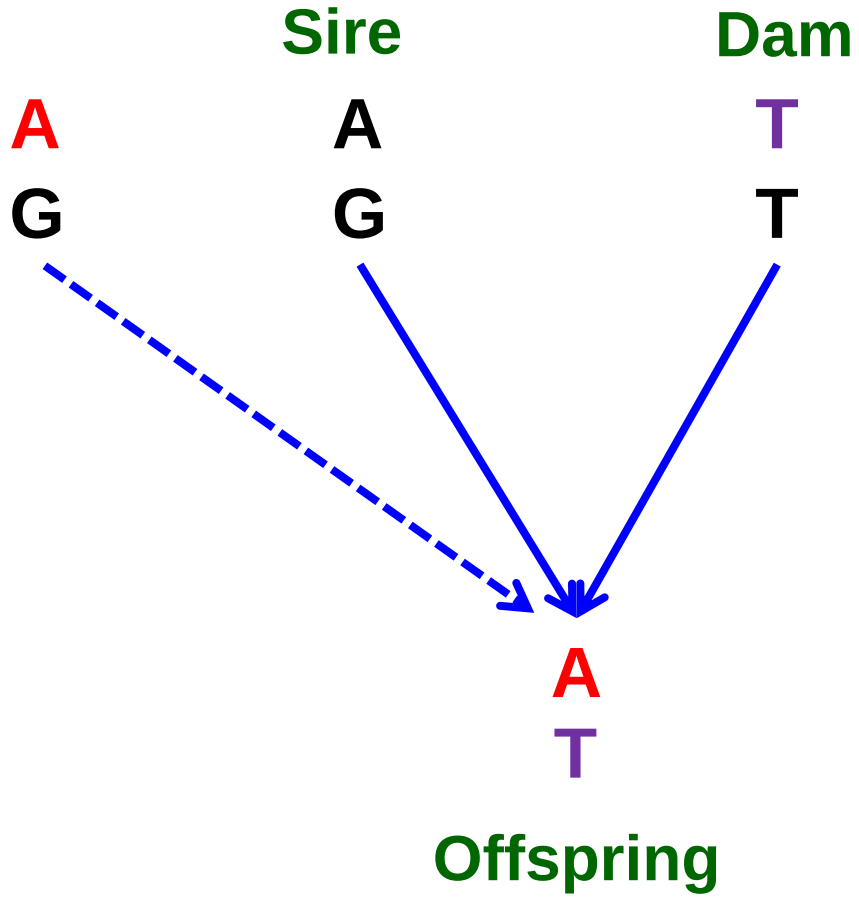


- Single Nucleotide ~~Polymorphism~~ Change

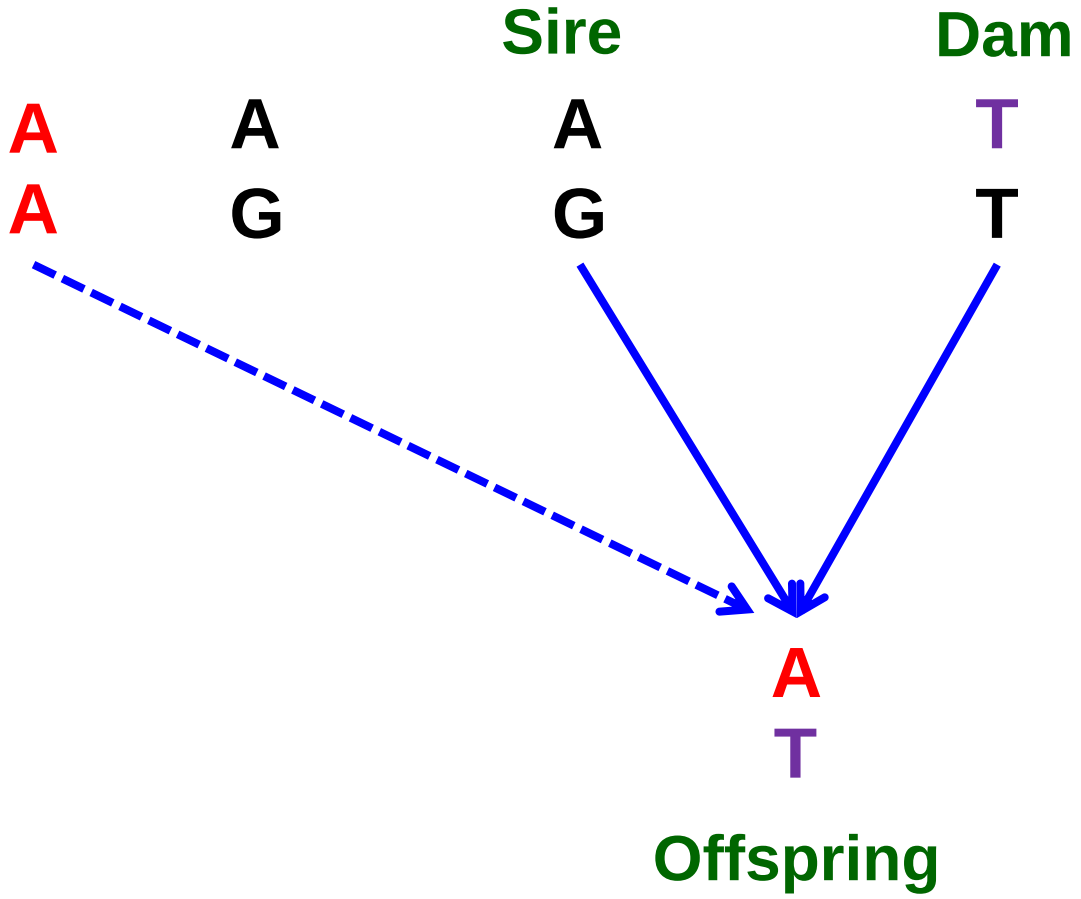
Parentage – why do many markers?



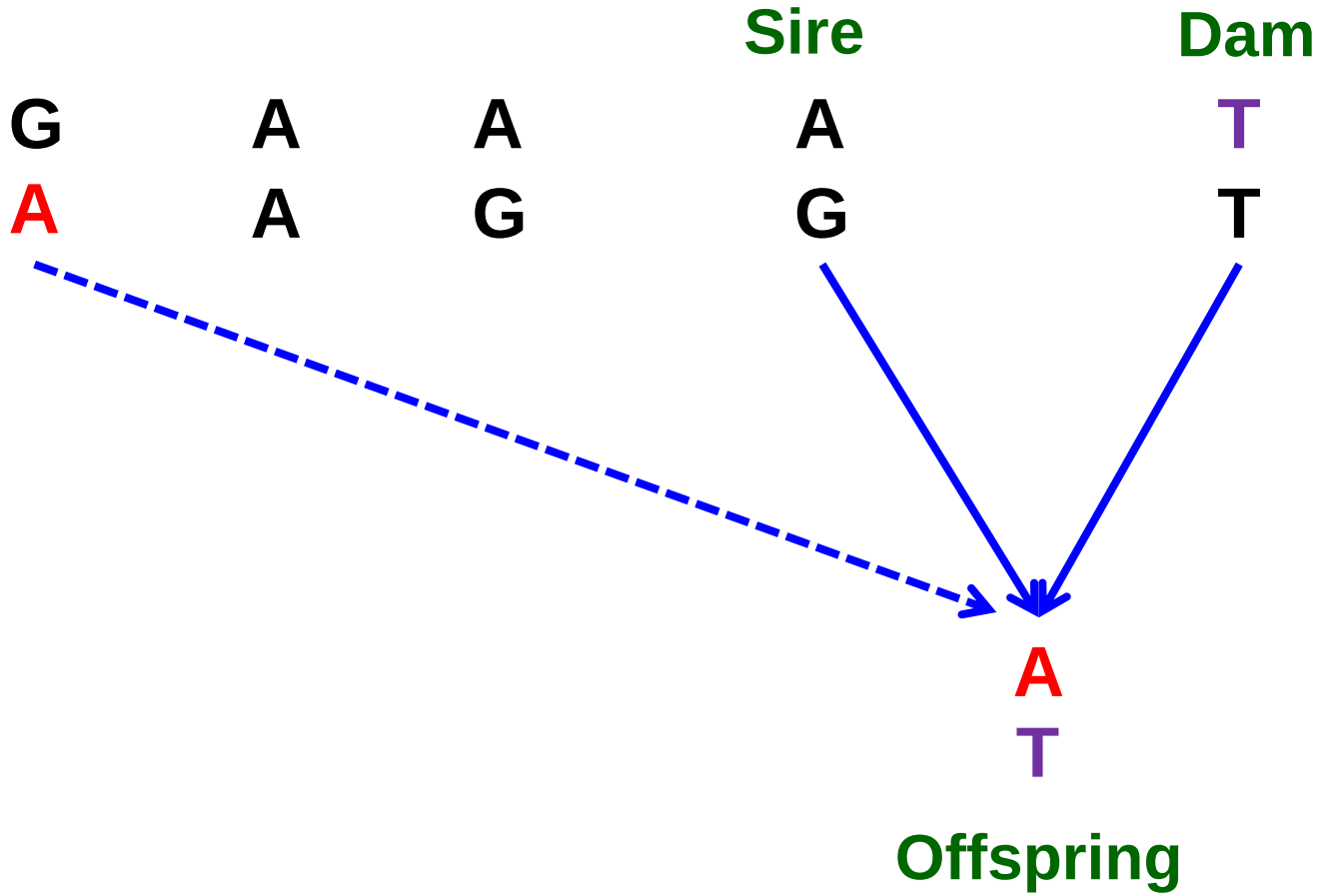
Parentage – why do many markers?



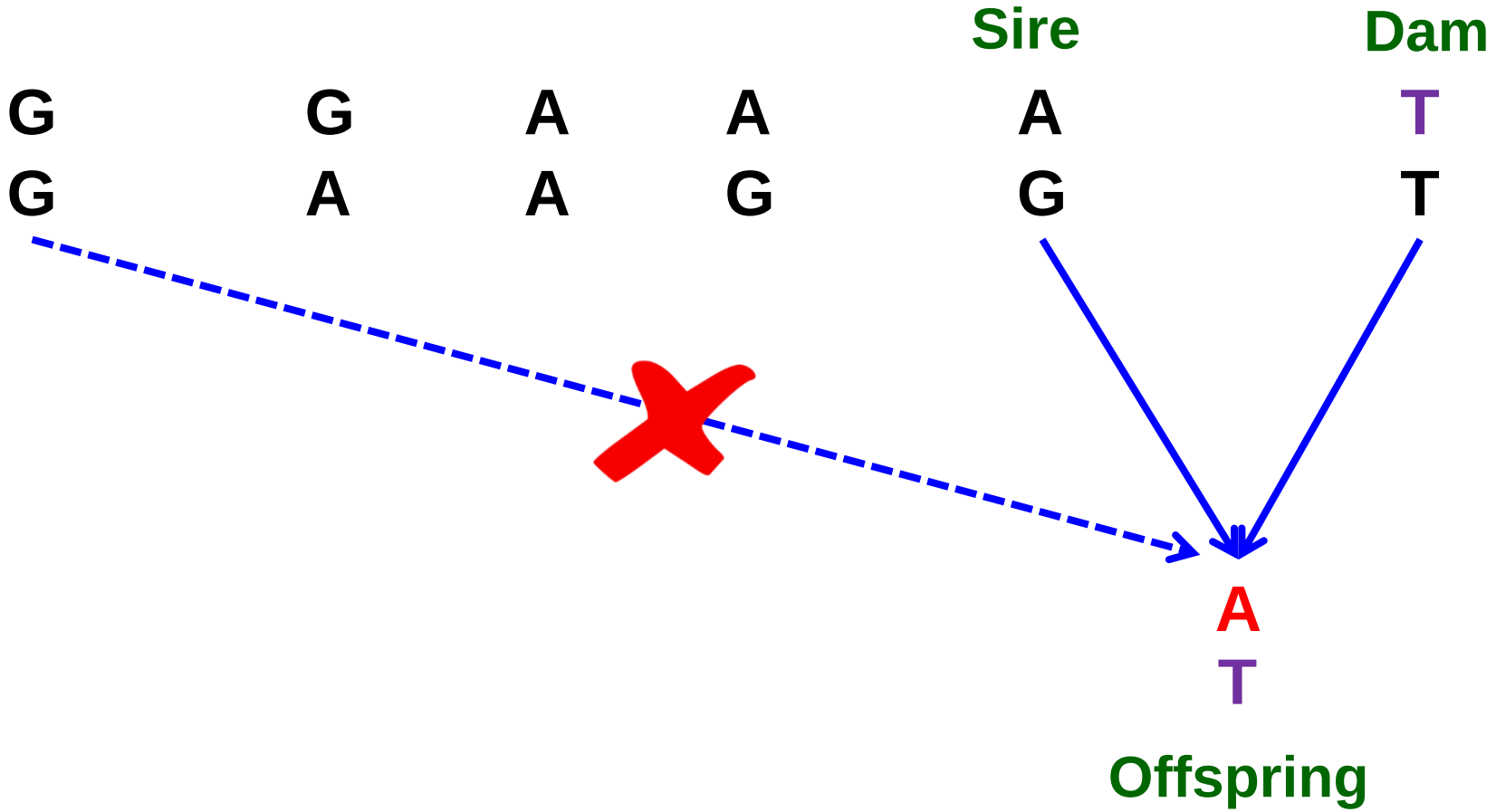
Parentage – why do many markers?



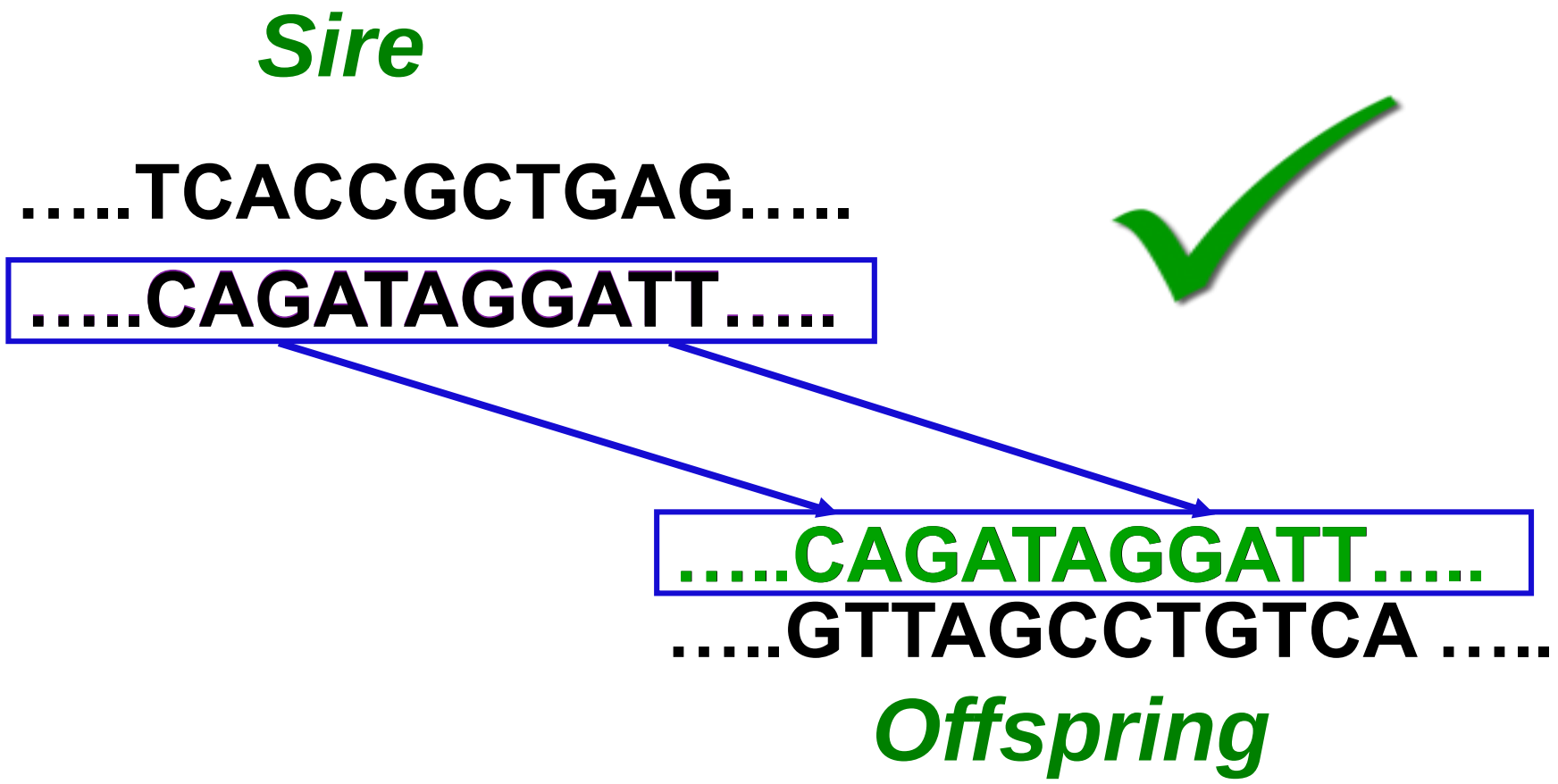
Parentage – why do many markers?



Parentage – why do many markers?

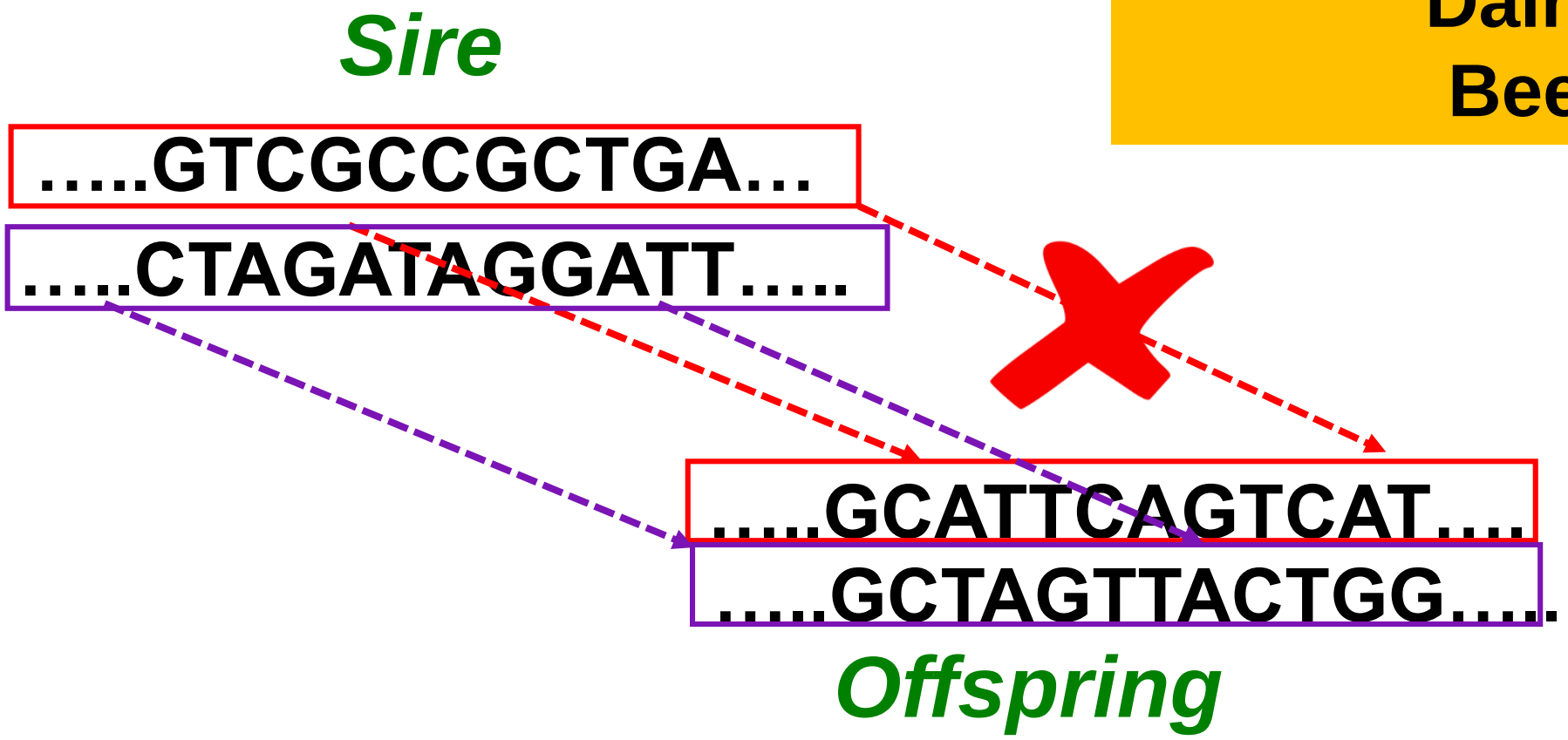


Parentage verification/validation

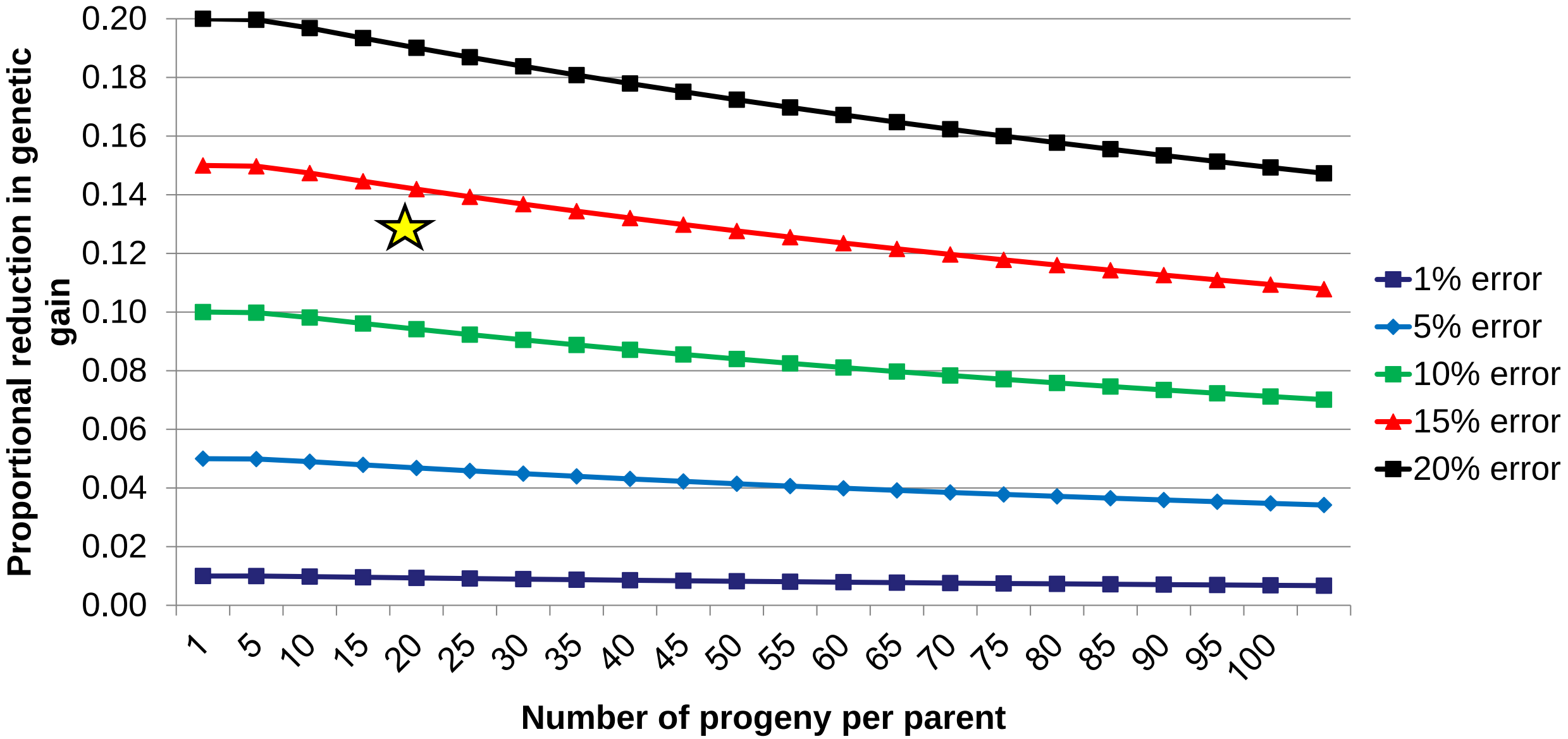


Parentage invalidation

Sire-offspring errors
Dairy ~7.5%
Beef ~14%



Impact of parentage errors



Points to note

- Parentage error is worse than no parentage recorded
- Need around ~100 carefully selected DNA variants for parentage (in)validation
  - Left in limbo if parentage not validated
- Parentage assignment
  - At least 350 carefully selected DNA variants

Parentage assignment

"Sire 1" …..ATTCGGGCTGTG…..

"Sire 2" …..GCGATGGCAATG…..

"Sire 3" …..TAGGACGCTATG…..

"Sire 4" …..GCATTCAGTCAT…..

Proposed Sire

…..GTCGCCGCTGA…

…..CTAGATAGGATT…..

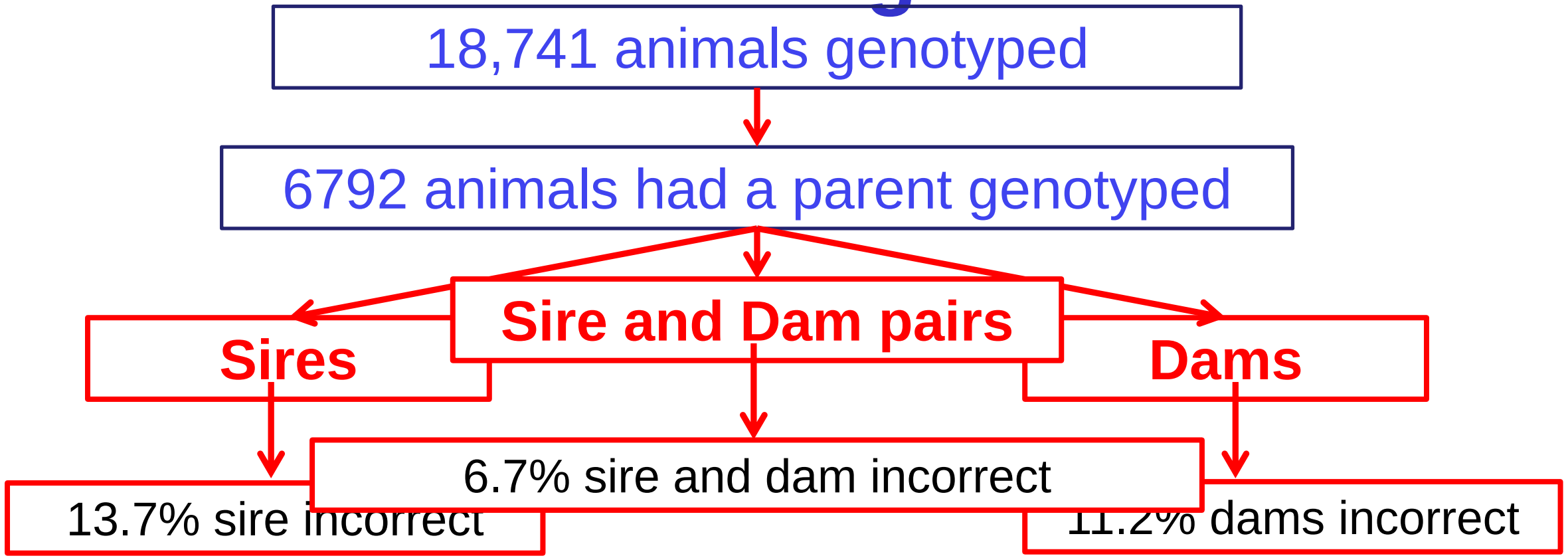
…..GCATTCAGTCAT….

…..GCTAGTTACTGG…..

Offspring

In practice

Parentage


18,741 animals genotyped
6792 animals had a parent genotyped
Sire and Dam pairs
Sires
Dams
6.7% sire and dam incorrect
13.7% sire incorrect
11.2% dams incorrect

Progress

- Data now uploaded to database
  - Greater data integrity and monitoring
  - Quality controls implemented
- Ordering genotypes
  - Evaluation of different tag options
- Parentage verification → parentage assignment
  - Based on cattle developments

- More rapid turnaround time
  - 3-4 weeks from receiving sample

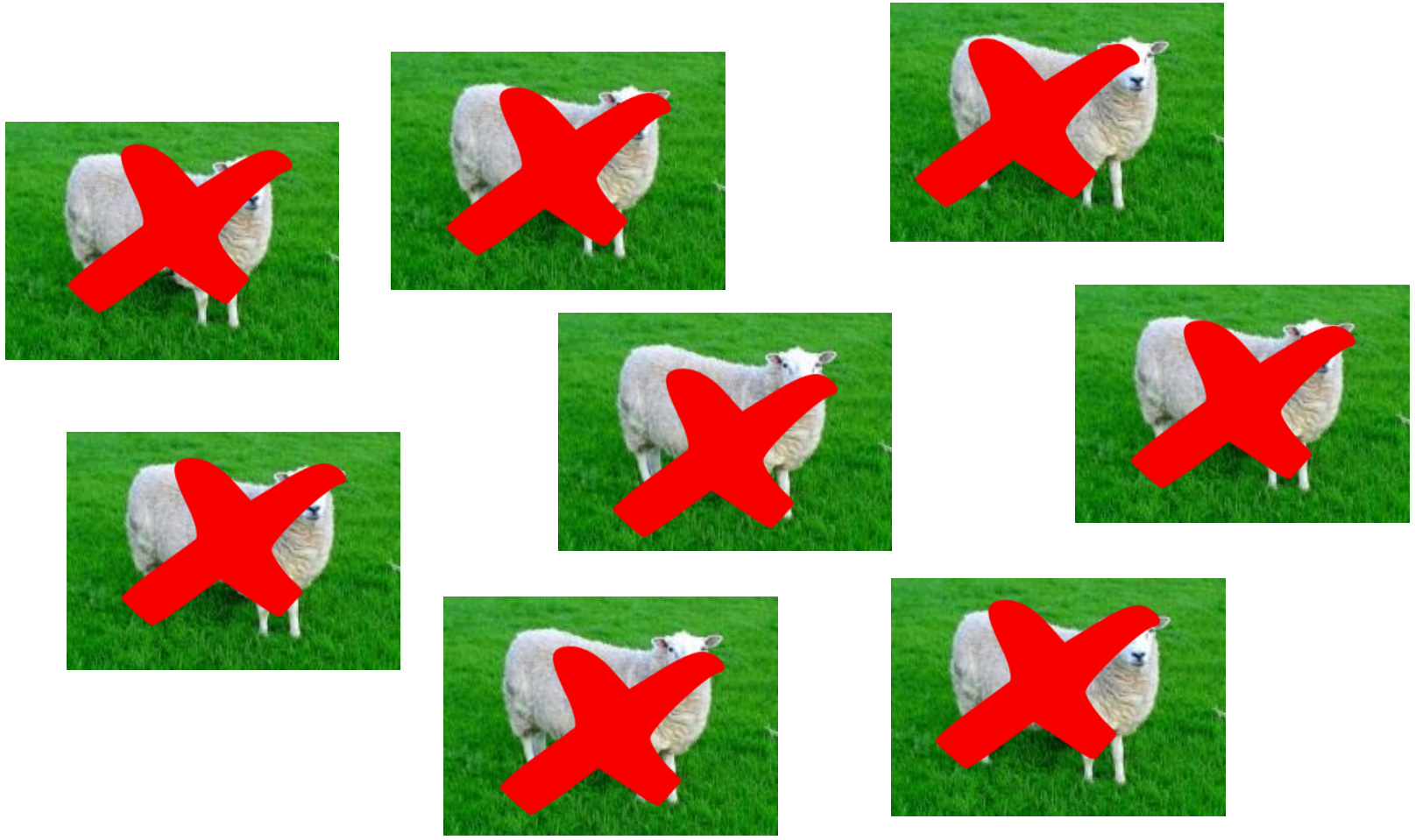
Fool-proof???

- Sample mix-up
  - Wrong parent tagged
  - Wrong lamb tagged
  - Samples mix-labelled
  - Samples mixed up in lab
  - Duplicate sample IDs (international)
- Dates of births mixed up
  - Lamb is identified as sire of the sire
- Poor DNA quality
  - Genotypes mis-called and parent is invalidated

Fool-proof???

- Biology
  - Identical twins have the same DNA (very rare)
  - Very close inbred individuals
  - DNA deletions at the marker
  - Gender mis-called (sire→ dam; dam→ sire)
    - Swyer syndrome – female with male DNA
- Database issues
- Parents not genotyped
  - Cannot fill in the blanks

Take home message



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Ewe Efficiency & Greenhouse Gases

Fiona McGovern & Noirin McHugh

Genetics Conference 2018
5th December 2018

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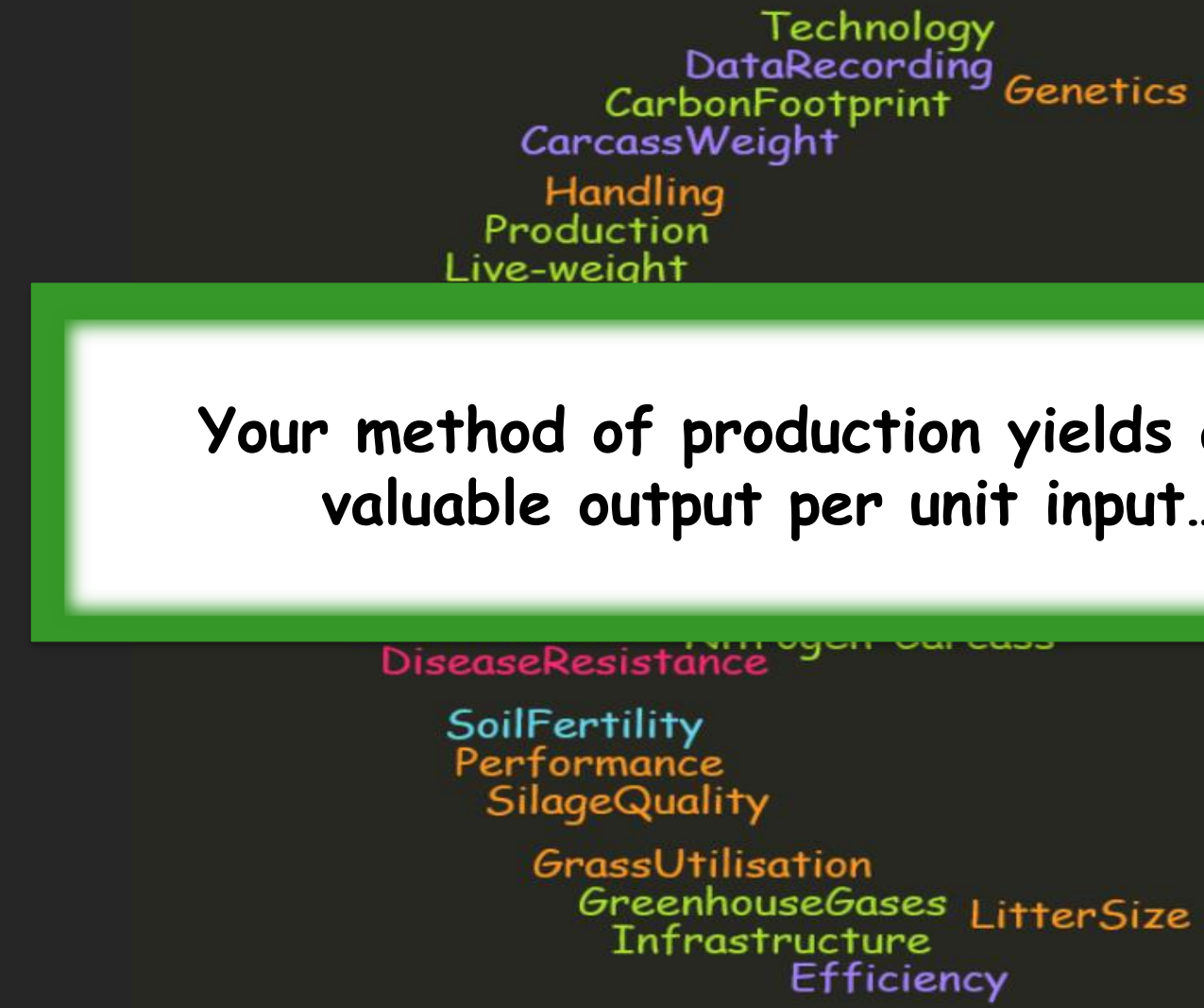
Overview

- **What is efficiency?**
- **Ewe Efficiency –**
  - ❖ *The replacement index*
- **Future research**

What is Efficiency?



Your method of production yields a more valuable output per unit input…..

What is important on your farm….

No. lambs/ewe

Can we use existing data as a proxy for efficiency?

Deviation in animal performance from a population…..

Carcass Output/ ha

Data

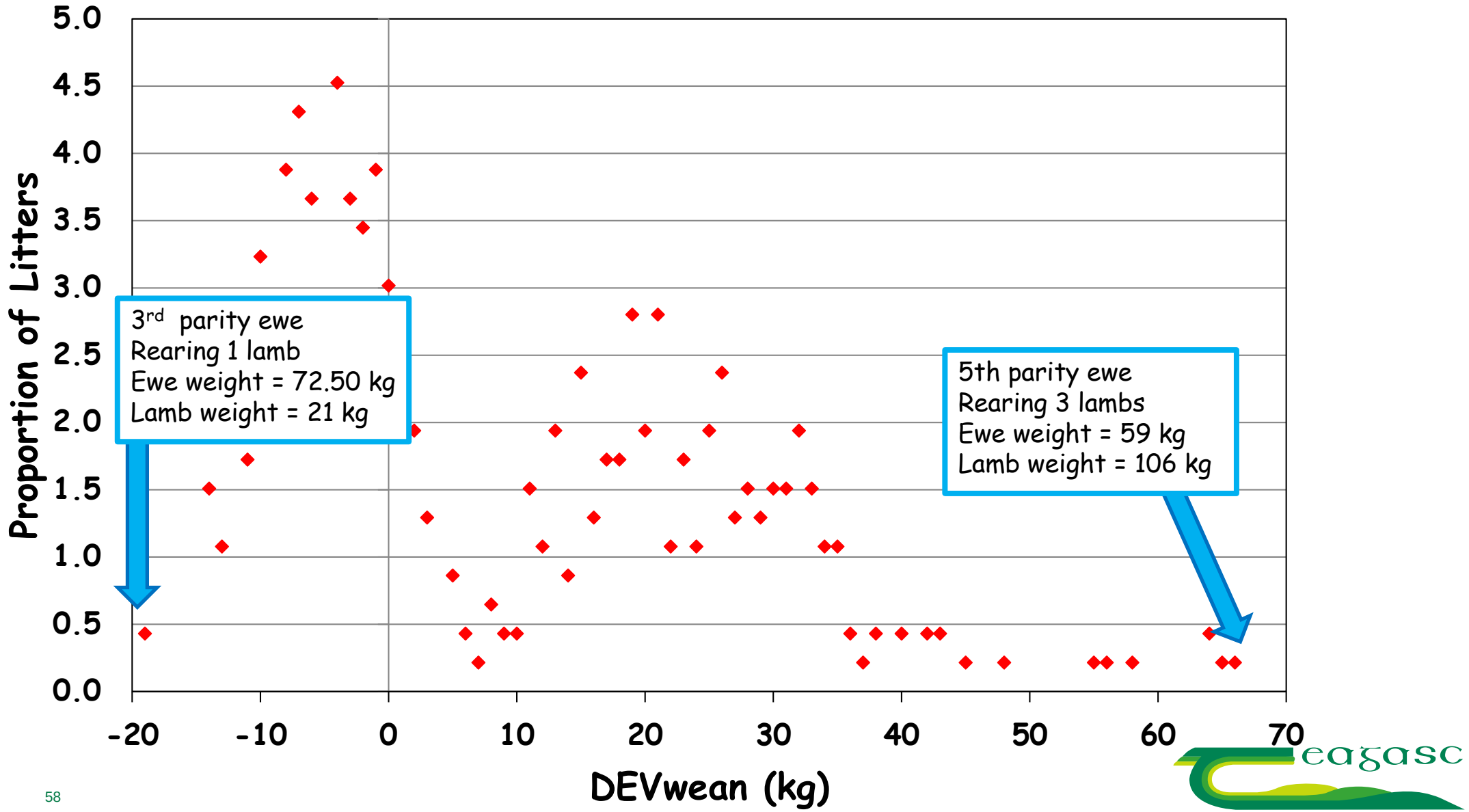
Live weight records

Ewe weights:

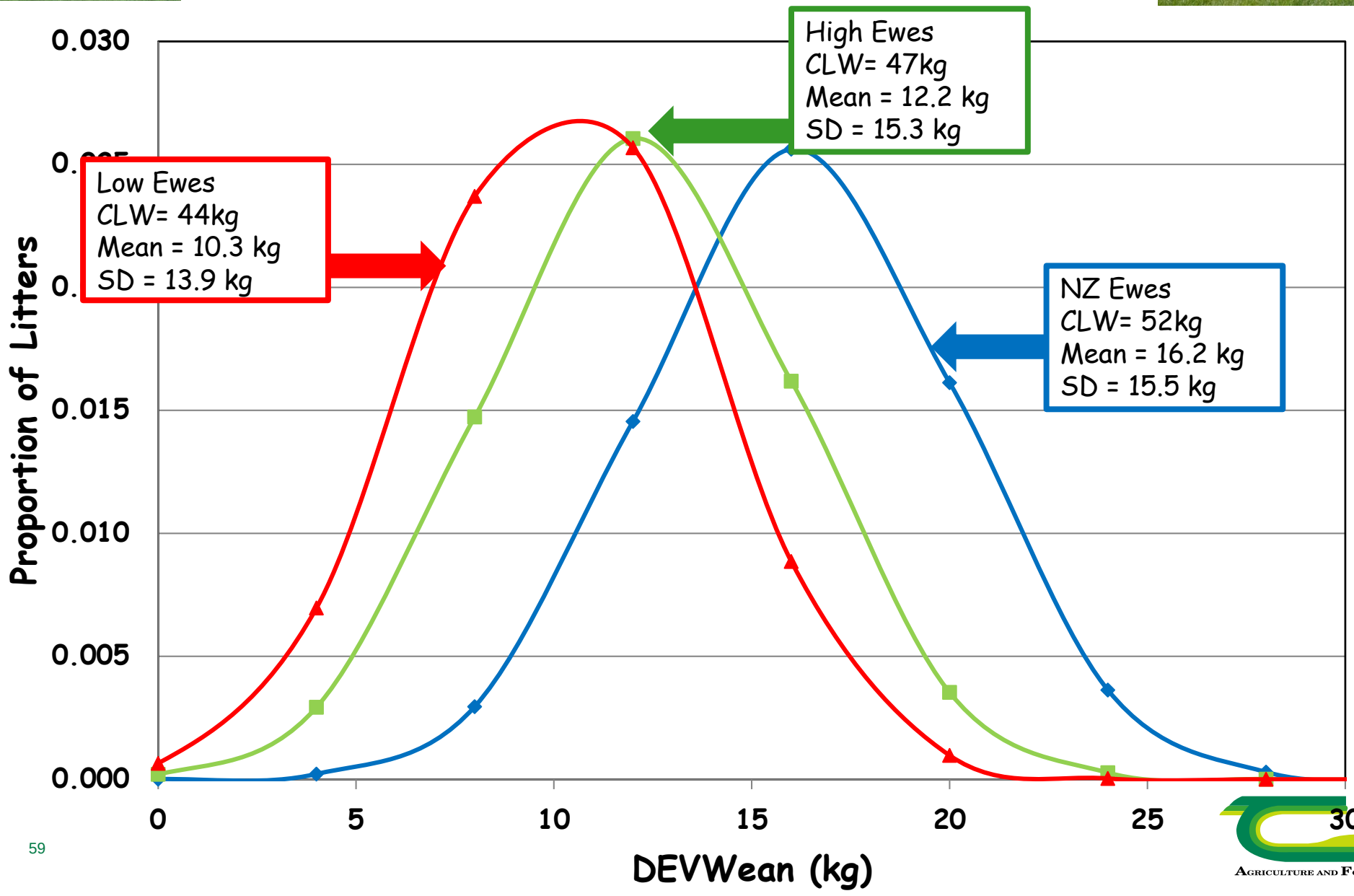
Lamb weights:

Investigate the variation - combined litter weight relative to ewe weight at same time

Benchmarking – Flock A



Benchmarking - INZAC



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New Sheep Research Greenhouse Gases

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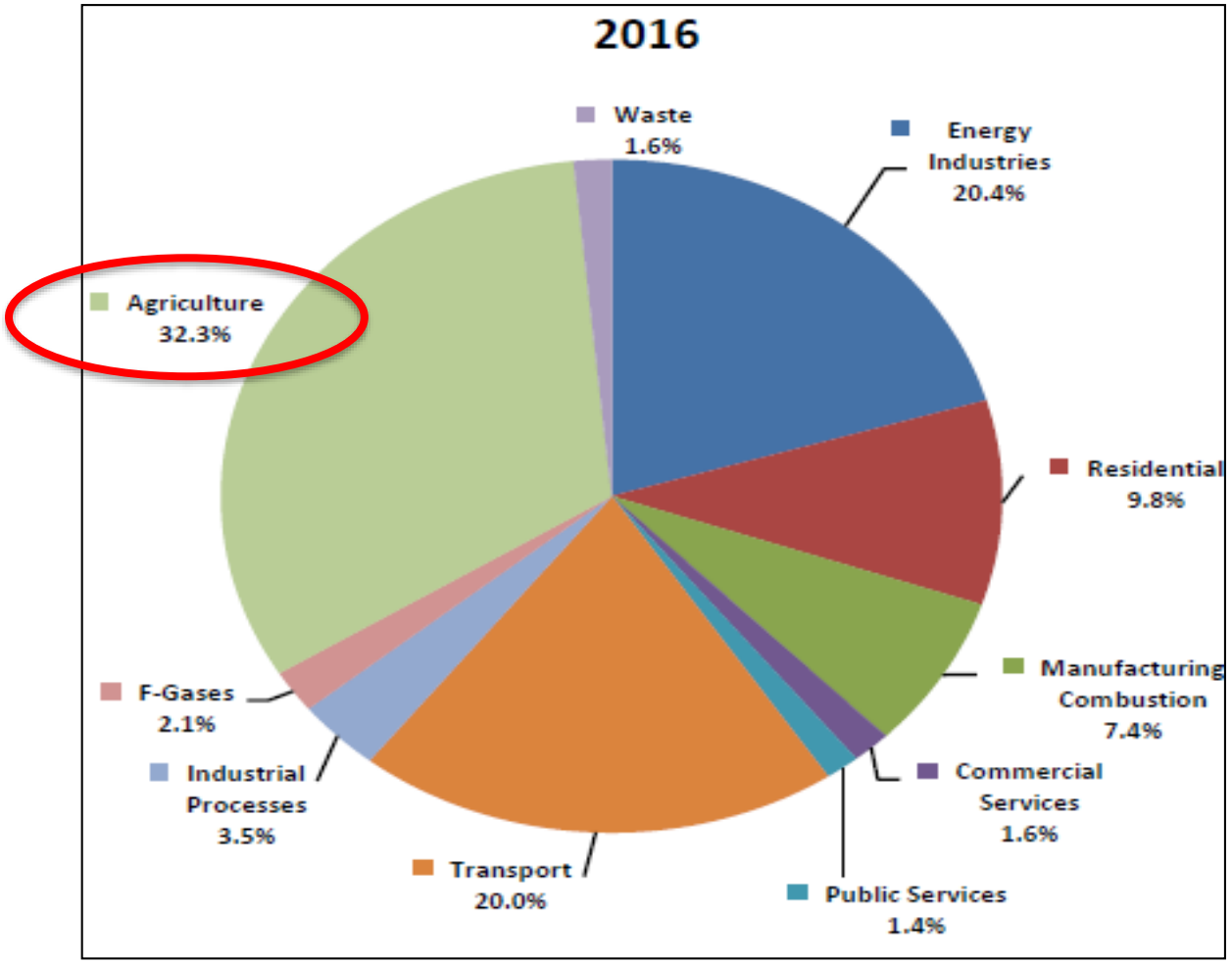
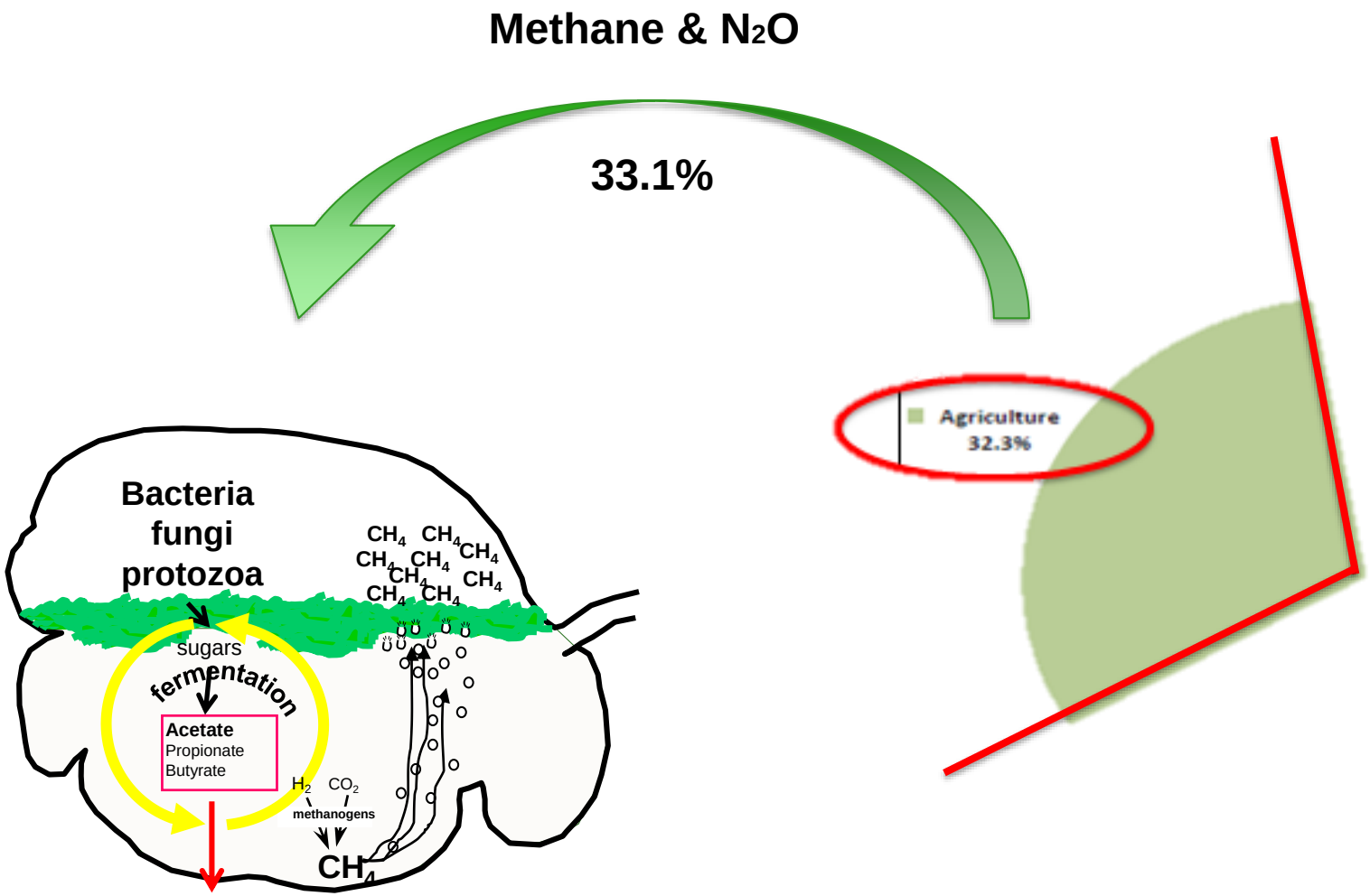
Ireland's GHG Emissions….



Ireland's Greenhouse Gas emissions by sector for 2016
(EPA, 2018)

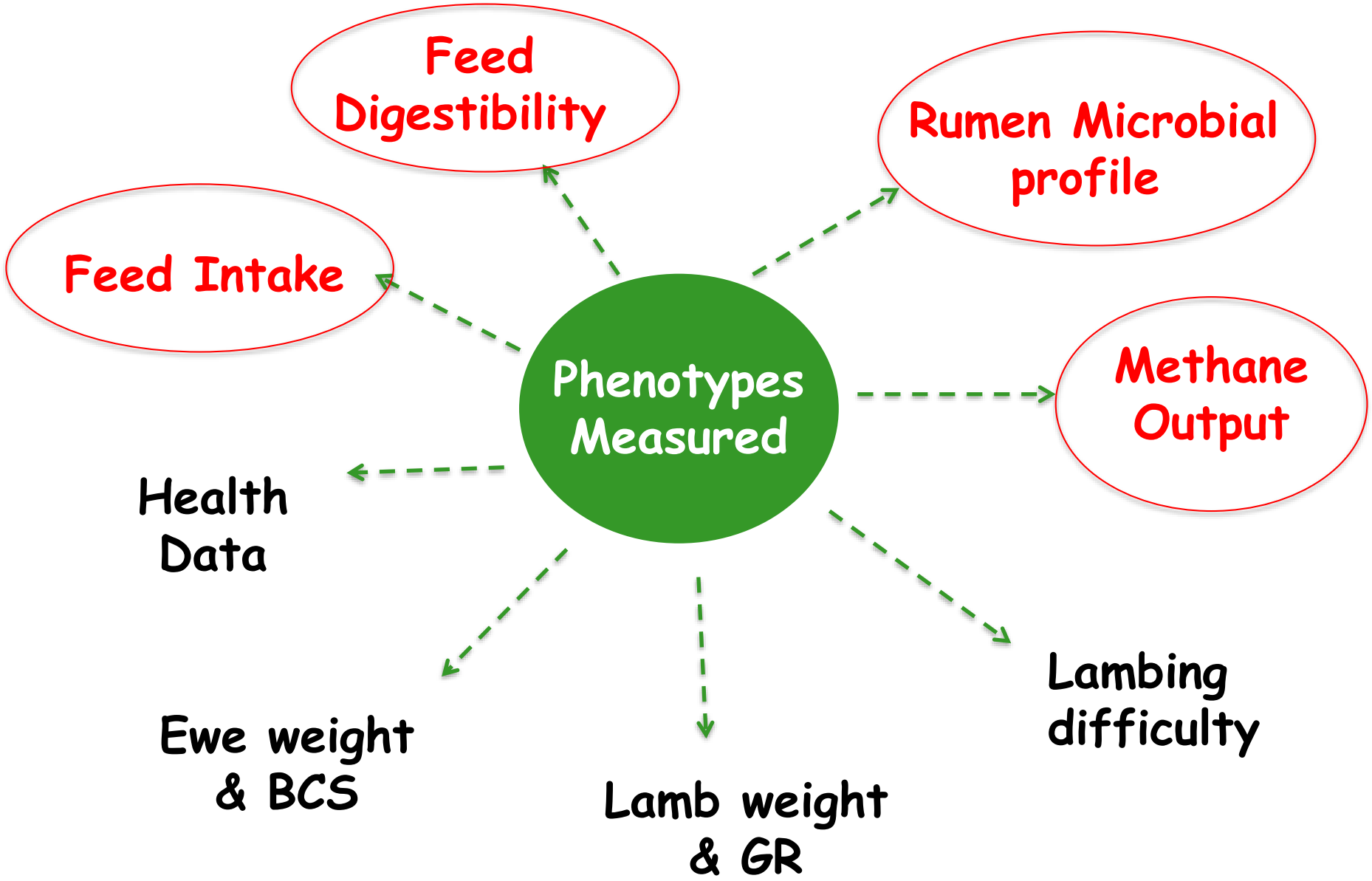
Ireland's GHG Emissions….



GREENBREED

Objective

- To develop, validate and deploy the necessary tools and optimal strategies to achieve sustainable and quantifiable genetic gain through environmental and economic efficiency



Collaboration Research

- PAC Chambers

In Summary

- New ewe efficiency trait under development
  - Information required to derive this trait is routinely available
  - Useful Benchmarking report within and between flocks
- Research phase underway into new traits of importance

Genetic Index Traits

Is the trait important?

Is there data / can data be easily collected?

C ata

Calcul reliability

Cor -index

Make Selection Decisions

Acknowledgements:

- Dept. of Agriculture, Food and the marine
- Teagasc
- Sheep Ireland

Thank you for your attention.

Contact: Fiona.McGovern@teagasc.ie

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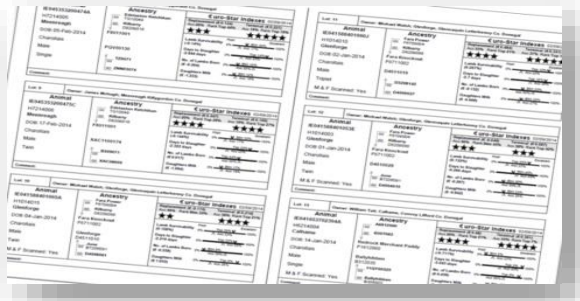
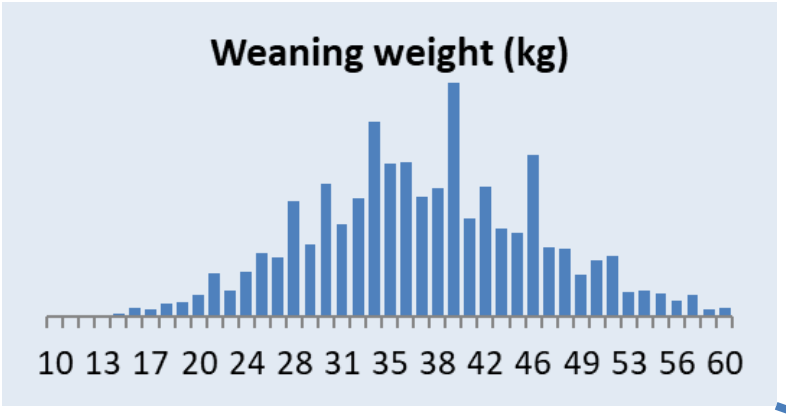
Updating the Genetic Evaluation



T. Pabiou & Sheep Ireland team

Genetic evaluation



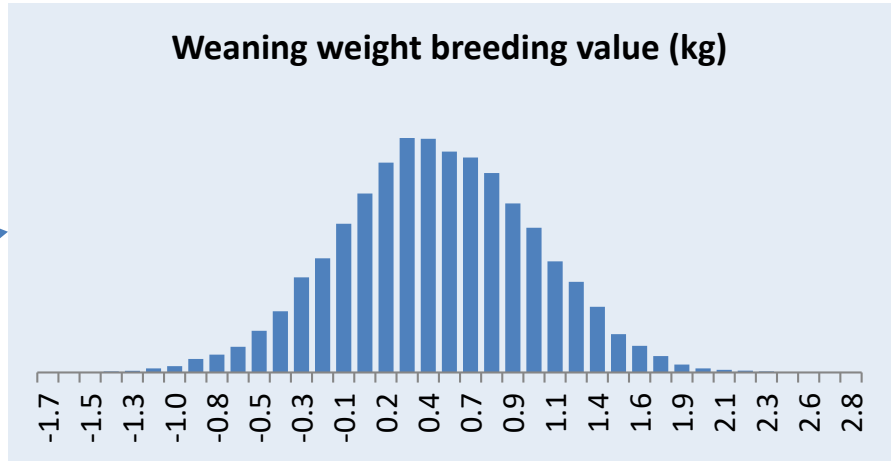
+ lamb info (flock, birth rank, DOB, age at weighing, breed)

+ pedigree info

Sheep Ireland

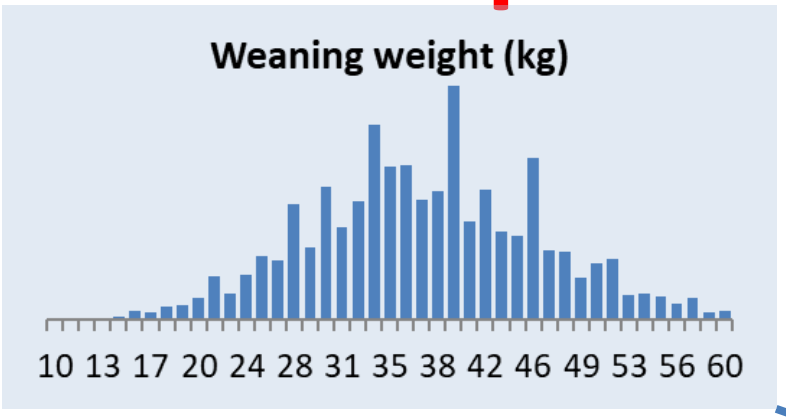
Genetic parameters

Genetic model



Data used: 20,078 Texel pedigree lambs born 2010+

Updating Genetic evaluation



+ lamb info (flock, birth rank, DOB, age at weighing, breed)

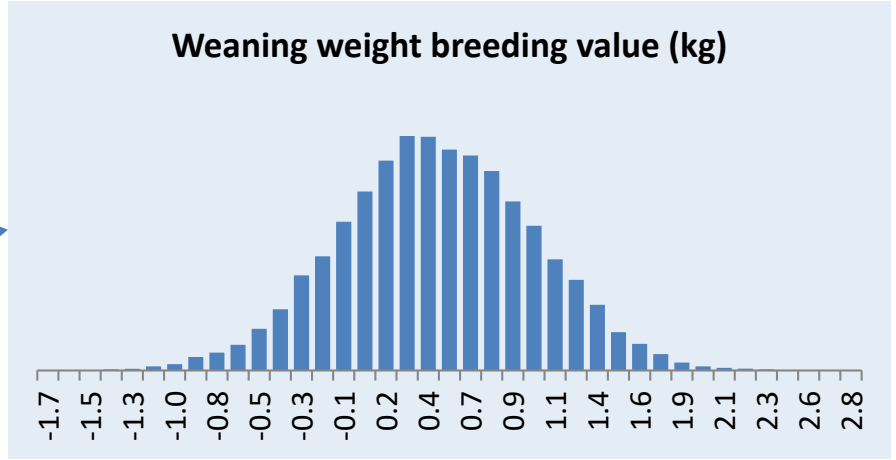
+ pedigree info

Sheep Ireland

Genetic parameters

Genetic model

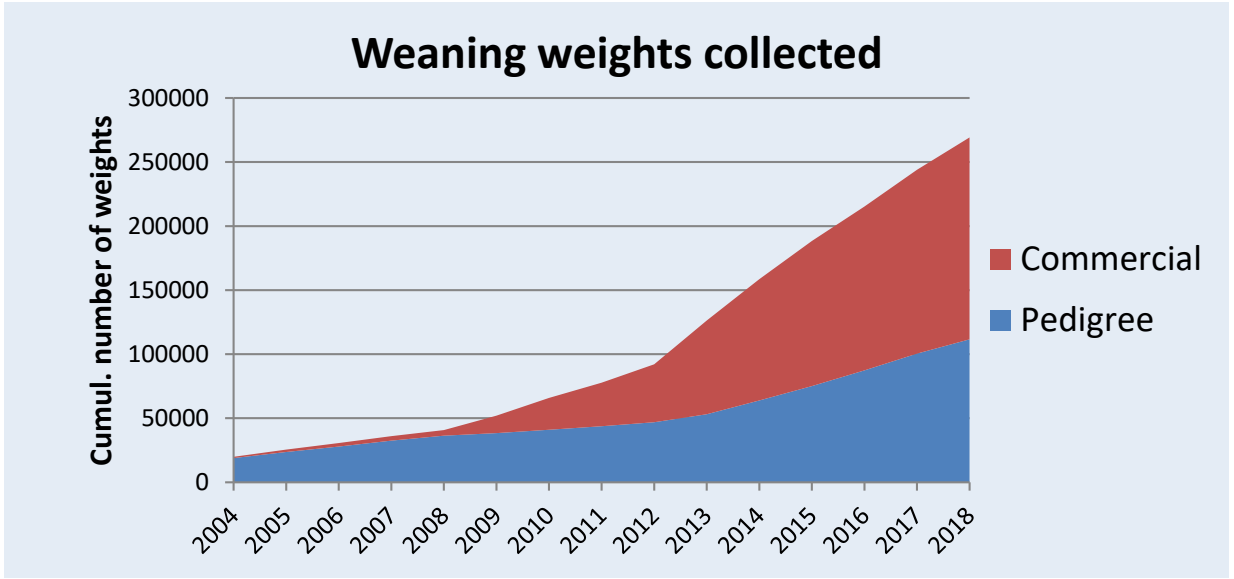
Math



Data used: 20,078 Texel pedigree lambs born 2010+

Why updating genetic evaluations?

- To gain accuracy (1/2)
  - By updating the 'genetic parameters'
    - Snapshot of the population genetic make-up to calculate the **heritability** & **genetic correlations**
    - Largely dependent on the records available



Why updating genetic evaluations?

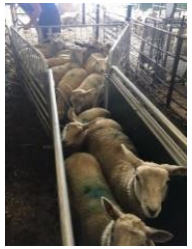
- To gain accuracy (2/2)
  - Updating the genetic model
    - ≥ By using new traits
    - ≥ Example: Days To Slaughter

Math

Current

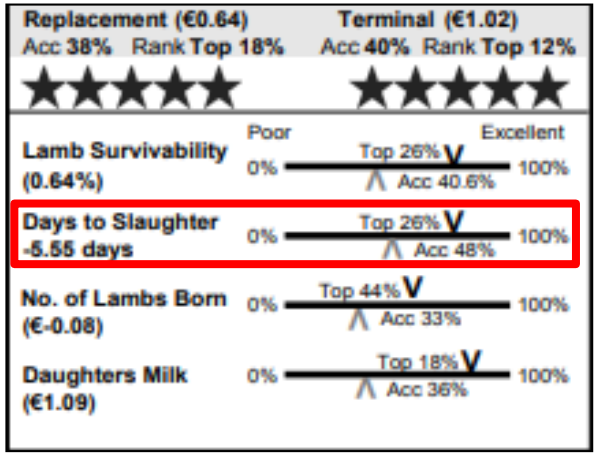
Weight at 150 days
(Days to Slaughter)

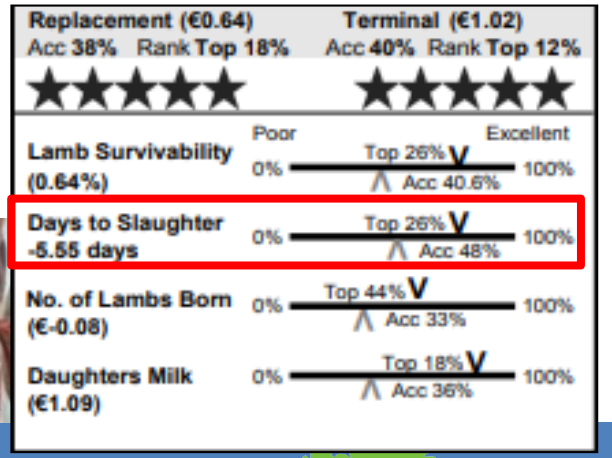
Prediction



New

Age at slaughter



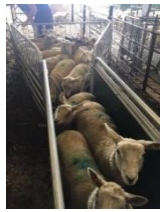


Sheep Ireland evaluations from 2008

2008: First genetic evaluation: weights, lambing, litter size

2009: Distinction between pedigree and commercial weights

Data collection



2016: New health module

2018: Update lambing module

2018: Update economic values

2019 Production module update

- Production module =
  - Live weights
  - Scan for muscle & fat
- Update =
  - Estimation of new genetic parameters
  - Using slaughter data

New genetic parameters

- Main heritability change
  - Heritability = proportion of phenotypic variance explained by the genetic make-up

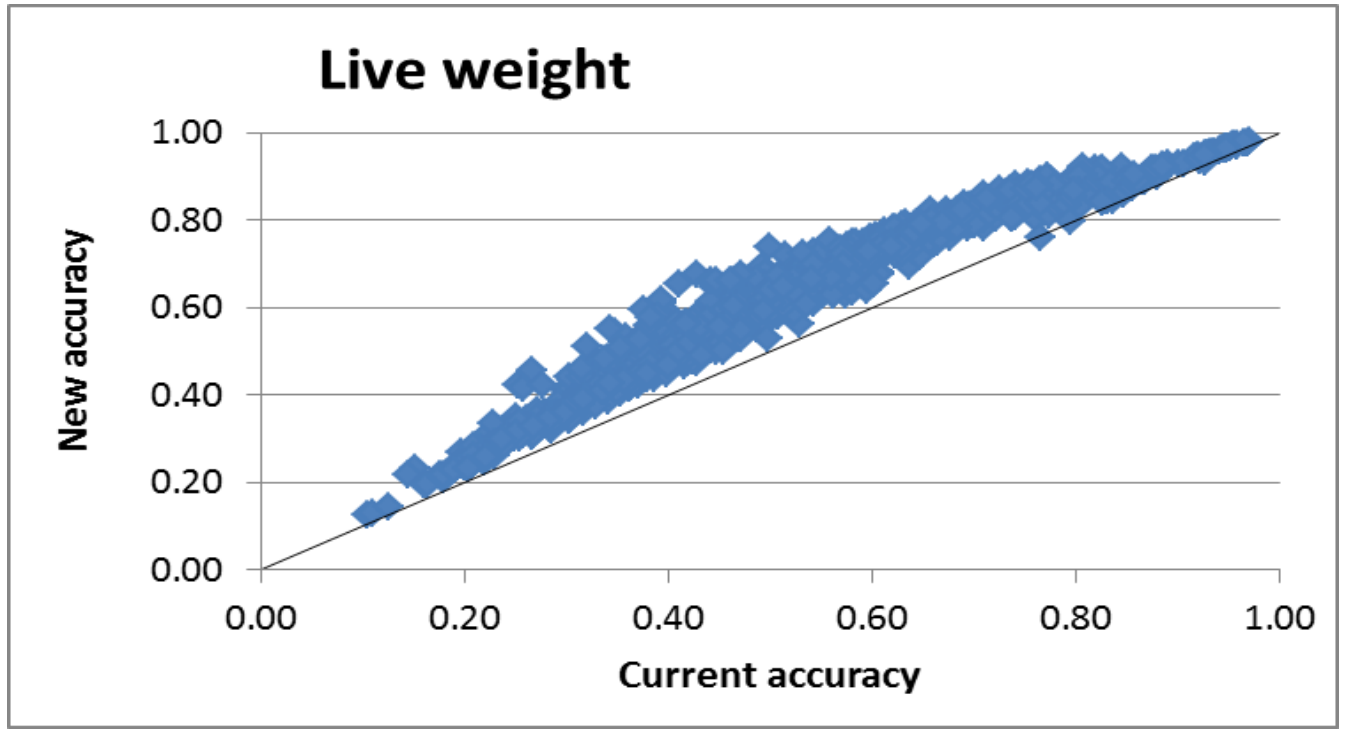
Heritability estimates	Ram effect (direct)		Ewe effect (maternal)	
	Current	**New**	Current	**New**
Live weight @ 40day (kg)	25%	**23%**	10%	**15%**
Live weight @ weaning (kg)	25%	**23%**	10%	**14%**
Live weight @ 150 days(kg)	20%	**32%**	12%	**10%**
Muscle scan (mm)	16%	**31%**	-	**4%**
Fat depth (mm)	11%	**29%**		**10%**
Ewe mature weight	15%	**20%**	-	**-**

- Higher heritability = increase accuracy

Increase in accuracy

- Example: live weight at 150 days

Average accuracy increase across 2,742 active rams*: **+10%**

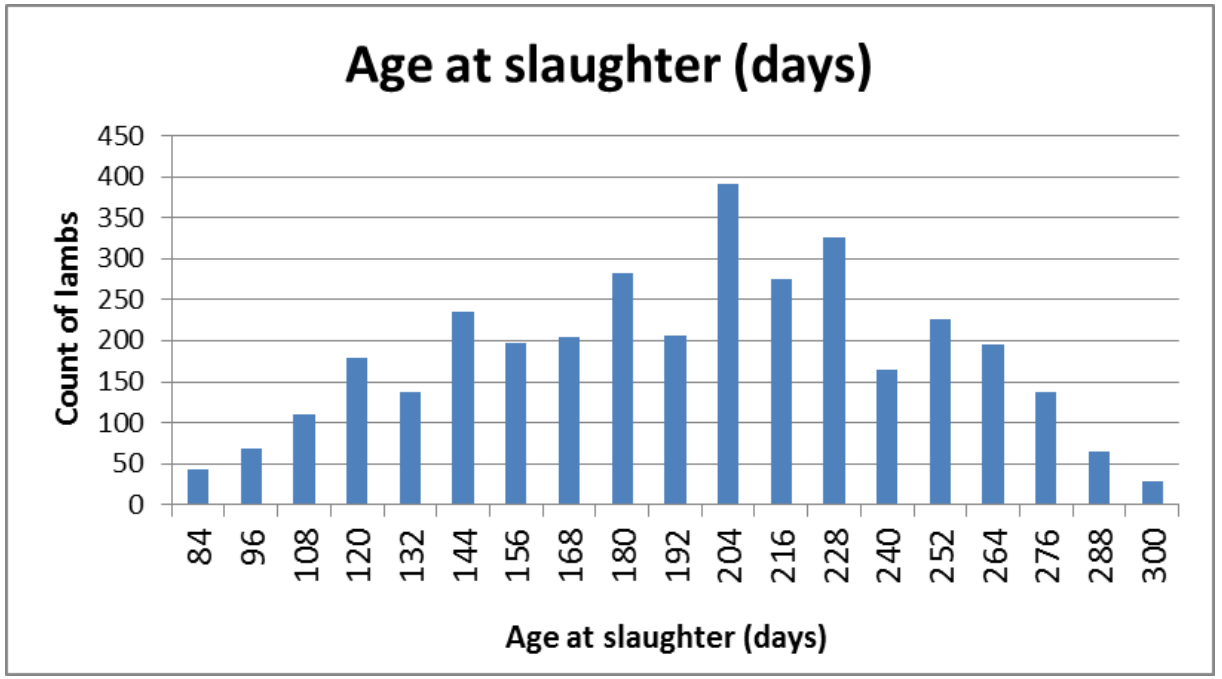


Min. increase = +0%
Max. increase = +21%

*Active ram = ram with progenies in last 3 years

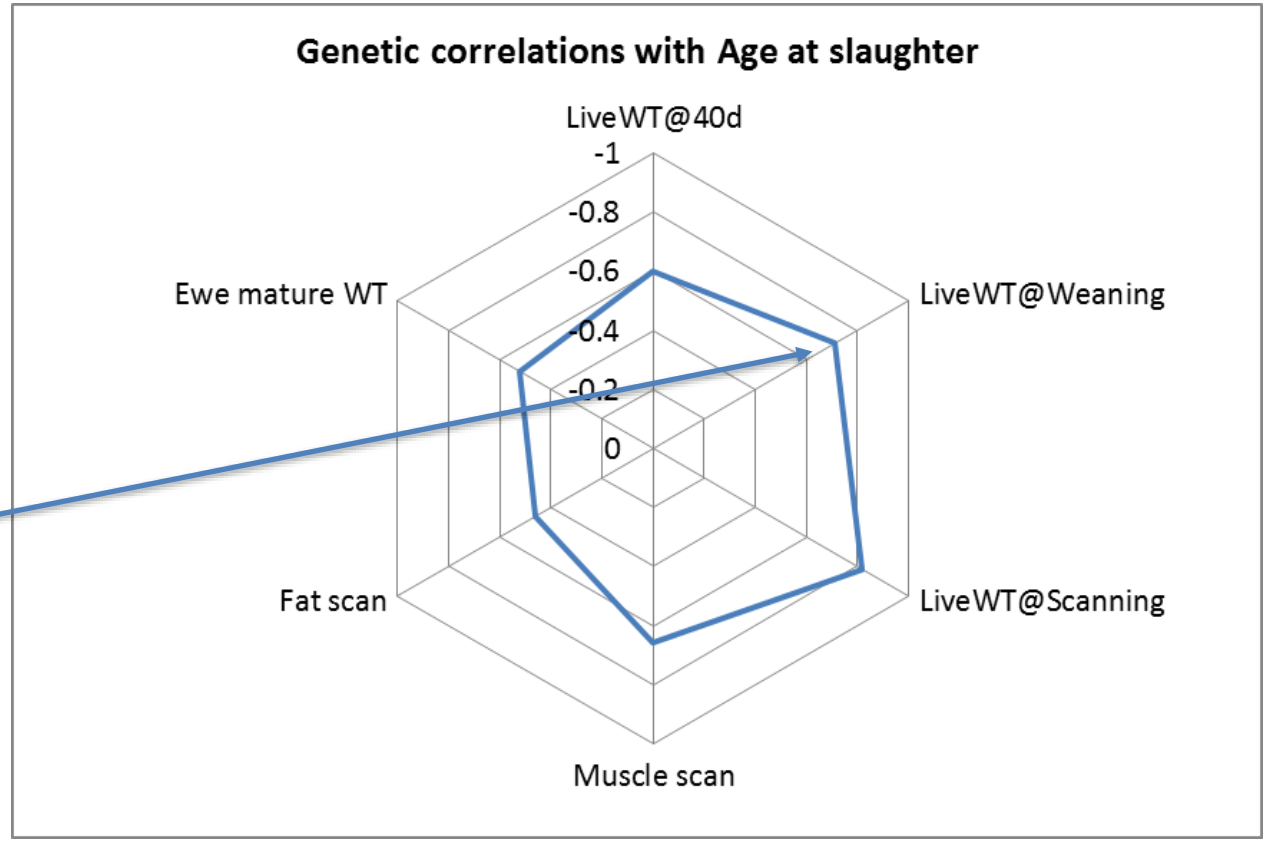
Using Slaughter data

- Age at slaughter phenotypes
  - 3,504 records
  - Collected from CPT farms 2016 ⇦⇨ 2017
  - Pre-adjusted to 21kg carcass weight



Genetics of age at slaughter

- Heritability
  - direct 25% maternal 7%
- Association with other traits



Example: correlation between LiveWT@Weaning with Age at slaughter = -0.71.
Therfore the heavier the lamb at weaning, the quicker it'll go to slaughter

Validation

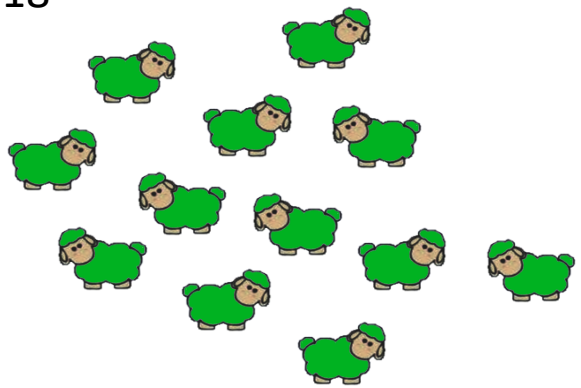
- To check the increase in genetic gain
- By comparing phenotypes of lambs against their parent average

Parent average

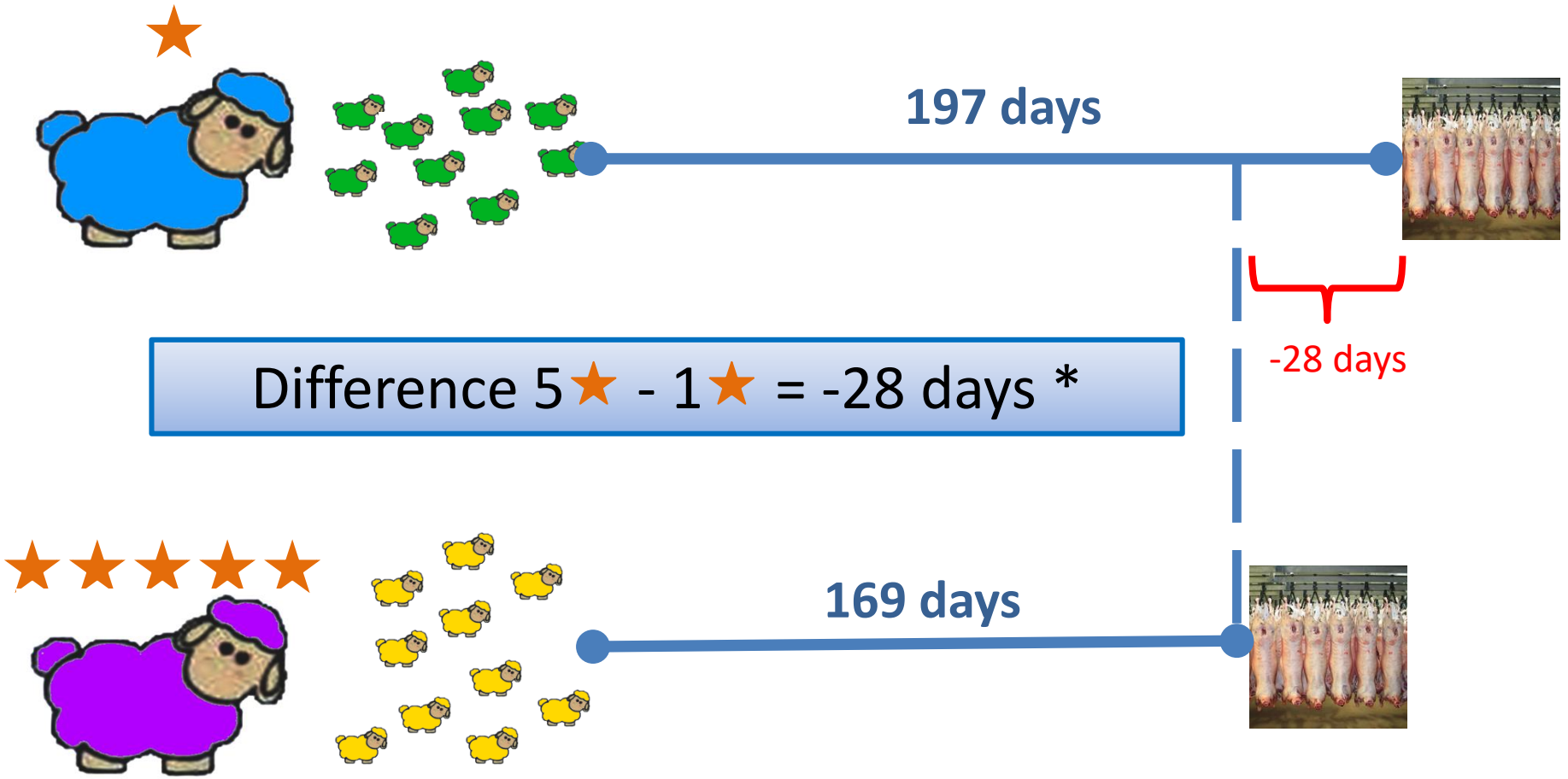
X

€uroStars	20/10/2016
Replacement (€0.63)	Terminal (€0.91)
Acc 42% Rank Top 41%	Acc 43% Rank Top 11%
★★★	★★★★★

Phenotypes recorded 2017 & 2018



Age at slaughter by ★



*Bootstrap 2000 samples x 6000 animals: S.D. = 12.3 days

Conclusion

- Current genetic evaluation has 4 modules
  - Production, Lambing, Litter size, Health
  - 2 / 4 have been updated recently
- Production module can be updated for 2019
  - Better accuracy
- Litter size module research started

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Can we breed healthier sheep?

Breeding as a strategy to improve sheep health

Áine O' Brien[12], Nóirín McHugh[1], Alan Bohan[3], Eamon Wall[4], Thierry Pabiou[4], Kevin McDermott[4], Séan Fair[2], Donagh Berry[1]

[1]*Teagasc, Moorepark;* [2]*University of Limerick;*
[3]*Teagasc, Athenry;* [4]*Sheep Ireland, Bandon*

Aine.OBrien@teagasc.ie

Sheep Ireland
www.sheep.ie

teagasc

What do we know?

Cost €5 million per year

Perplexed at lameness

But…

What is the prevalence?

What is the cost?

Is there a difference between lambs and adults?

Largest individual reason for culling ewes

Can we actually breed for health?

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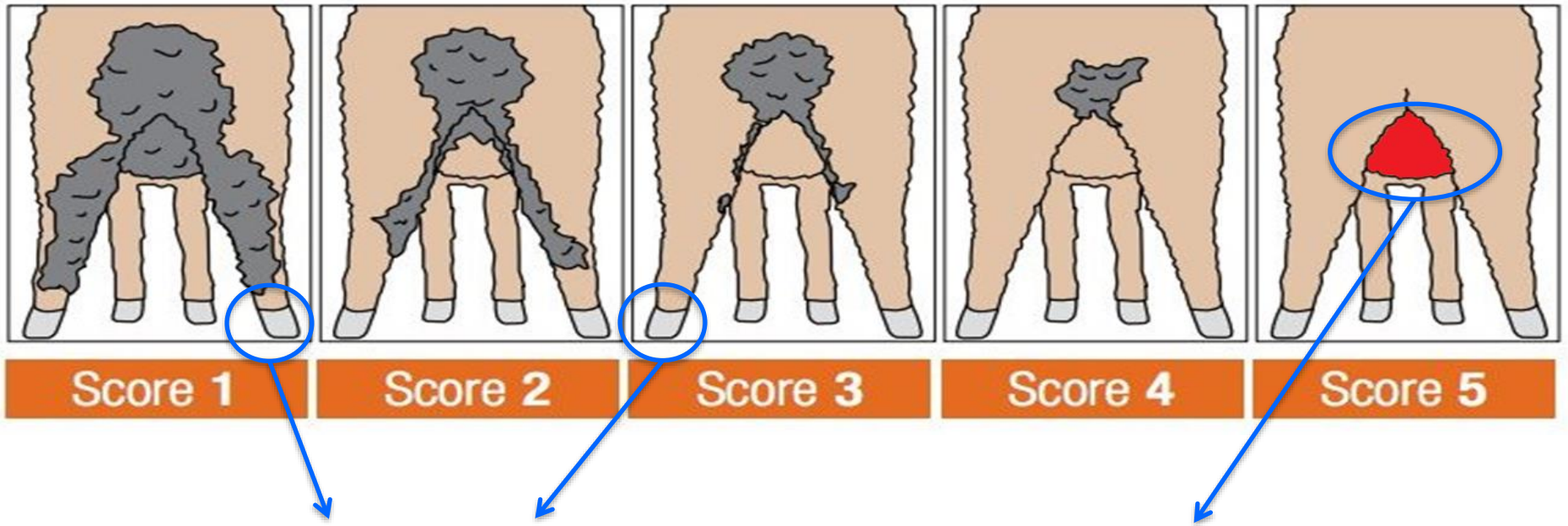
Phenotypes

Dagginess



Lameness

- No = not lame
- Yes = any sign of lame

Mastitis

- No = no evidence of mastitis
- Yes = evidence of (historic) mastitis

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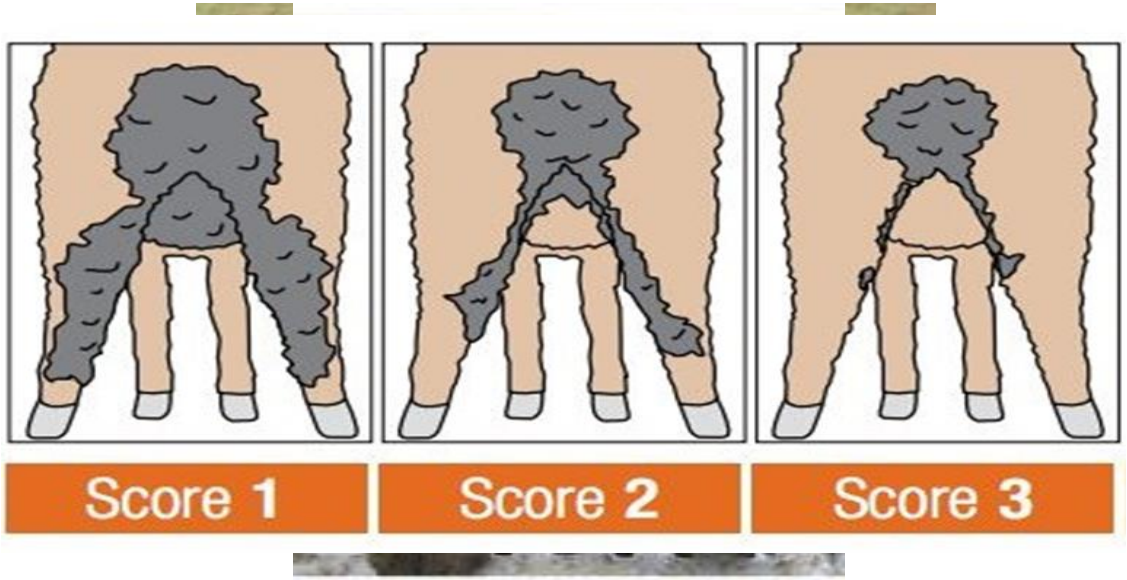
Current prevalence

		Adults	Lambs
Dagginess	Soiled	30.2%	22.22%



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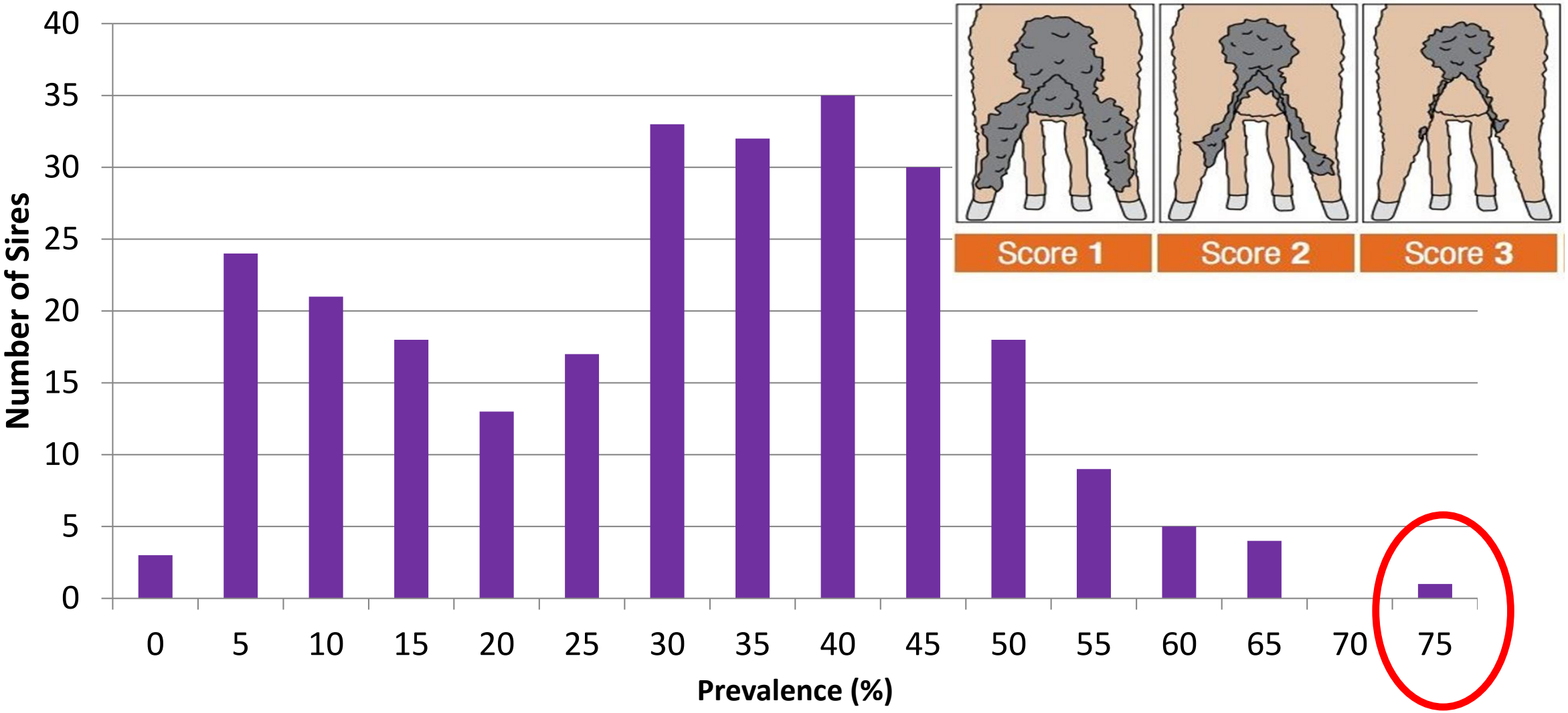
Breeding goal

- For any trait to be included in a breeding goal – 3 criteria
  1. Socially or economically important
  2. Exhibit genetic variation
  3. Measurable on a large scale
     - Or correlated with a trait that is

Sire prevalence - dagginess



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Sire prevalence - lameness

Number of sires

30
25
20
15
10
5
0

0 5 10 15 20 25 30 35 40 45

Prevalence (%)

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Health data

39,315
observations

264 flocks

Ewes
8,046

Lambs
31,269

5 main breeds

Belclare

Charollais

Texel

Suffolk

Vendeen

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Heritability estimates

Dagginess: 14% - 15%

Lameness: 6% - 12%

Mastitis: 4%

Dagginess in lambs had a maternal heritability of 5%

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Breeding goal

- For any trait to be included in a breeding goal – 3 criteria
  1. Socially or economically important
  2. Exhibit genetic variation
  3. Measurable on a large scale
     - Or correlated with a trait that is

Health index

Trait	Terminal	Replacement
Days to slaughter	34.10%	10.75%
Carcase conformation	6.60%	2.08%
Carcase fat	12.68%	4.00%
Single lambing difficulty	2.11%	0.76%
Multiple lambing difficulty	1.14%	0.41%
Lamb survival	42.12%	15.21%
Health – Dagginess	1.15%	0.17%
Health - Lameness lamb	0.11%	0.02%
Health - Lameness ewe		0.04%
Maternal days to slaughter		10.96%
Maternal carcase conformation		2.53%
Maternal carcase fat		4.87%
Ewe mature weight		14.13%
Maternal lamb survival		20.49%
Maternal single lambing diff		0.21%
Maternal multiple lambing diff		0.11%
Number of lambs born		13.26%

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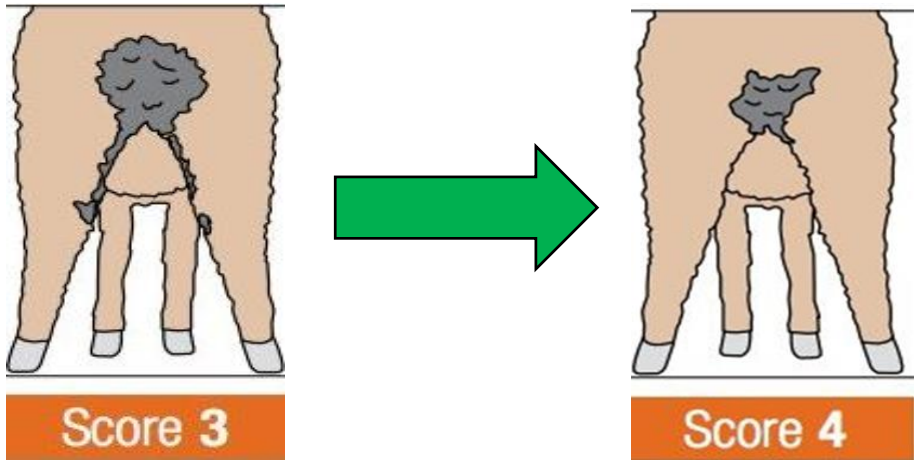
Health index

Trait	Economic value	Relative emphasis (%)	
		Terminal	Replacement
Dagginess	**-€0.34 (score)**	**1.15**	**0.17**
Lameness – lamb	-€0.08 (%)	0.11	0.02
Lameness - ewe	-€0.24 (%)		0.04

100 lambs



€0.34

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Health index

Trait	Economic value	Relative emphasis (%)	
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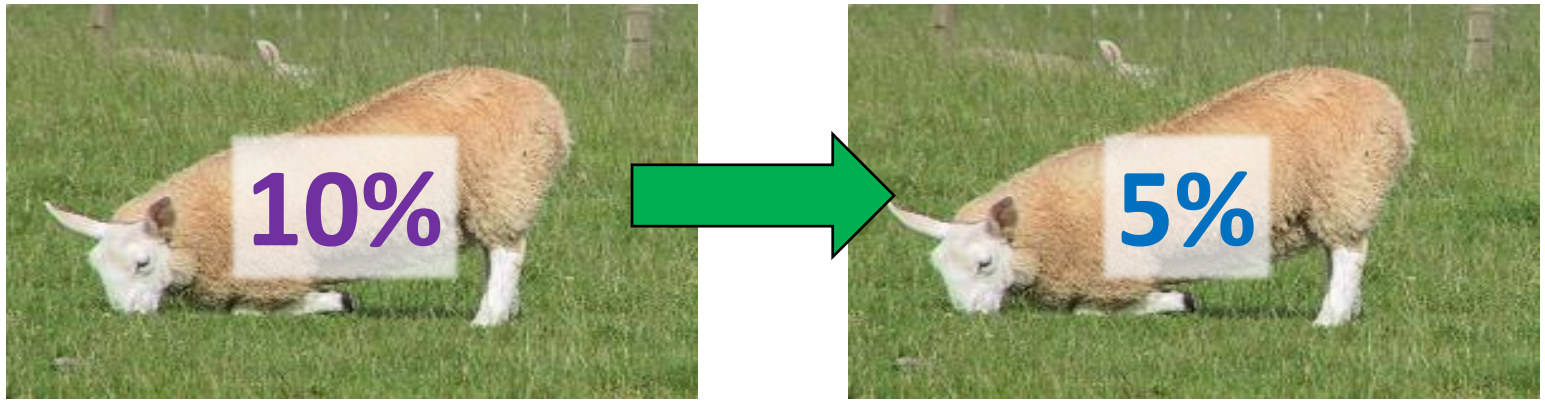
Dagginess	-€0.34 (score)	1.15	0.17
Lameness – lamb	-€0.08 (%)	0.11	0.02
Lameness - ewe	**-€0.24 (%)**		**0.04**

100 ewes



€1.20

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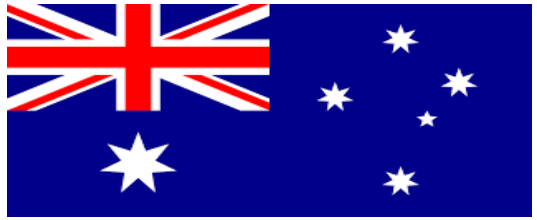
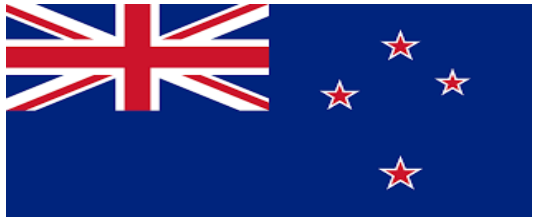
Elsewhere…



Worm FEC



Worm FEC
Facial Eczema
Dagginess

Worm FEC

Lameness
Dagginess

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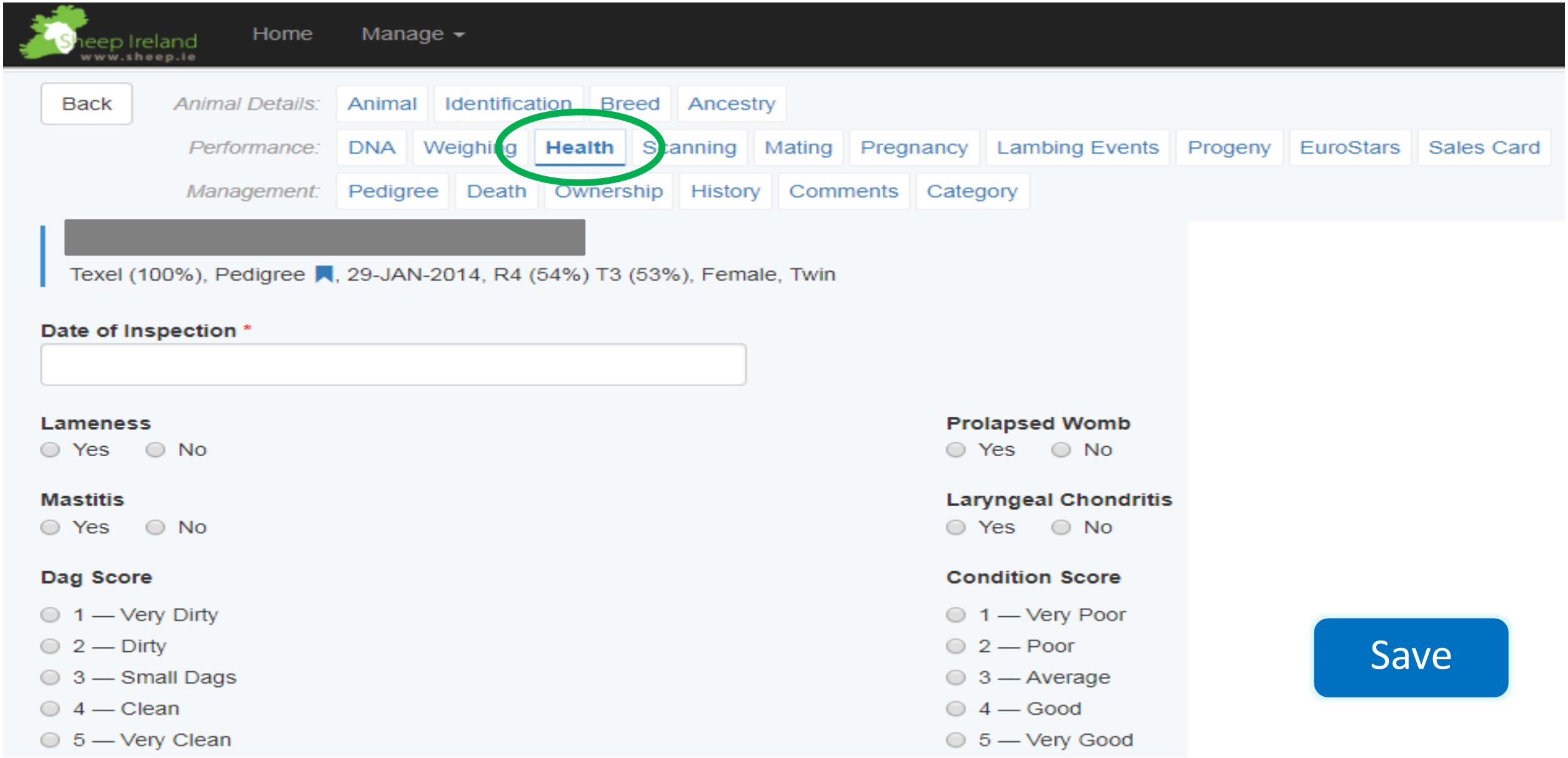
Recording health



In conclusion…

Can we breed for healthier sheep?

We have all the tools so why not?

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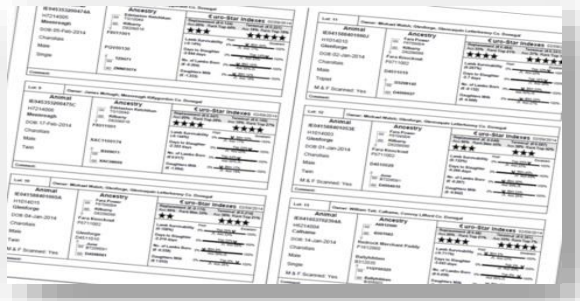
Improving the Rate of Genetic Gain

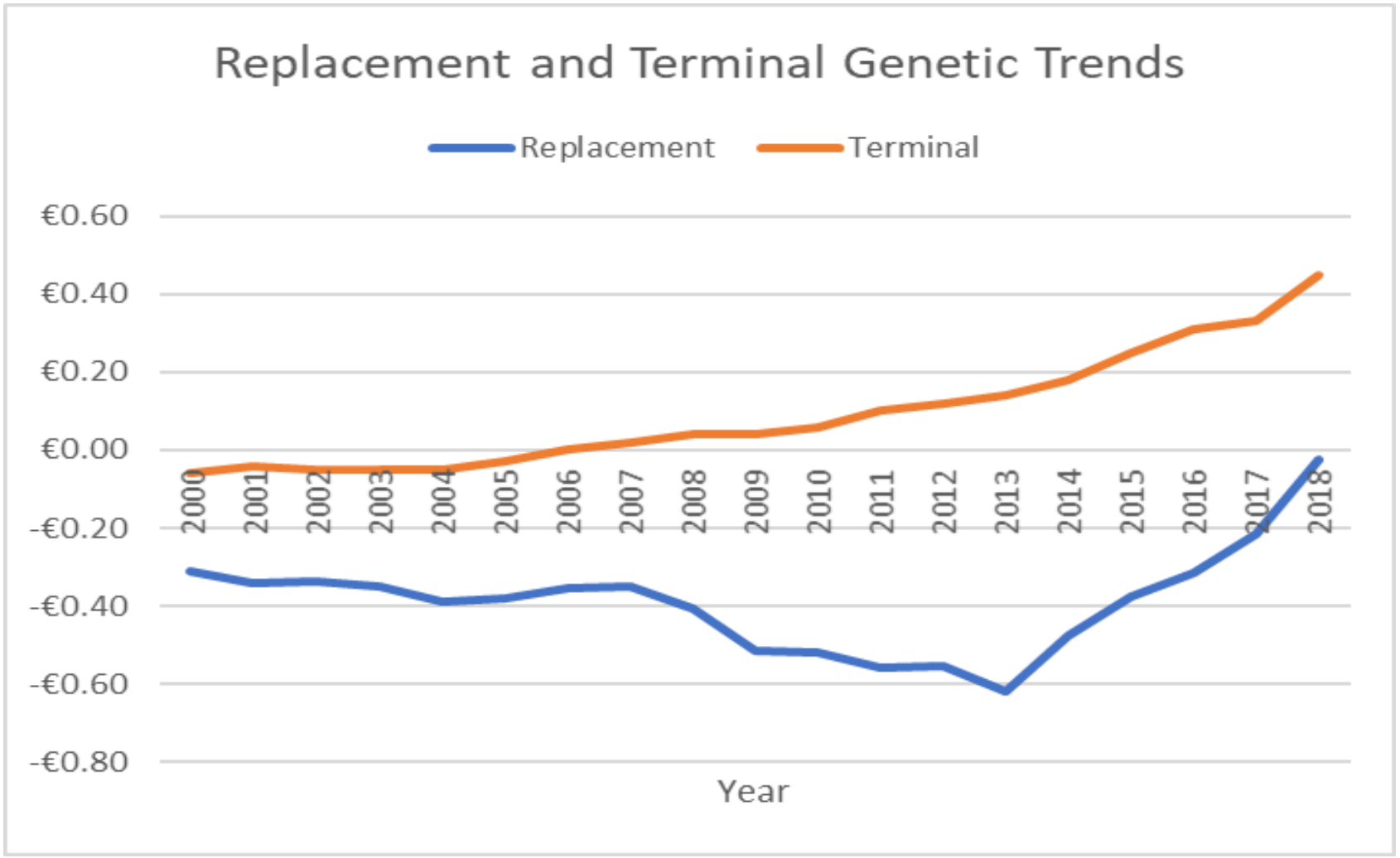
What factors are involved?



Kevin McDermott, Sheep Ireland

Genetics Conference 2018

Genetic Gain

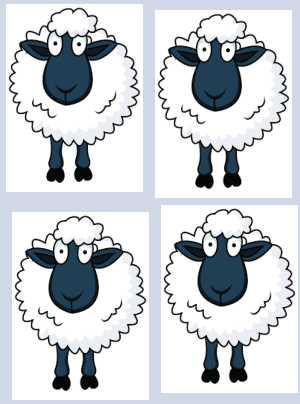
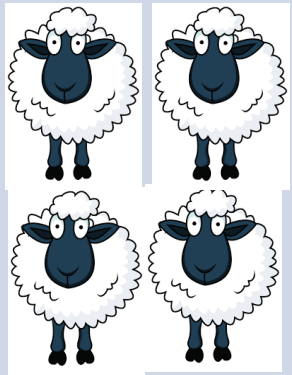
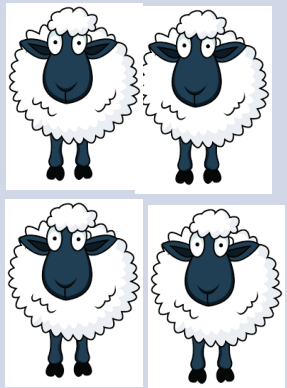
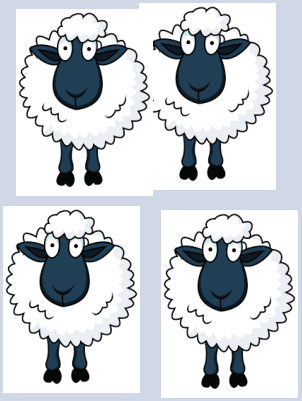
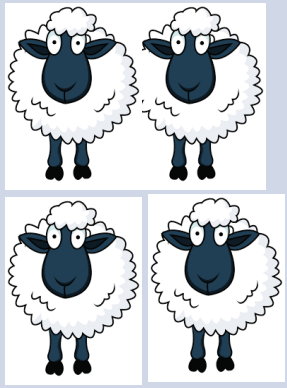


Genetic Gain

Genetic Gain = Intensity x Accuracy x Variation
Generation Interval

$$\Delta G = \frac{i * r_{IH} * \sigma_A}{L}$$

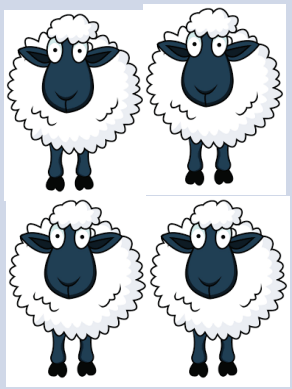
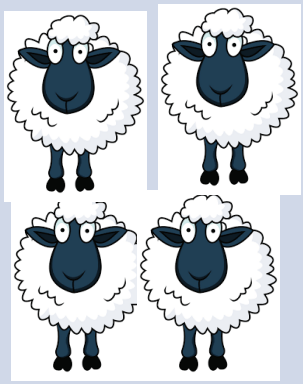
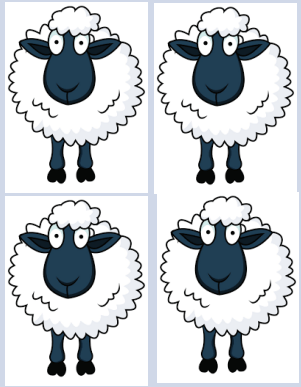
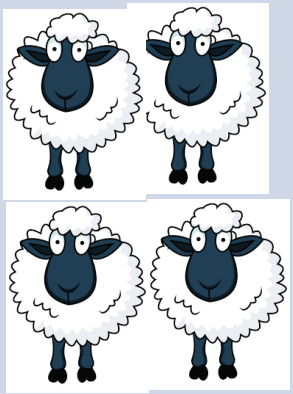
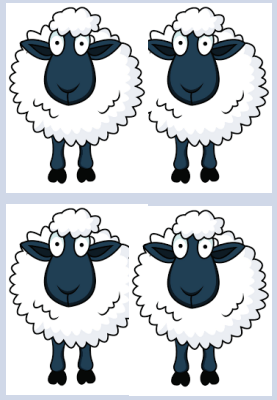
Genetic Gain = **Intensity** x Variation x Accuracy
Generation Interval

1 Star	2 Star	3 Star	4 Star	5 Star
				

Average **3 Star** Ewe lambs

Low Intensity Selection

Genetic Gain = **Intensity** x Variation x Accuracy / Generation Interval

1 Star	2 Star	3 Star	4 Star	5 Star
				

Average **4.5 Star** Ewe lambs

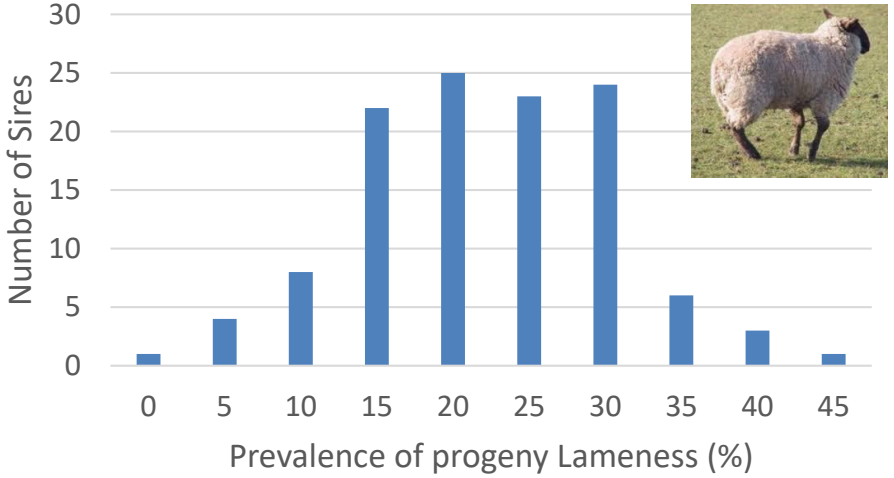
High Intensity Selection

Genetic Gain = **Intensity** x Variation x Accuracy
Generation Interval

- The rate of Intensity is controlled by breeders
  - LambPlus Sale
  - STAP
  - Education & Awareness
  - Catalogues
  - Ram Search

Genetic Gain = Intensity x **Variation** x Accuracy / Generation Interval

- Must be Heritable
- Must have Variety
- To improve a trait you must record it



- Use multiple sires will help increase variation

Genetic Gain = Intensity x Variation x **Accuracy**

Generation Interval

- The correlation between the true and estimated genetic index.
  - Genomics
  - Evaluation updates
  - New traits (eg, Health, Age at Slaughter)
  - Parentage Verification
  - Good Data

viGen

CPT

viData

DQI

Genetic Gain = Intensity x Variation x Accuracy

Generation Interval

- Average age of your Flock (Ewes + Rams)
- Old reliable vs New Hot shot
  - CPT
  - RamPlus

Key Message

- Set a breeding objective
  - Select Sires with higher EBV's than the flock average
- Use Multiple Sire
  - Different bloodlines
- Record lots of data
  - Especially the traits with poor heritability

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Putting the €uro Stars into Action

David Coen

Salesian Agricultural College

Co. Limerick

Building the Foundations

Breeding sheep for over 60 years

Texel, Suffolk and Charollais

Belclare rams 2015

200 Breeding ewes (122 mature ewes & 88 ewe lambs)

All grass based system

Building the Foundations

Joined Sheep Ireland 2016

Started off with very low levels of data collection

Wanted to find out best and worst performers in the flock

Ewes profiled based on breed, age, weight, BCS

October 2016 - AI'd ewes to CPT sires

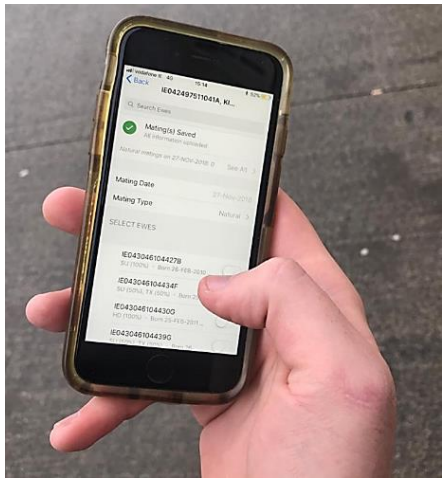
- Gave a platform to assess ewes genetics against other flocks
- Improved accuracy's

Being open and collecting the right data

Sheep Ireland App makes recording easier and more efficient

Loads of new technologies make data recording easier

Opportunity to take advantage of new enforcement of electronic tagging



Selecting Replacement Females

Replacements are sourced from Ewe lambs

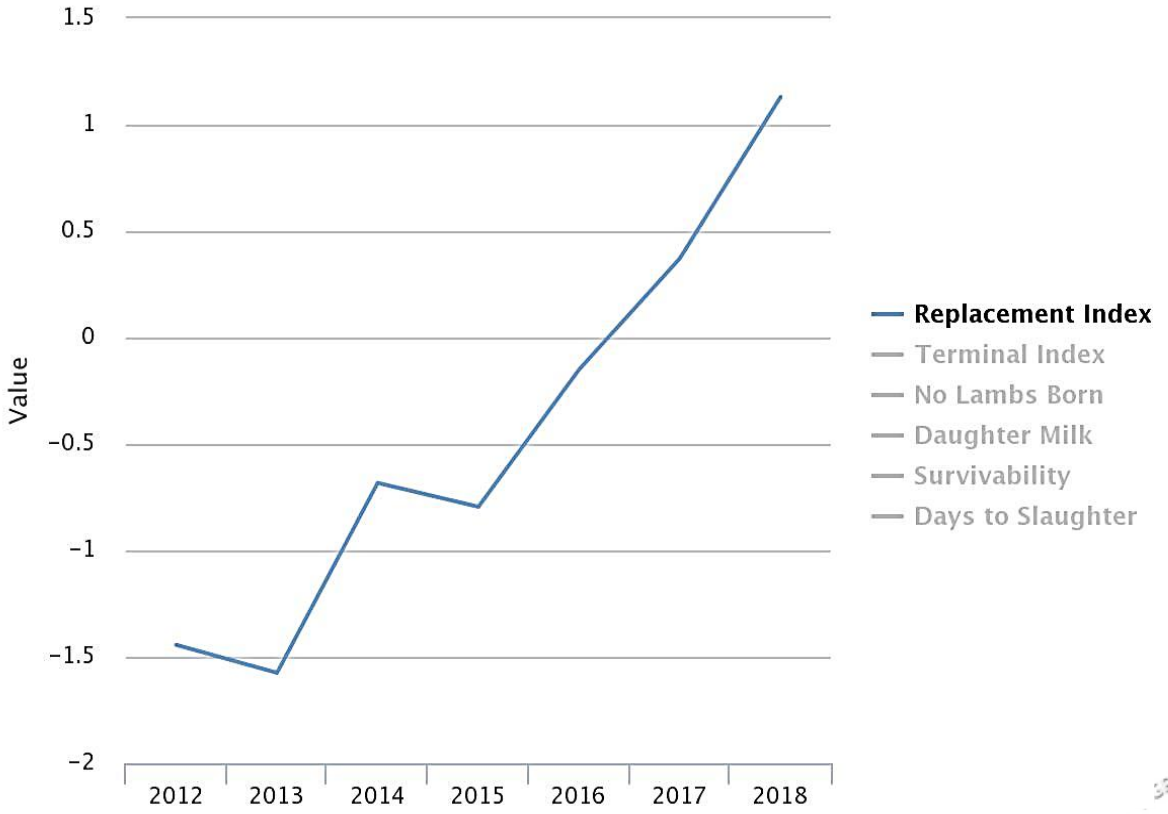
Genetically

Ewe lamb chosen on Replacement Index higher than mature ewes average

2018 - €0.195 with 40% acc

(If no change)

2019 - €0.915 with 42% acc



Selecting Replacement Females

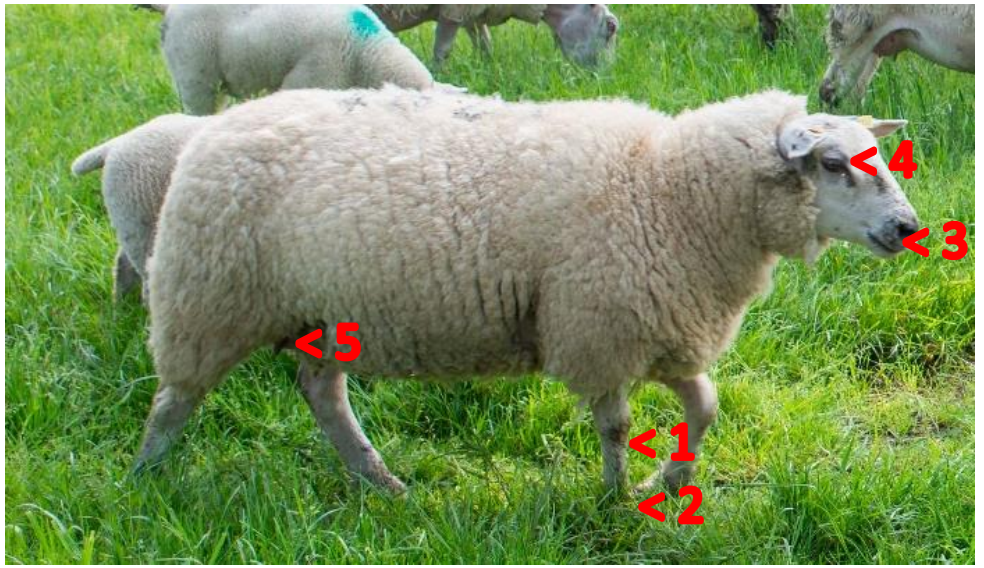
Physically

Weight - 50 Kgs on Average

Body Condition of 3.5 – 4.5

Physical examination

1. Legs
2. Feet
3. Teeth
4. No signs of ill health
5. Teats



Kilflynn Amigo MN1511041

Owner: Salesian Ag College (DQI: 93%); Pallaskenry Agricultural College, Pallaskenry, Co. Lim
Breeder: Michael Neenan; Dromakee, Kilflynn, Tralee, Co. Kerry

Animal

IE042497511041A
MN1511041 *(CPT Sire)*
Kilflynn Amigo

DOB: 27-Jan-2015
Belclare
Male
Triplet

M & F Scanned: Yes

Ancestry

PD102179
GS
GD **TF1001274**

TF1201503

TF1201520

WD100953
GS
GD **TF091167**

€uroStars 14/11/2018

Replacement (€4.86)
Acc 78% Rank Top 2%
★★★★★

Terminal (€2.01)
Acc 81% Rank Top 1%
★★★★★

	Poor	Excellent
Lamb Survivability (2.06%)	0% — Top 2% V, Acc 77% ^	100%
Days to Slaughter -6.02 days	0% — Top 6% V, Acc 94% ^	100%
No. of Lambs Born (€0.49)	0% — Top 26% V, Acc 73% ^	100%
Daughters Milk (€3.02)	0% — Top 3% V, Acc 88% ^	100%

Comment:

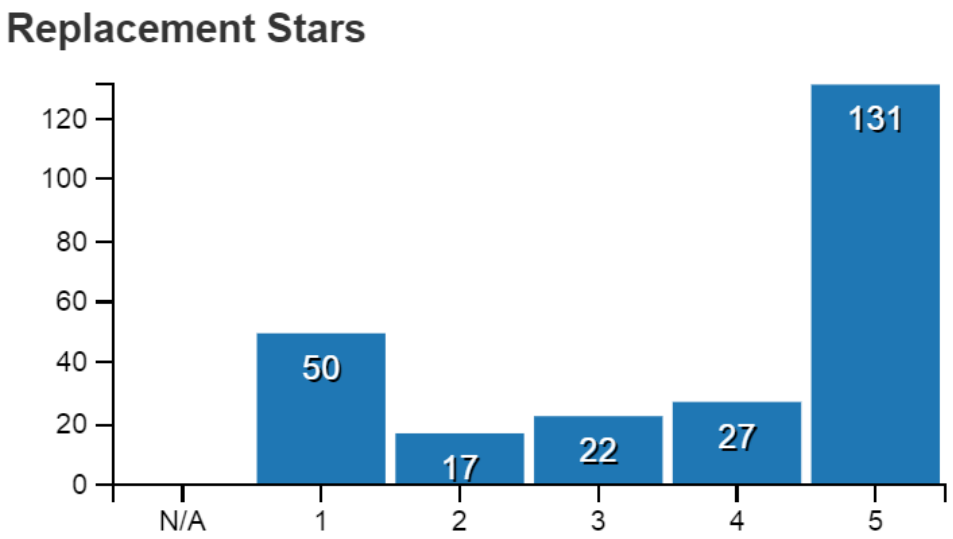
To think his superior genetics could have been lost!

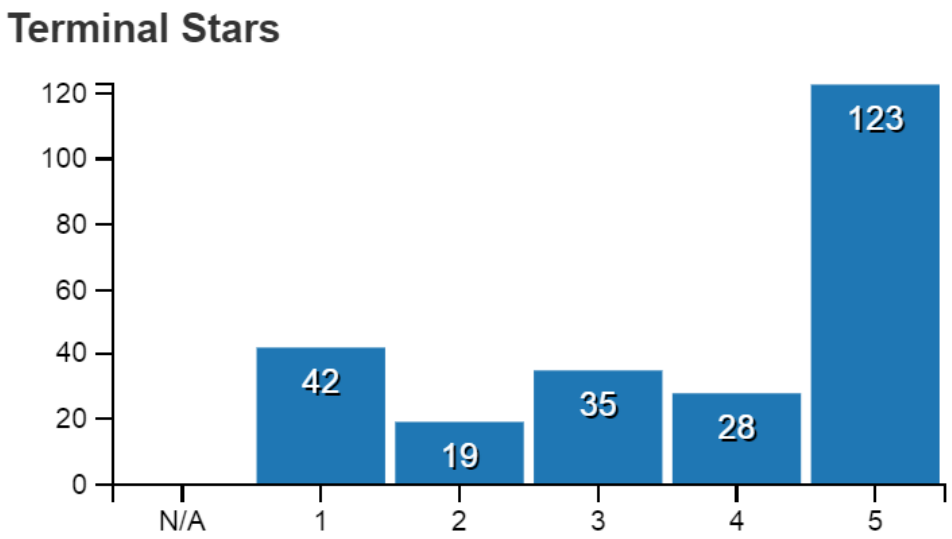
5 Star Rams making a difference to Ewe Genetics

Flock gain since 2015

€1.79 gain on the Replacement Index

€0.97 gain on the Terminal Index

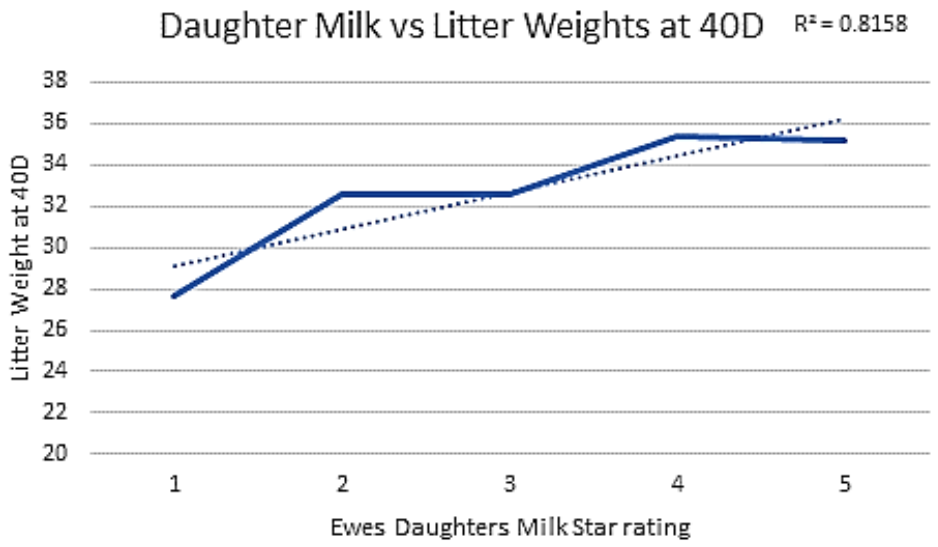


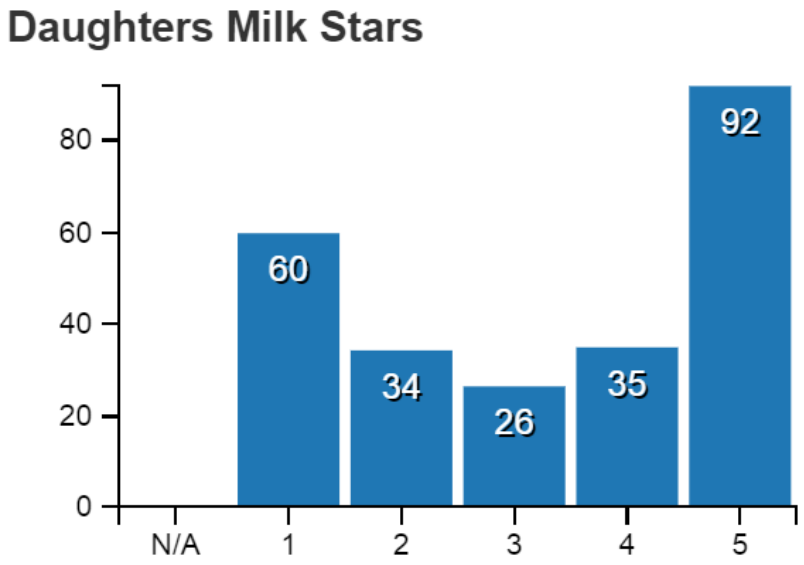


5 Star Rams making a difference to Ewe Genetics

2018 season

Average litter weight at 40 days of age vs Ewes Daughters Milk star rating





5 Star Rams making a difference to Ewe Genetics

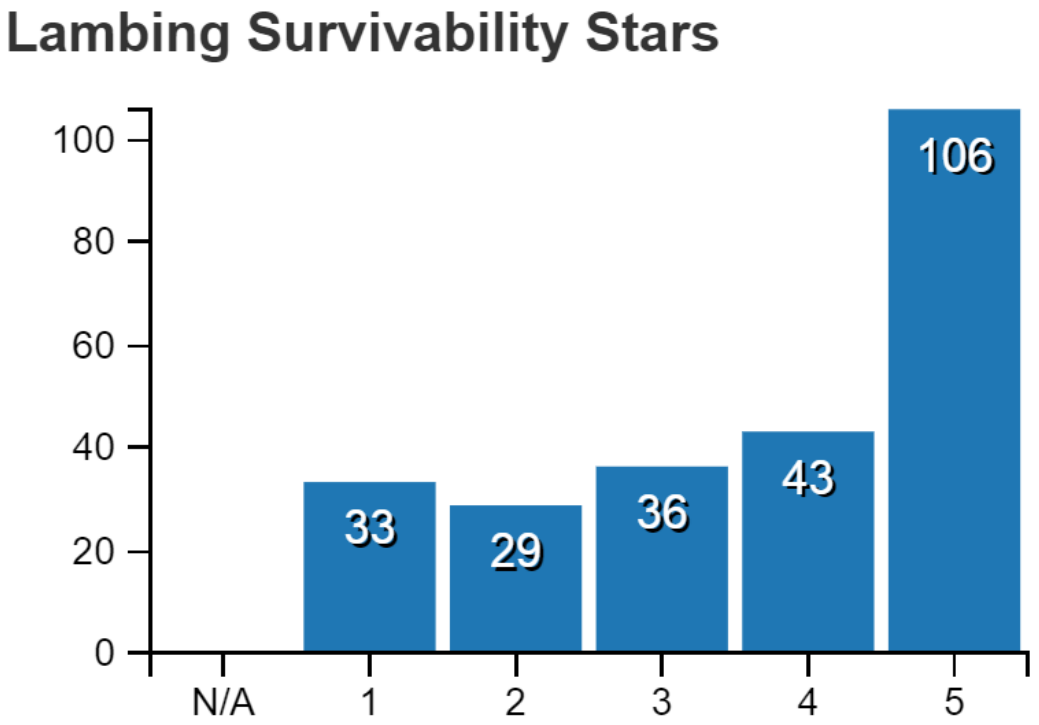
Focus on lamb survivability

% Lamb Morality

2016 – 13.03%

2017 – 11.75%

2018 – 9.49%



Genetic Evaluation is the way forward

Salesian Ag College
We strive to be the best in our field
Sheep, Beef or Dairy
We believe Genetic Evaluations will help get us there

Thank You

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Genetics Conference 2018

Sheep Ireland
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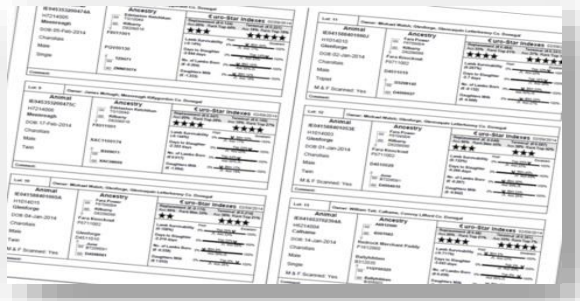
#ISGC18

SusSheP

(Sustainable Sheep Production)



Eamon Wall – Sheep Ireland

Introduction

Overall aim of SusSheP

SusSheP

'To increase the sustainability and profitability of European Sheep Production by addressing key industry focused problems'

European Research Area Network Research Project

Introduction

- Cross country collaboration

- **Ireland** – University of Limerick, Teagasc & Sheep Ireland
- **UK** – SRUC, Maternal Sheep Group
- **France** – INRA
- **Norway** – Norwegian University of Life Sciences, NMBU, NSG

Introduction

- Three major targets (Work Packages)

- Labour Input and Carbon Hoofprint
- Factors affecting Sheep AI success
- Ewe Longevity

Labour Input and Carbon Hoofprint

- To characterise labour input and carbon hoofprint of different sheep production systems

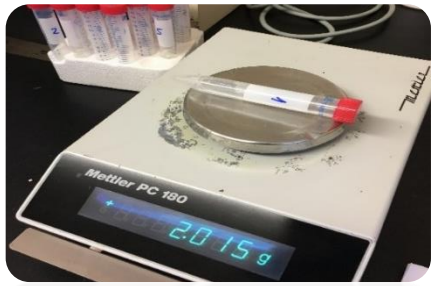
Factors affecting Sheep AI success

- Investigate breed differences for AI success
- Explore physiology of the cervix (across 6 breeds)
- Significant variation exists in cervix makeup
  - Length, internal ‘rings’ & structure of opening

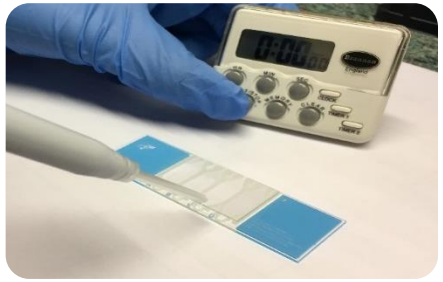
Factors affecting Sheep AI success

- Investigate breed differences for AI success
- Cervical mucus assessments – viscosity, weight & colour

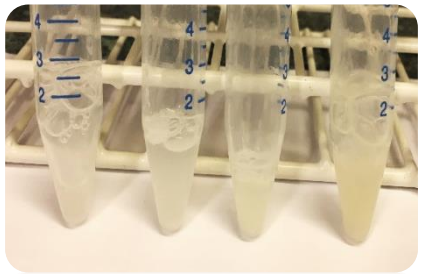
Weight



Viscosity



Colour



Ewe Longevity

- The missing link for Sheep Ireland
  - Economically important
  - Environmentally important
  - Missing from Sheep Ireland genetic evaluations
  - Poor data recording for this trait

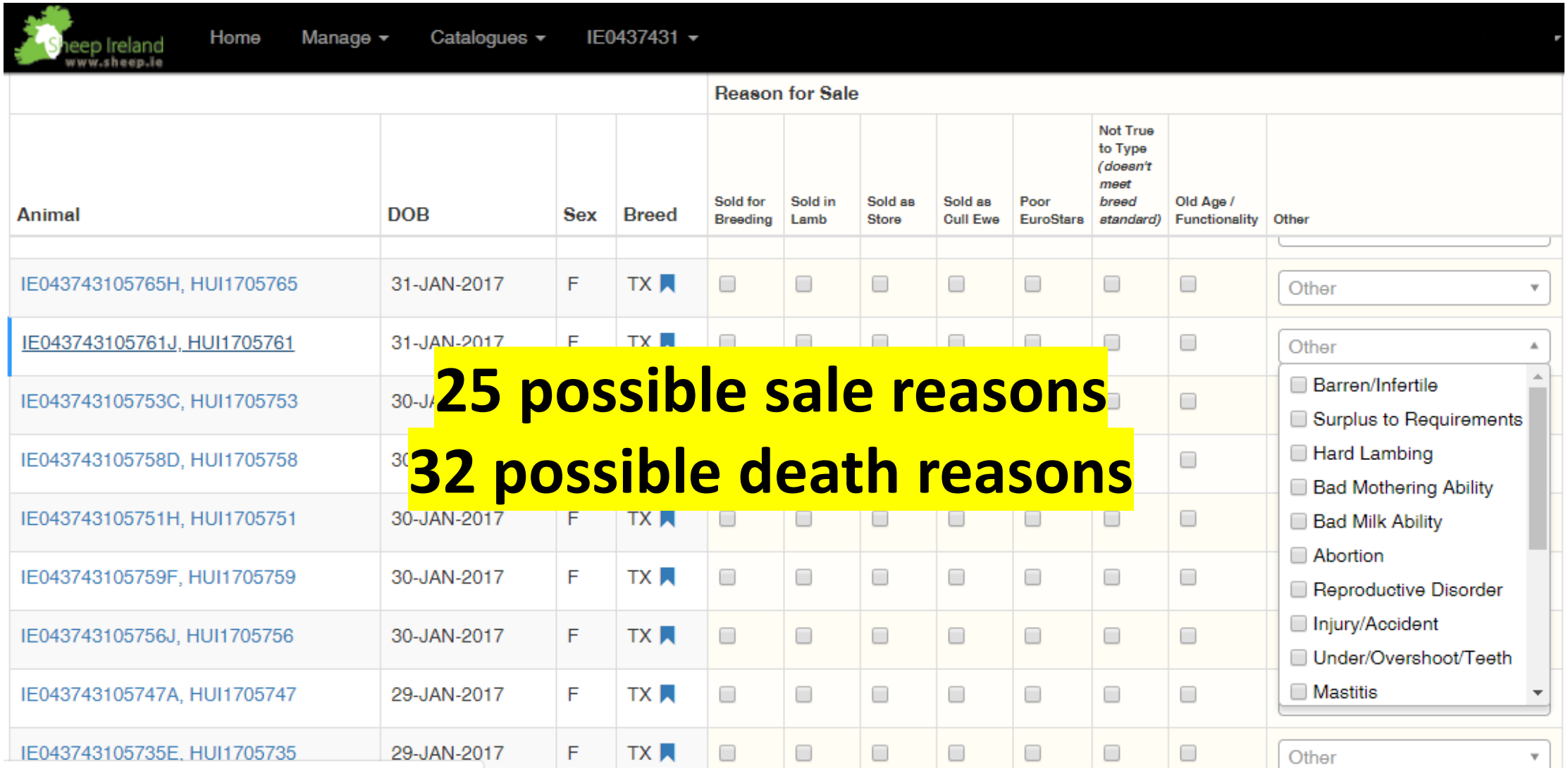
- Sheep Challenge Vs Bovine?
  - National CMMS
  - Final destination and date of every animal known

Ewe Longevity

- Longevity is not straightforward!
  - Why did the sheep disappear?
    - Slaughtered?
    - Sold
    - Died
    - Do we even know the sheep is missing?

Ewe Longevity

New Sheep Ireland Webscreens



Sheep Ireland
www.sheep.ie

LambPlus App *available now!*

Do you want to record your flock but don't know where to start?

Our newly released LambPlus App is currently available to all LambPlus breeders free of charge. This new phase of data recording makes it easier for LambPlus members to performance record their flock.

Lambing information, weights and health records (mastitis, lameness, BCS, dag score etc.) can all be recorded instantly via your smartphone.

Other features

- Bluetooth technology allows you to connect an EID reader to the App, making data recording quick and easy.
- Offline Capability allows you to record information without an internet connection.

Benefits

- Saves time
- User friendly
- Quick and easy to use
- More accurate Records
- Information uploaded straight to the Sheep Ireland database.
- LambPlus Reports
- Identifies the most profitable genetics in your flock

Join LambPlus and download for free, contact 023 882 0451 to sign up today!

Where to find it?

This LambPlus App is available for download on Android and iOS devices and works well on tablets and phones equally.

Available on the iPhone App Store

GET IT ON Google Play

Ewe Longevity

- SusSheP & Longevity;
  - Use existing data
  - Can we find early life predictors for longevity
  - Building into national genetic breeding indexes
  - Develops ways to accurately record longevity data

Ewe Longevity

- Initial findings;
  - Main culling reasons vary from country to country
  - Some obvious common traits
    - Mastitis
    - Teeth loss
    - Age
    - Infertility (Barren)
    - Many more……..
  - Some uncommon across countries
    - Wolves, Bears, Lynx, Wolverine, Golden eagle (Norway)

Ewe Longevity

- The future for this trait……..

More Data will be sourced from;

- Ram breeders
- Sheep Ireland CPT
- Teagasc Better Farms
- New projects - OviData

OviData EIP Project

Increasing sheep genetic gain in Ireland through scientific data capture and analysis

'The European Agricultural Fund for Rural Development: Europe investing in rural areas'.

Department of Agriculture, Food and the Marine
An Roinn Talmhaíochta, Bia agus Mara

eip-agri
AGRICULTURE & INNOVATION

Ireland's European Structural and Investment Funds Programmes 2014-2020
Co-funded by the Irish Government and the European Union

National Rural Network

SusSheP

- End Product?
  - Unlock the potential for more widespread AI?
  - Learn more about labour on sheep farms & carbon produced?
  - Incorporate Longevity into Irelands national sheep indexes

SusSheP

- Thank ewe……..

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