



## **Cow's Own Worth (COW)**

*synergising data to provide a new tool  
to aid in culling decisions in  
seasonal dairy herds*

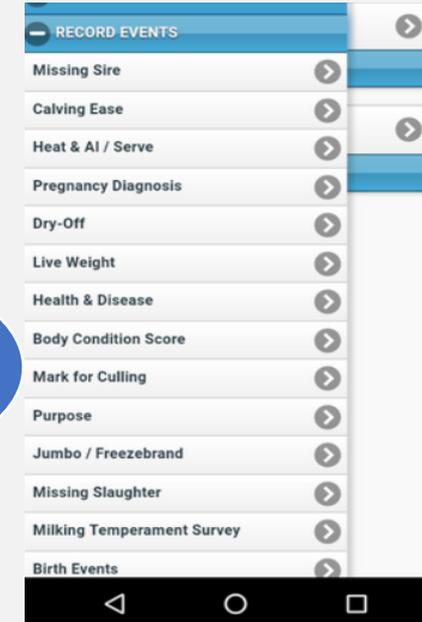
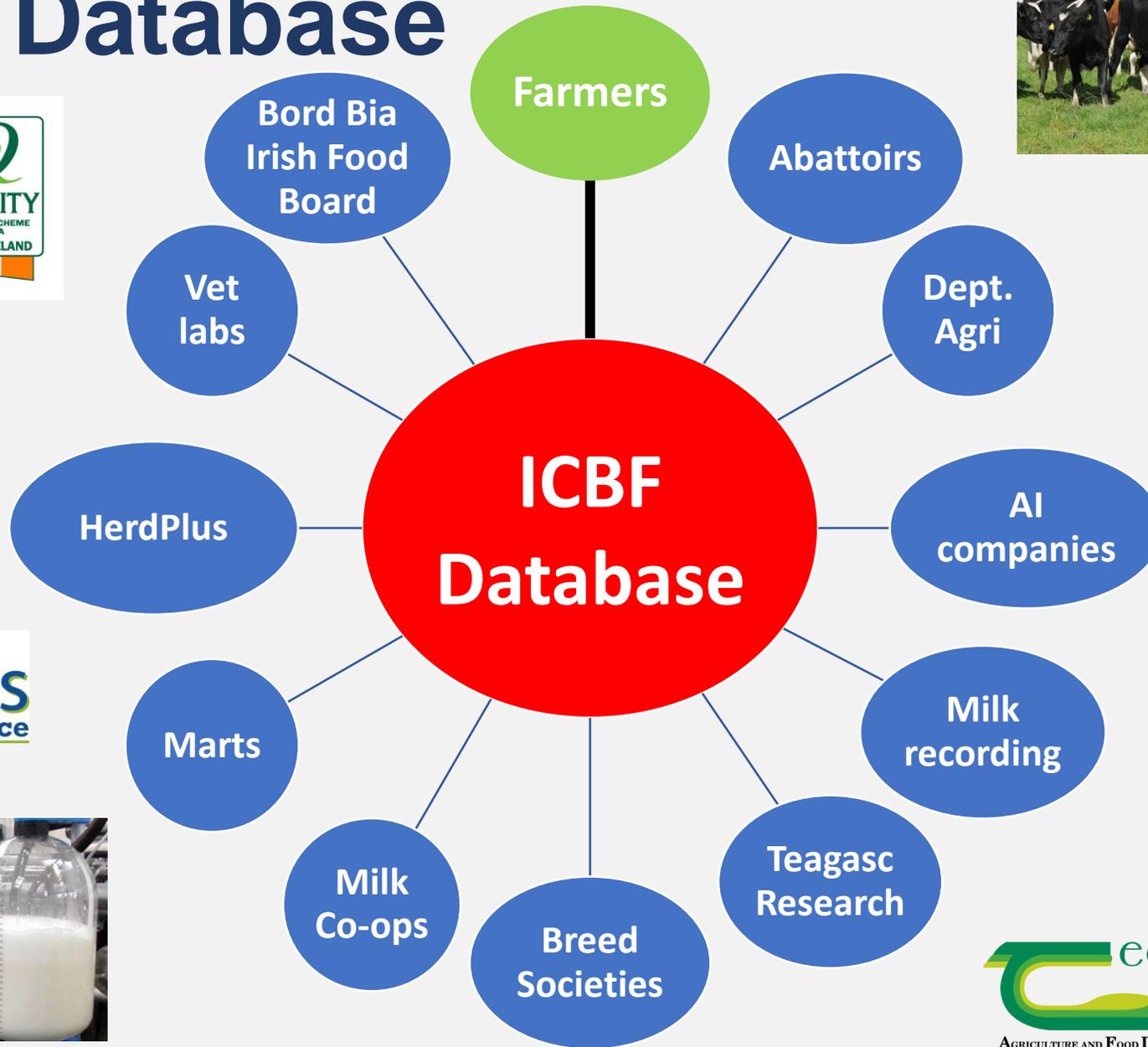
**Speaker: Margaret Kelleher**

Donagh Berry, Peter Amer, Andrew Cromie,  
Philip Owens and Ross Evans

[mmkelleher@icbf.com](mailto:mmkelleher@icbf.com)



# ICBF Database



# Cow's Own Worth (COW)

Designed to represent more closely the future **phenotypic performance** of dairy females

A new system to rank females on predicted profit potential

- Spring-calving system
- EBI – Economic Breeding Index (national breeding index)
- Centralised database
- Reward data recording herds with an added value service



# Question – who would you cull?????

EBI €200



EBI €100

# Question – who would you cull?????

**EBI €200  
Parity 5**



**EBI €100  
Parity 2**

# Question – who would you cull?????

**EBI €200  
Parity 5  
Calved April**



**EBI €100  
Parity 2  
Calved Feb**

# Question – who would you cull?????



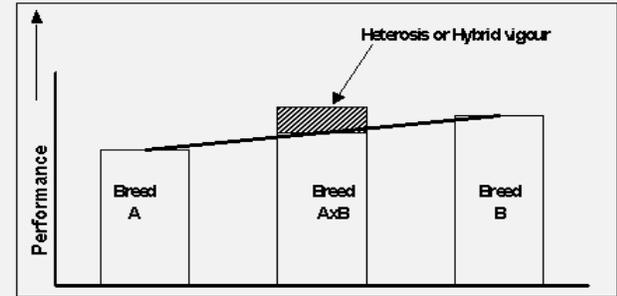
# Cow's Own Worth (COW)

ICRF Genetic Evaluations Service			
AI Code:	CJ1	Breed:	HD (100%)
Animal Name:	O-BEE MANFRED JUSTICE	Owner:	EUROGENETIC AI BULLS
Date of Birth:	08-04R-1998	Date of Evaluation:	Apr 2012
National ID:	HOLLUSAM000122358313	Pedigree Status:	PEO
International ID:		MIS:	EMPRISE BELL ELTON / 501912470
EBI Summary		Milk	Fertility
Health		Type	Penalty
		Culling	Prev. Eval.
		Beef	

Help on understanding EBI, PTA's and Breeding Values - [click here](#)      \*\*Genotyped\*\*

Index	Euro	Bel	Percentile
EBI	227	97%	
Milk Sub Index	93	95%	
Fertility Sub Index	97	95%	
Culling Sub Index	42	95%	
Beef Sub Index	-5	95%	
Health Sub Index	8	95%	
Maintenance Sub Index	-7	95%	

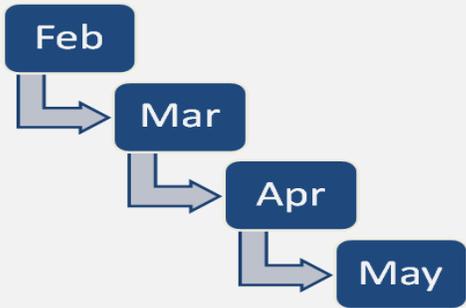
**Genetics effects**



**Age of cow**



**Crossbreeding effects**



**Calving date**

**Individual effects**



**EBV**

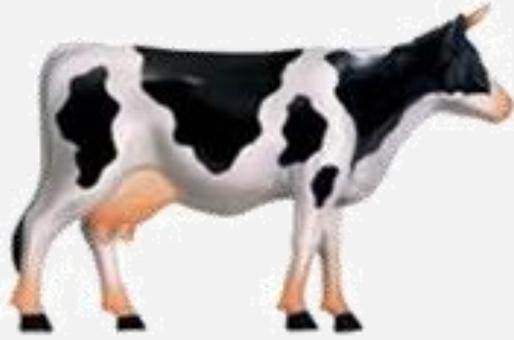
**Heterosis**

**Permanent Environment**

**Calving Date**

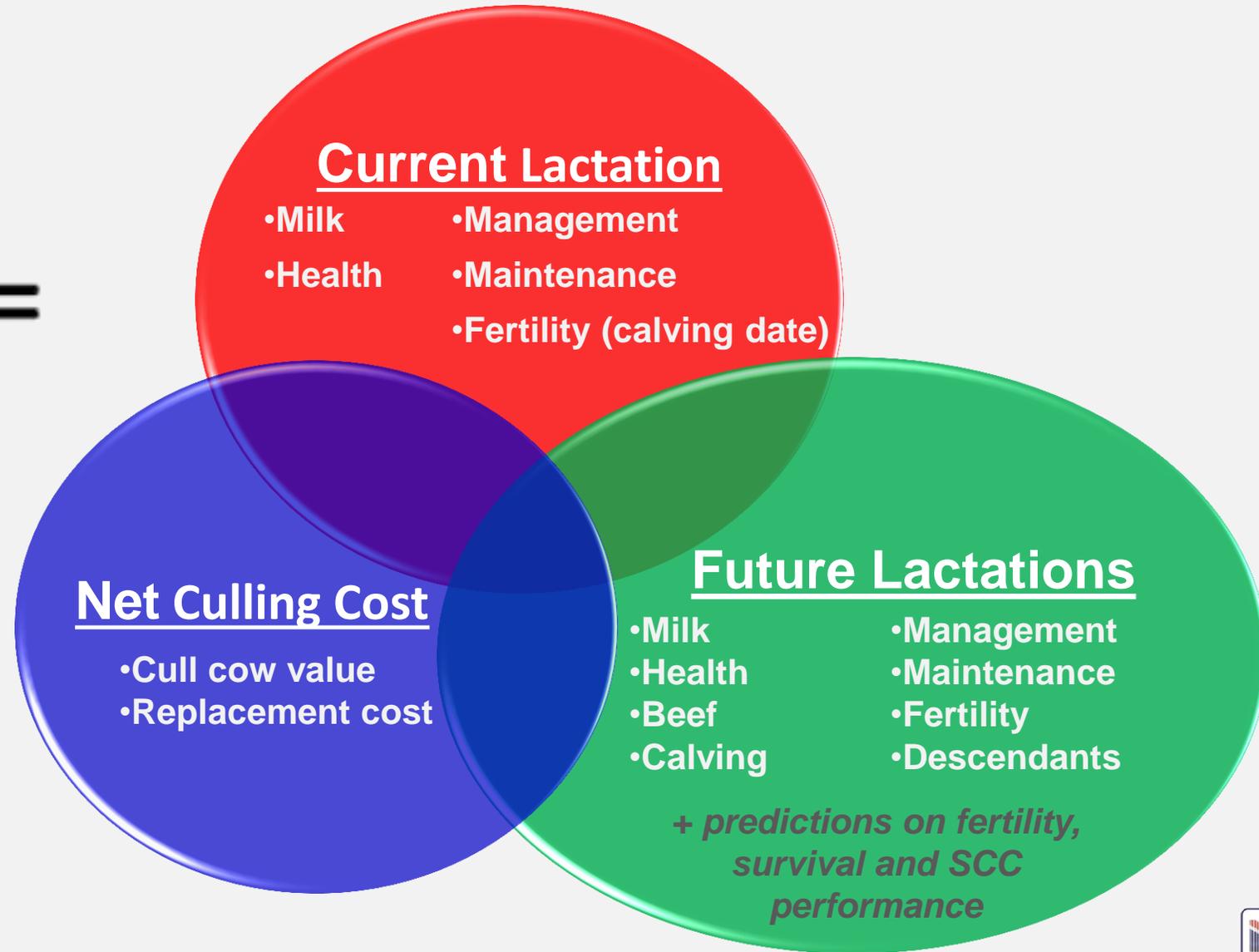
**Age**

# Expected profit from:



=

**Cow's Own Worth**



# Current lactation profit

Actual calving date

Genetics effects

Age of cow



Crossbreeding effects

Calving date

Individual effects

Feb

Mar

Apr

May

## Current Lactation

- Milk
- Health
- Management
- Maintenance
- Fertility (calving date)



Current milk price

Costs per calving month MDSM



# Future lactations profit

Genetics effects

Age of cow



Crossbreeding effects

Calving date

Individual effects

## Future Lactations

- Milk
- Health
- Beef
- Calving
- Management
- Maintenance

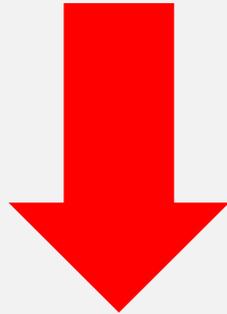


Future milk price MDSM

# Future lactations profit



EBI times  
Cumulative Discounted Expression

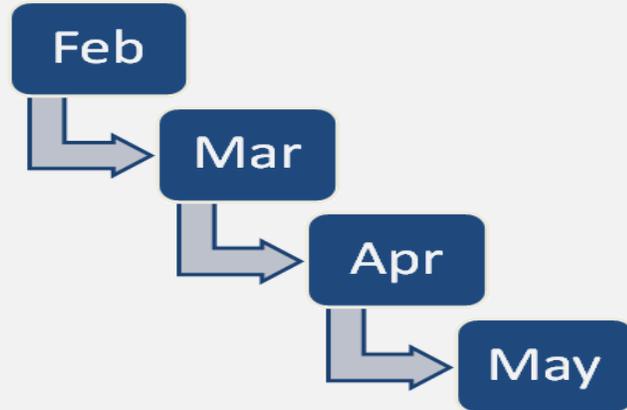


Future Lactations

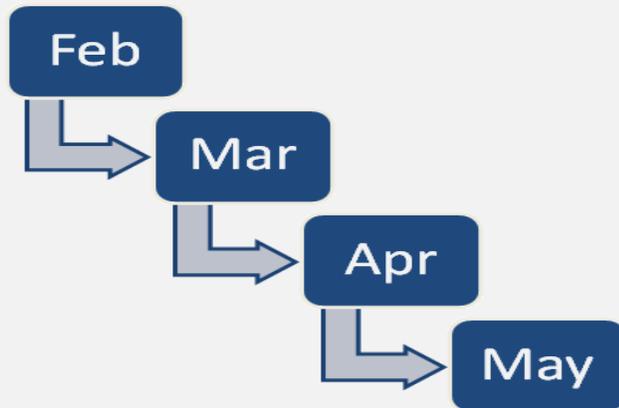
•Descendants

# Future lactations profit

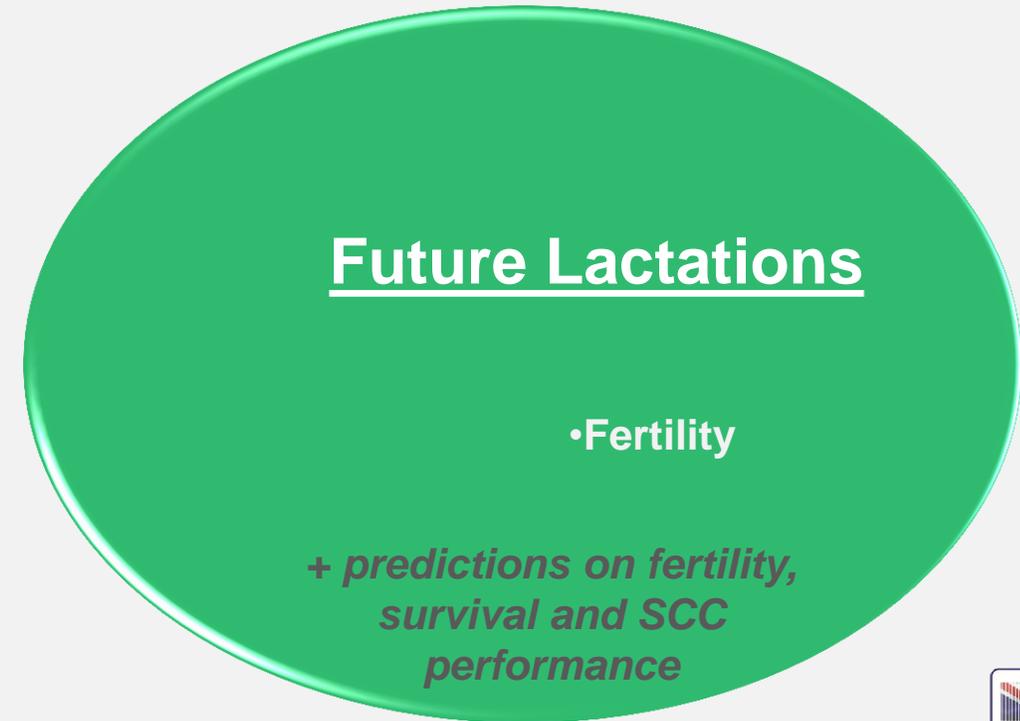
Actual calving date



Next calving date



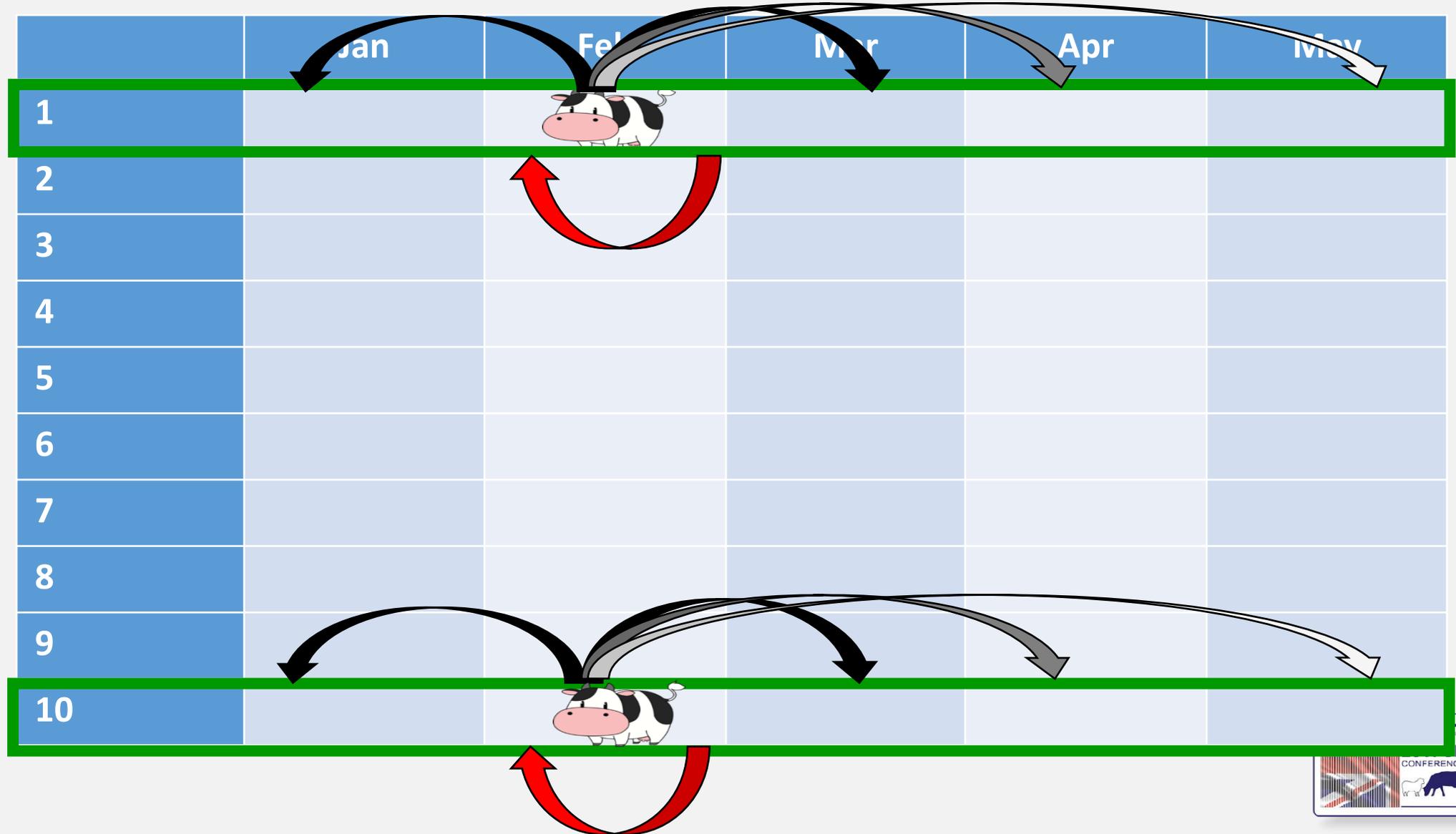
Genetic effects



# Future fertility performance

## Transition matrices

Best Genetics



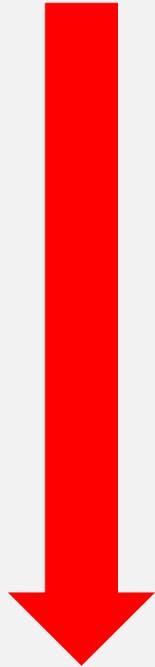
Worst Genetics



# Future fertility performance

## Transition matrices

Best  
Genetics



	Jan	Feb	Mar	Apr	May
<b>Proportion</b>	<b>0.14</b>	<b>0.53</b>	<b>0.22</b>	<b>0.08</b>	<b>0.03</b>
<b>Cost (€)</b>	<b>0.00</b>	<b>0.00</b>	<b>-151.00</b>	<b>-210.00</b>	<b>-437.00</b>
<b><math>\Sigma</math>Cost (€)</b>			<b>-63.13</b>		
	Jan	Feb	Mar	Apr	May
<b>Proportion</b>	<b>0.13</b>	<b>0.39</b>	<b>0.25</b>	<b>0.15</b>	<b>0.07</b>
<b>Cost (€)</b>	<b>0.00</b>	<b>0.00</b>	<b>-151.00</b>	<b>-210.00</b>	<b>-437.00</b>
<b><math>\Sigma</math>Cost (€)</b>			<b>-99.84</b>		

**Difference of €36.71**

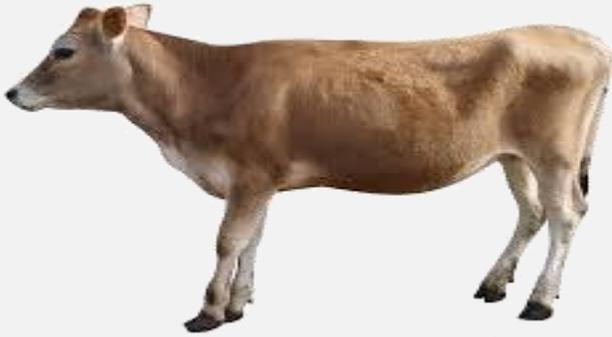
# Net culling cost



Cull  
value



**Salvage value  
+  
Genetics<sub>CWT</sub>**



Long term  
replacement  
requirement



Replacement  
cost

**Net Culling Cost**

- Cull cow value
- Replacement cost

# Results: Milk production

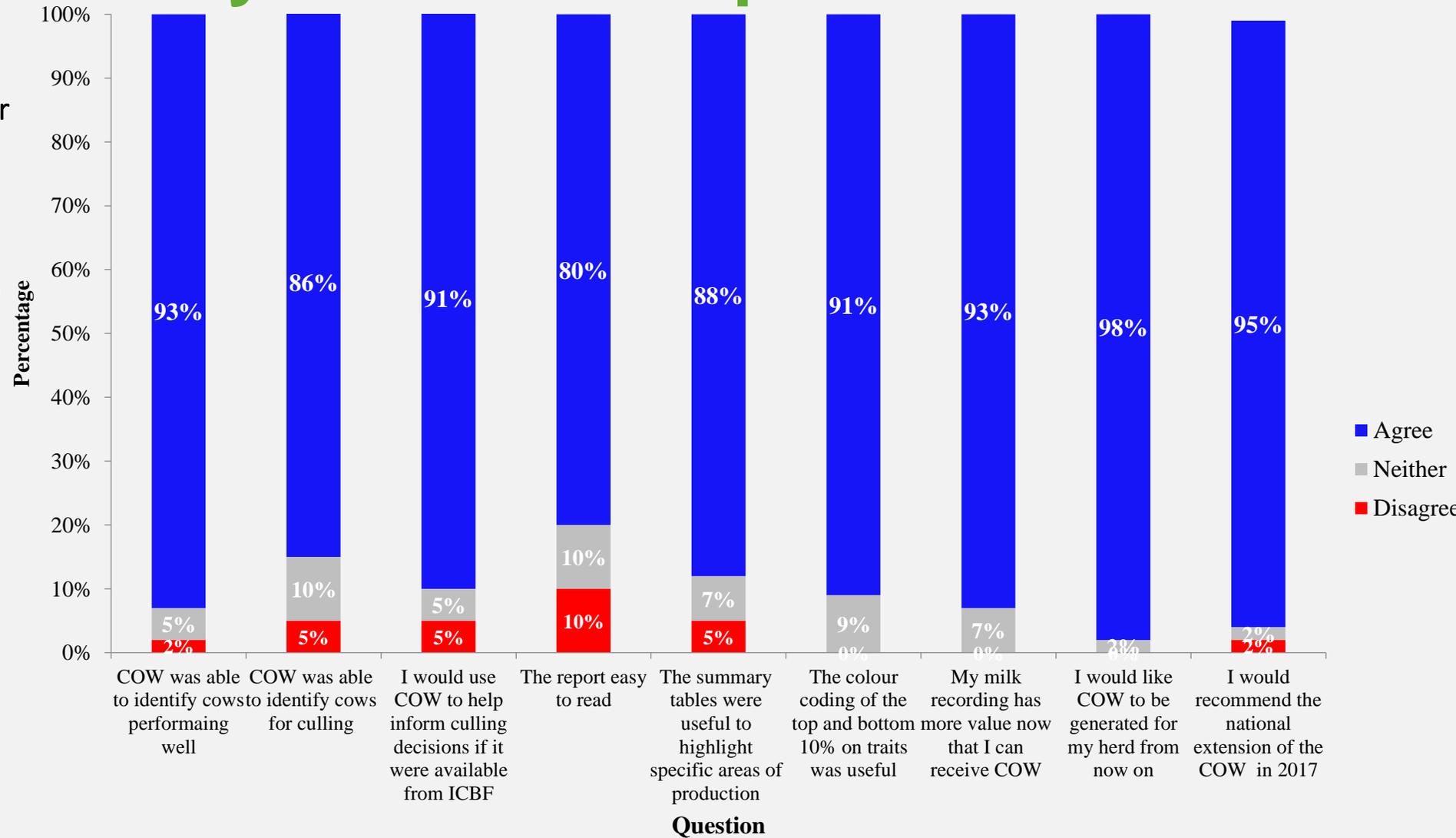
€360 more value per cow per lactation  
for cows in top 25% versus bottom 25%

Group	Milk (kg)		Fat (g/100g)		Protein (g/100g)	
	COW	EBI	COW	EBI	COW	EBI
<b>Best</b> (Top 25%)	6965 (6.17)	6674 (6.32)	4.07 (0.003)	4.11 (0.003)	3.57 (0.001)	3.57 (0.003)
<b>Good</b>	6695 (6.45)	6530 (6.27)	4.01 (0.003)	4.00 (0.003)	3.49 (0.001)	3.52 (0.003)
<b>Poor</b>	6512 (6.18)	6530 (6.27)	4.01 (0.003)	4.00 (0.003)	3.49 (0.001)	3.49 (0.003)
<b>Worst</b> (Bottom 25%)	6164 (6.08)	6467 (6.24)	3.97 (0.003)	3.93 (0.003)	3.44 (0.001)	3.44 (0.003)

€9000

# Survey results 2016 pilot

1. COW was able to identify cows performing well within my herd.
2. COW was able to identify cows for culling within my herd.
3. I would use the COW to help inform my culling decisions if it were to become a routine service from ICBF.
4. I found the report easy to read.
5. The summary tables were useful to highlight specific areas of production (EG: Top 10 and bottom 10 on COW, Top 10 and bottom 10 on milk solids, High SCC cows).
6. The colour coding of the top 10% and bottom 10% on important traits useful.
7. My milk recording information has more value now that I can receive a COW report.
8. I would like the COW to be generated for my herd from now on.
9. I would recommend the national extension of the COW to all dairy milk recording herds in 2017.



# Profile development 2017

- Development underway
- Pilot phase scheduled July
- Farmers testing screens and accuracy of COW rank
- Potential to encourage more data recording with data completeness dash bars

ICBF.com Irish Cattle Breeding Federation

HERDPLUS IC ADMIN TAURUS SERVICES GENE IRELAND

**Cow's Own Worth (COW) Profile** Click on an Animal Number/Jumbo to view more details.

Show 100 rows of 753 total. Showing 1 to 100

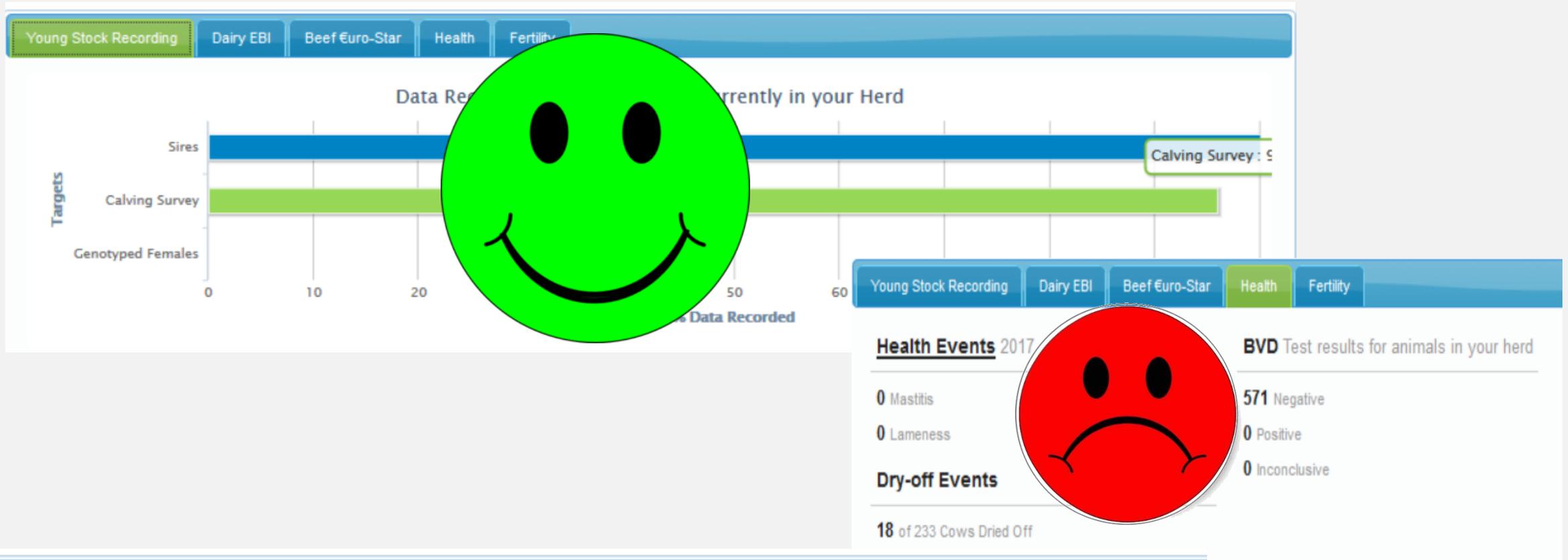
First Previous 1 2 3 4 Next Last Hide filters Excel PDF

Jumbo Animal Number Breed From From Date To To Date

Animal Details						Production Values				COW Components			COW
Jumbo	Animal Number	Breed	Lact	Calving Date	EBI	Milk PV (kg)	Fat PV (kg)	Prot. PV (kg)	SCC (,000 c/ml)	Current Lactation (€)	Future Lactations (€)	Net Cull Value (€)	COW Rank
8278	IE351272178278	JE (44%), HO (38%)	1	13-FEB-16	145	218	23	18	41	178	765	960	1
8104	IE351272168104	JE (50%), HO (28%)	1	26-JAN-16	115	135	30	19	104	191	719	961	2
8179	IE351272178179	JE (34%), NR (25%)	1	27-JAN-16	156	-43	21	10	26	149	736	959	3
8180	IE351272198180	JE (41%), HO (25%)	1	22-JAN-16	138	-35	21	14	146	169	700	961	4
8298	IE351272128298	JE (53%), HO (31%)	1	08-FEB-16	115	74	37	15	50	206	650	964	5
8130	IE351272188130	JE (34%), HO (25%)	1	21-JAN-16	147	50	28	13	56	171	680	960	6
8355	IE351272118355	HO (56%), JE (25%)	1	03-FEB-16	180	158	20	15	285	156	672	960	7

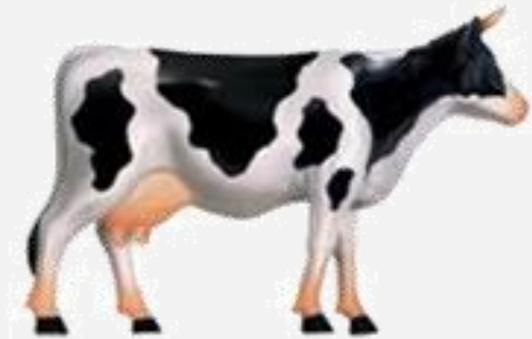


# Current data recording



# Conclusions

- Complimentary to the EBI (national breeding index)
- Added value service
- Prospects to improve herd profitability
- Multiple sources of data available
- Live system
- Maximise COW accuracy by;
  - Recording **MORE** data
  - Recording **ACCURATE** data
- Pilot phase of on-line service July 2017
- Commercial roll-out September pending results of pilot phase



**Cow's Own Worth**





## Our Farmer & Government Representation



## Our AI & Milk Recording Organisations



## Our Herdbooks



# Acknowledging Our Members