

IRISH CATTLE BREEDING FEDERATION

Breeding for Profit from Beef Production (€)

Animal Evaluation Unit

Overview

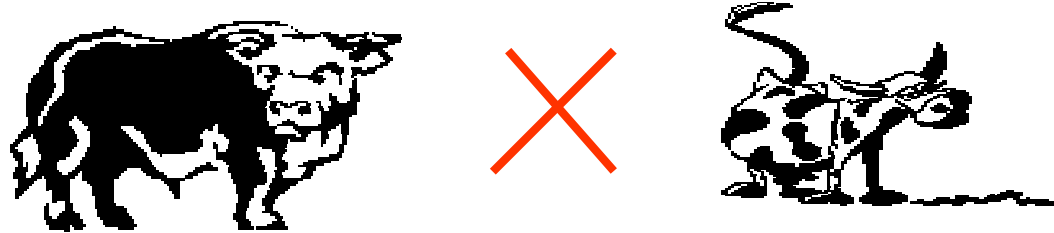
- Overview of Irish beef industry
- ICBF, ICBF database & Animal Events
- What are genetic evaluations?
- New beef indexes
- Other Benefits to better breeding
- Breeding program.

Beef Cattle Industry in Ireland

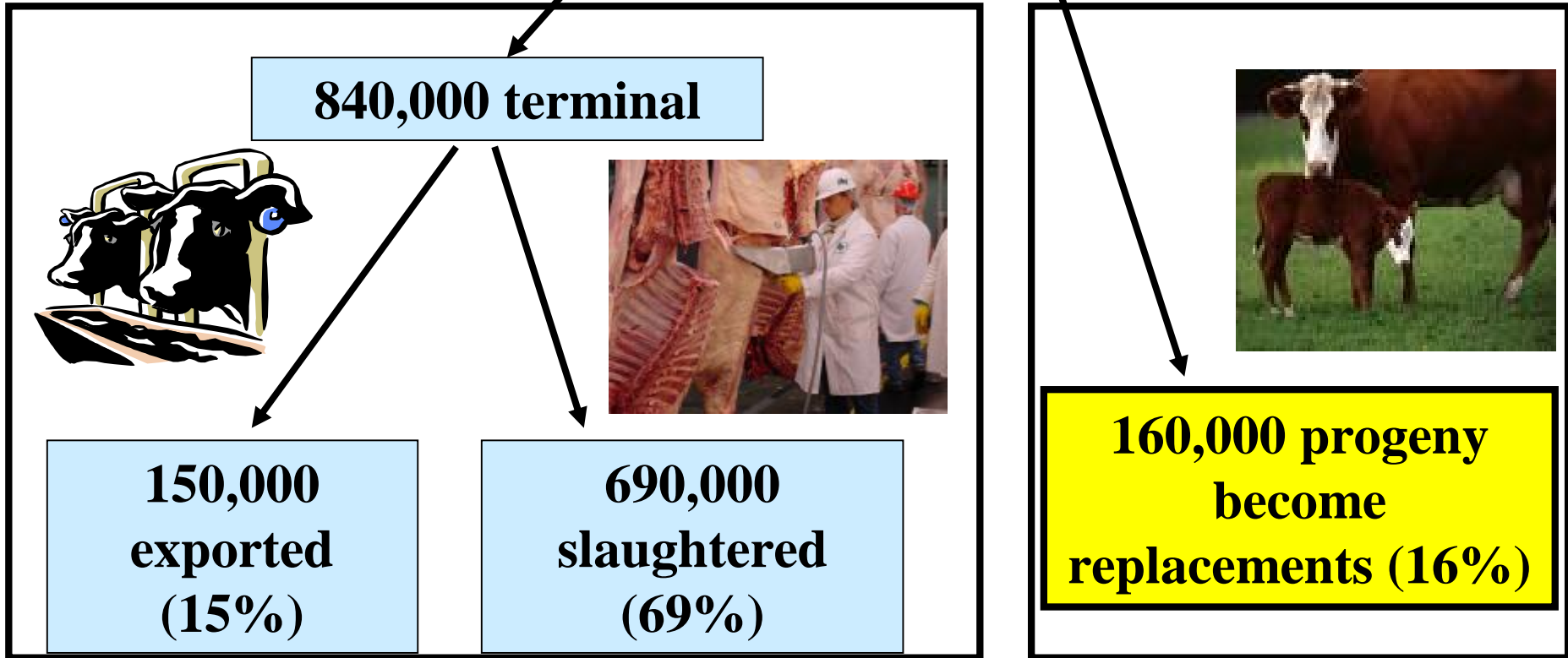
- 1 Million suckler cows
 - Ave. 17 cows/herd (Suckler)
 - But 40% in herds <10 cows
- 67,000 beef breeding herds
- 7,000 Pedigree beef herds
 - Provide sires for dairy herds (AI & Stock)
 - Ave 4 cows/herd (Pedigree)
- Predominantly **crossbred**
- Replacements heifers:
 - 32% 1st cross from dairy herds
 - 68% 2nd cross from suckler herds



Irish Suckler Beef Industry



1 million suckler cows calving each year



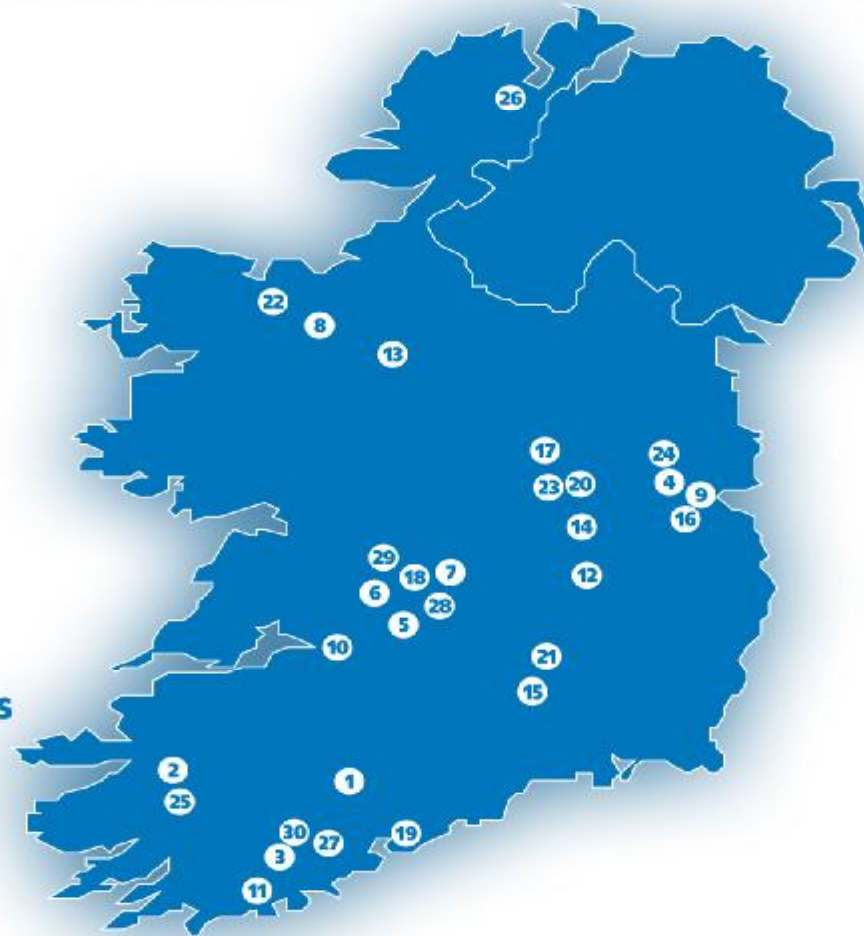
ICBF Strategy for Cattle Breeding

- Encourage farmers to focus on genetic improvement as a tool for improving future profit on Irish cattle farms
 - How?
 - Maintain a comprehensive database of Irish animal performance information.
 - Use this data to develop genetic evaluations for all relevant breeds and traits
 - Provide farmers with profit indexes to select their better cattle for breeding
 - Help set-up an efficient breeding scheme to identify better AI and stock bulls for Irish herds

The ICBF cattle breeding database

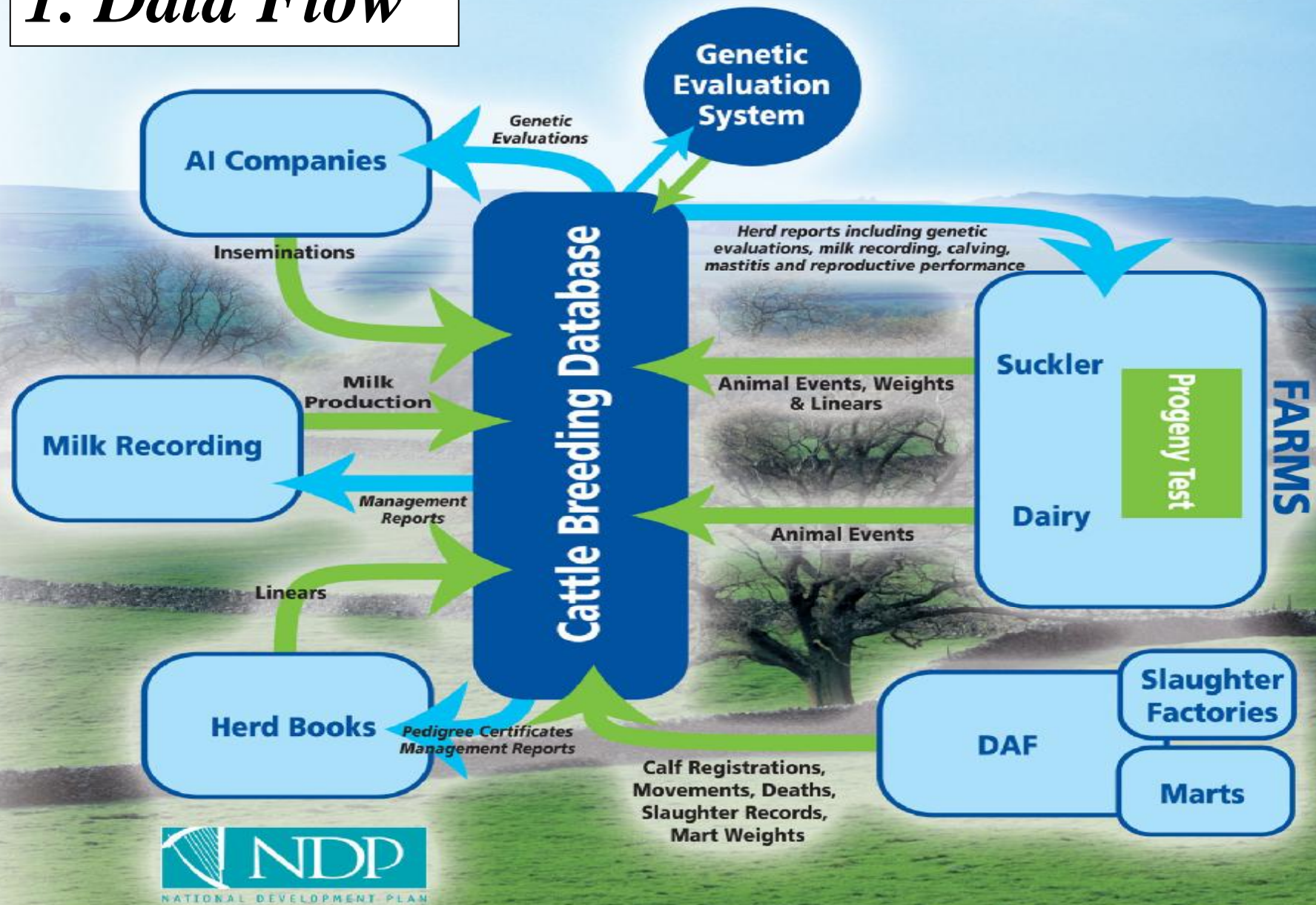
One Database, Many Partners less duplication and cost for farmers

- AI**
Munster AI
1 - Dairygold
2 - Kerry
3 - SWS
4 Progressive Genetics
5 Dovea AI
- Milk Recording**
1 Dairygold
2 Kerry
3 SWS
4 Progressive Genetics
6 Arrabawn
7 Tipperary
8 Connacht Gold
- Farm Organisations**
9 IFA
10 ICMSA



- Herdbooks**
Holstein Friesian **11**
Belgian Blue **12**
Angus **13**
Aubrac **14**
Blonde d'Aquataine **15**
Charolais **16**
Hereford **17**
Limousin **18**
Normande **19**
Parthenais **20**
Piedmontese **21**
Shorthorn **22**
Simmental **23**
Jersey **24**
Kerry **25**
MRI **26**
Montbeliarde **27**
Rotbunt **28**
Saler **29**
- ICBF 30**

1. Data Flow



i. Animal Events

- Launched in beef in 2004
- 1.1m calf births in 2006 (50% of total births)
 - 530k with known sire.
 - 425k with calving survey
- Starting point for beef breeding improvement.
 - Sire of cow, dam of cow.....
 - Marts, factories, on-farm (pedigree data)....
 - Calving dates.....
- New DAF suckler cow welfare initiative.



White Card for calf Registration

**National Bovine
Animal Birth
Registration Service**

Tag No.	U 34-12088-8 0193
	

Application for :
(1) Birth Registration and (2) Passport / Cattle Identity Card.

Sex of Animal : Male Female
 (Please tick one box)

Date of Birth of Animal :

--	--	--	--	--

 Day Month Year

Breed of Dam : *

--	--

 Dam Earing No :

--	--	--	--	--	--	--	--	--	--	--	--

Breed of Sire : *

--	--

 AI Code :

--	--	--	--

 Tick box if calf is stillborn
 (If known)

* Select Breed code only from Official List

I hereby declare the detail given by me in all sections of this Application Form to be true and accurate :

Declaration of Owner/Keeper of Herd in which the animal was born

Signature : Date :

This Application Form to be completed by the Owner/Keeper of the Herd in which the Animal was born, at the time of tagging, and posted immediately to the Registration Service (Freepost).

AE Book for calf Registration

_____ is the reference number of this Animal Events Sheet Note: Please return completed forms every 7 days

AE line No.	Section 1a – Details for National Bovine Animal Birth Registration Service*												Section 1b - Extra Calving Details							
	Year of Event		Dam of Calf Details				Calf Details First 7 digits of calf tag			Sire of Calf Details			Calving Details		Pedigree Name of Calf					
	2 0						1 E													
	Date of Event Day Month		Dams Ear Tag Number				Breed of Dam	Last 5 digits of Calf Tag		Sex of Calf	AI Code/Ear Tag/Herdbook/Within- Herd Number			Breed of Sire	Dead Calf	Calving Survey	Herdbook Registration Only Note: Prefix Not Required			
01									M	F					1	2	1	2	3	4
02									M	F					1	2	1	2	3	4
03									M	F					1	2	1	2	3	4
04									M	F					1	2	1	2	3	4
05									M	F					1	2	1	2	3	4
06									M	F					1	2	1	2	3	4
07									M	F					1	2	1	2	3	4
08									M	F					1	2	1	2	3	4
09									M	F					1	2	1	2	3	4
10									M	F					1	2	1	2	3	4

Note: Always circle the appropriate code. Example I: Sex of Calf M F indicates a Female Calf. Example II: Dead Calf 1 2 indicates a calf that was born dead.

Date of Event Day Month	Within Herd ID of Animal <small>Freeze Brand/J Tag No.</small>	Ear Tag Number of Animal (Not always required - see below)	Section 2 New Within Herd ID.		Section 3 – Insemination or Service			Section 4 – Others							
			1	2	Sire ID (AI Code/Ear Tag/Herdbook/Within-Herd ID)		Health	PD	Weight	Dry- Off or Worn	Causes of calf or fetus death				
11			1	2				1	2	3			1	2	
12			1	2				1	2	3			1	2	
13			1	2				1	2	3			1	2	
14			1	2				1	2	3			1	2	
15			1	2				1	2	3			1	2	
16			1	2				1	2	3			1	2	
17			1	2				1	2	3			1	2	
18			1	2				1	2	3			1	2	
19			1	2				1	2	3			1	2	
20			1	2				1	2	3			1	2	

Note: Ear tag Numbers are only required when:
1. Adopting a new Within Herd ID (Freeze Brand/J Tag Number) to an animal.
2. Recording an event on an animal with no Within Herd ID (Freeze Brand/J Tag Number).

DECLARATION FOR NATIONAL BOVINE ANIMAL BIRTH REGISTRATION Declaration of owner/keeper of Herd in which animal was born: I herby declare that the details given by me in all sections of this Application form to be true and accurate: This application to be completed by owner/keeper of the Herd in which animal was born, at the time of tagging, and posted immediately to the registration service

Signature of herd owner: _____

Date: _____

PLEASE ENSURE YOU HAVE FULLY COMPLETED SECTION 1a AND SIGNED & DATED THIS FORM BEFORE POSTING.

*Please record all calving events. Only those that result in the birth of a live calf will be used for National Bovine Animal Birth Registration. Those that result in the birth of a dead calf will be used by ICBF for cattle breeding purposes only. Please record dead calves by leaving the calf ID field (last 5 digits of the calf tag) blank.

Codes required for recording animal events

The following codes should be used for the routine recording of all animal events. A full list of these codes are also contained in the Animal Events Notebook.

Section 1 – Calving Event	Code
<i>Breed of dam/sire – see below</i>	
<i>Sex of calf</i>	
Male	(M)
Female	(F)
<i>Dead calf</i>	
Abortion	(1)
Dead at birth	(2)
<i>Calving Survey</i>	
Normal calving	(1)
Some assistance	(2)
Considerable difficulty	(3)
Veterinary Assistance	(4)

Sect 2 – New Within Herd ID	Code
<i>Freeze-branding</i>	
New within-herd ID	(1)
Remove within-herd ID	(2)

Section 3 – Service Event	Code
<i>Non serve heat/run with bull</i>	
Non service heat	(1)
Stock bull put into herd	(2)
Stock bull taken out of herd	(3)

Section 4 – Other Event	Code
<i>Health – see below</i>	
<i>Pregnancy Diagnosis</i>	
Confirmed in-calf	(1)
Confirmed not in-calf	(2)
<i>Dry-off/wean</i>	
Cow dried off	(1)
Calf weaned from cow	(2)
<i>Cause of death – see below</i>	

Breed of Sire/Dam	Code	Breed of Sire/Dam	Code
Angler	AN	Jersey	JE
Angus	AA	Kerry	KE
Aubrac	AU	Limousin	LM
Ayrshire	AY	Maine Anjou	MA
Belgian Blue	BB	Montbeliarde	MO
Bison	BI	MRI/MRY	RW
Blonde d' Aquitaine	BA	Murray Grey	GS
Brown Swiss	BS	Normande	NO
Charolais	CH	Norwegian Red	RW
Chianina	CI	Parthenaise	PT
Danish Red	RD	Piedmontaise	PI
Dexter	DX	Rogmanola	RM
Galloway	GA	Rotbunde	RW
Guernsey	GU	Salers	SA
Hereford	HE	Shorthorn	SH
Holstein-Friesian	FR	Simmental	SI
Highland	HL	South Devon	SD
Irish Maol	IM	Swedish Red	RW

Health Event	Code	Cause of Cull/Death Event	Code
<i>Digestive/metabolic</i>		Abortion	AB
Displaced stomach	DS	Feet and Legs	FL
Grass Staggers	GS	Infertility	IN
Ketosis	KE	Injury	IJ
Milk Fever	MF	Low Production	LP
<i>Udder</i>		Old Age	OA
Mastitis	MA	Poor Health	HE
<i>Reproductive</i>		Poor Milking Speed	MS
Castration	CA	Poor Temperament	TE
Cystic ovaries	CO	Poor Type	TY
Retained Placenta	RP	To-be culled	TC
<i>Functionality</i>			
Lameness	LM		
<i>Calf diseases</i>			
Parasitic infection	PI		
Respiratory disease	RD		
Scour	SC		

Same as white card. Enough for blue card from Dept.

AE line No.	Year of Event		Dam of Calf Details				Sire Details				Calving Details		Pedigree Name of Calf	
	Day	Month	Dams Ear Tag Number	Breed of Dam	Last 5 digits of Calf Tag	Sex of Calf	AI Code/Ear Tag/Herdbook/Within-Herd Number	Breed of Sire	Last 5 digits of Sire Tag	Sex of Sire	Dead Calf	Calving Day	Month	Year
01	05	12	IE12345678910	CHX	42345	M	IE2345678910	CH	42345	M				
02	06	12	IE12345678910	LMX	42346	M	HBULL							

Rename sire

sire

calving details

pedigree registration

Date of Event		Within Herd ID of Animal	Ear Tag Number of Animal	Section 2	Section 3 - Insemination or Service	Section 4 - Others				
Day	Month	Freeze Branding No.	(Not always required - see below)	New Within Herd ID	Sire ID (AI Code/Ear Tag/Herdbook/Within-Herd ID)	Health	PD	Weight	Dry-Off or Wean	Cause of calf or fetus death
05	12		IE234567891	1 2		1 2 3	1 2		1 2	

Other events: Insemination, Weights, Dry off, Treatments, Culling reason, castration, weaning

DECLARATION FOR NATIONAL BOVINE ANIMAL BIRTH REGISTRATION Declaration of owner/keeper of Herd in which animal was born: I hereby declare that the details given by me in all sections of this Application form to be true and accurate: This application to be completed by owner/keeper of the Herd in which animal was born, at the time of tagging, and posted immediately to the registration service

Signature of herd owner: John o Brien Date: 0 5/1 2/06

PLEASE ENSURE YOU HAVE FULLY COMPLETED SECTION 1a AND SIGNED & DATED THIS FORM BEFORE POSTING.

**Please record all calving events. Only those that result in the birth of a live calf will be used for National Bovine Animal Birth Registration. Those that result in the birth of a dead calf will be used by ICBF for cattle breeding purposes only. Please record dead calves by leaving the calf ID field (last 5 digits of the calf tag) blank.*

Breeds and Crosses in ICBF database

	Pure and crossbred	Pure	% Pure
Charolais	835552	84429	10%
Limousine	786289	57450	7%
Angus	664078	28735	4%
Hereford	643652	24974	4%
Simmental	406929	21980	5%
Belgian Blue	320282	2858	1%
Shorthorn	55435	4770	9%
Blonde Aq	26348	2206	8%
Saler	18777	2373	13%
Aubrac	7316	1496	20%
Piemontese	3244	274	8%
Partenaise	1988	216	11%
Romagnola	1471	14	1%
11 Others	1612	44	3%



provided by Dr. Robert Kropp



provided by Dr. Robert Kropp



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What type of information is stored?

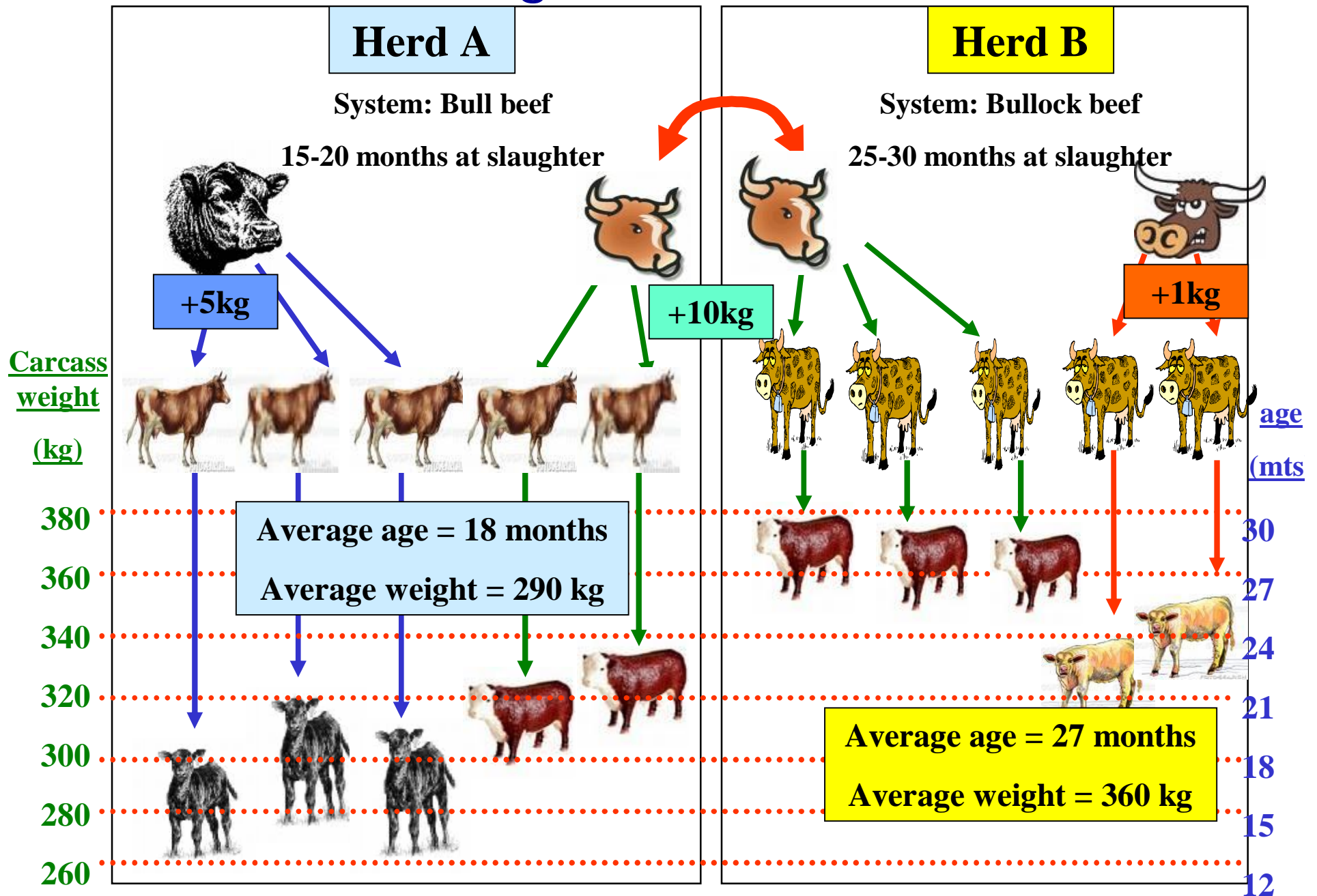
Type of data stored in ICBF	Source	Traits Measured	Records available	Useable records
Calving Performance	Animal Events	Calving difficulty, gestation, mortality	10,500,000	1,200,000
Carcass data	Meat Factories	carcass weight, conformation, fat	1,200,000	270,929
Weaning Weight data	Marts & on-farm	weight at 150-300 days	800,000	33,219
Live Weight data	Marts & on-farm	weight at 300-600 days	700,000	30,020
Linear Score	On-farm	14 linear traits	110,000	76,000
Feed Intake	Tully & Teagasc	KG daily DM intake	3,100	3,000
Fertility/Survival	Animal Events	inseminations, culling reasons	400,000	100,000

- New information constantly flowing into database
- Main reason for loss of useable information is lack of pedigree data

What do we do with this information?

- First: Need to sort out what is genetic and what is not!
- Performance in mart or factory depends on genetics but also management of the herd such as feeding, age at slaughter, sex i.e. bulls or bullocks etc.
- Heritability of a trait gives a measure of how it is passed on
 - Carcass traits* are 40-60% heritable
 - Fertility traits* such as pregnancy to first service are only 2-5% heritable
- Next step is to take the heritable part of the trait and rank animals for their genetic merit or value for the trait
 - Called **genetic evaluations**

What are genetic evaluations??



Indexes to identify the best.

- Putting value on improvement in all traits affecting profitability



Suckler Beef Indexes

Index	Trait	%	Explanation
Slaughter (€)	Carcass Weight (Kgs)	38%	This Sub-Index will estimate how good a bull is at producing progeny with high value carcasses. Bulls that are producing cattle that have a high carcass weight for age, good conformation at kill out and good lifetime feed efficiency will score highly.
	Weaning Weight (Kgs)	25%	
	Carcass Conformation (Grade)	14%	
	Dry Matter Intake (Kgs)	18%	
	Carcass Fat (Grade)	5%	
Export (€)	Weaning Weight (Kgs)	67%	This Sub-Index will estimate how good a bull is at producing high value weanlings for export. Suckler farmers who are exporting their weanlings should look more closely at bulls in this Sub Index.
	Calf Quality (€)	33%	
Calving (€)	Calving Difficulty (%)	53%	This Sub-Index places a direct cost on calving problems estimated for each bull when used in a Suckler Herd. It puts a direct cost on calving problems estimated for each bull. It takes into account calving difficulty, gestation length and mortality.
	Gestation Length (Days)	20%	
	Calf Mortality (%)	27%	
Maternal Cow (€)	Cow Survival (%)	29%	These 2 Sub-Index can be used where a suckler farmer is choosing a bull to breed replacements from. The Maternal Cow component focuses on the performance of daughters of a sire for true maternal traits whereas the Maternal Calf component focuses on the future revenue of calves from these daughters. The two indexes need to be used in tandem when considering replacements as considerable genetic variation exists in suckler cows in terms of strengths and weaknesses for the two components
	Calving Interval (Days)	17%	
	Age at First Calving (Days)	9%	
	Maternal Calving Difficulty (%)	11%	
	Maternal Weaning Weight (Kgs)	33%	
	Cull Cow Carcass Weight (Kgs)	1%	
Maternal Calf (€)	Calving Difficulty (%)	6%	
	Gestation Length (Days)	2%	
	Calf Mortality (%)	4%	
	Weaning Weight (Kgs)	32%	
	Dry Matter Intake (Kgs)	13%	
	Carcass Weight (Kgs)	29%	
	Carcass Conformation (Grade)	10%	
	Carcass Fat (Grade)	4%	

MATERNAL INDEX PATHWAY

84%
Bull calves
and surplus
heifers



16%



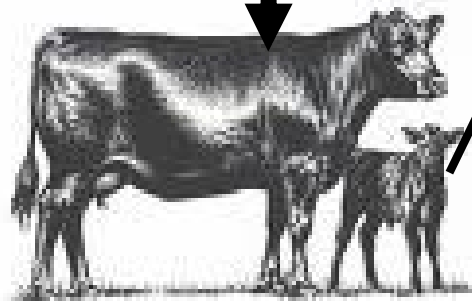
Index describes
influence 2
generations
later

Maternal Cow

- Ability to breed early
- Calve regularly
- Survive in herd
- Calve easily
- Plenty of milk
- Good cull cow value

Maternal Calf

- Subsequent Feed intake
- Subsequent growth traits
- Subsequent carcass traits
- Subsequent calving ability as bulls or replacement heifers



Key profit data: CF52

CALVING = -€20

Calv Diff = (+7.2) 8%
Gest Length = 288 days (+1.1)
Mortality = 3% (+0.4)
**BOTTOM 10-25% of
CHAROLAIS BREED
(difficult)**



EXPORT = €123

Wean weight = 329 kg (+27)
Price = 2.22/kg (+67)
TOP 5% OF THE BREED

MATERNAL COW = -€148

Mat Wean wt = 322 kg (-12)
CI = 416 days (+8)
SURV% = 73% (-2.2)
BOTTOM 1% OF BREED

SLAUGHTER = €154

Carcass weight = 383 kg (+42)
Carc conf. = 9.4 (R+) (+1.9)
**TOP 1% of CHAROLAIS
BREED**

SBI = €145

Rel = 98%

Top 5%

MATERNAL CALF = €351

**TOP 5% of CHAROLAIS
BREED**

- *Same principle for all animals; AI bulls, stock bulls, cows, pedigree, commercial.....*

Key profit data: LWF

CALVING = -€12

Calv Diff = (-3.7) 4%

Gest Length = 284 days (+0.4)

Mortality = 2% (-0.8)

**TOP 5% of ANGUS
BREED (Easy)**



EXPORT = €20

Wean weight = 306 kg (+3)

**TOP 25% of ANGUS
BREED**

SLAUGHTER = €31

Carcass weight = 314 kg (+13)

TOP 1% of ANGUS BREED

SBI = €96

Rel = 85%

Top 5%

MATERNAL COW = €155

Mat Wean wt = +15.4

CI = 357 days (-1.3)

SURV% = + 0.8

TOP 5% of ANGUS BREED

MATERNAL CALF = €126

TOP 1% of ANGUS BREED

- *Same principle for all animals; AI bulls, stock bulls, cows, pedigree, commercial.....*

AI sires across breeds

		Suckler Beef				Maternal							
		Index		Slaughter		Export		Calving		Cow		Calf	
CODE	Breed	Value	reliability	Value	rel	Value	rel	Value	rel	Value	rel	Value	rel
MOD	AA	€134	39	€63	54	€78	36	-€2	27	€184	8	€187	32
LWF	AA	€96	85	€31	88	€20	58	€12	88	€155	27	€126	53
EDJ	BB	€146	88	€112	93	€131	65	€3	90	-€57	28	€296	56
VDC	BB	€112	93	€140	97	€107	76	-€37	87	-€62	56	€228	59
OSI	CH	€184	62	€154	70	€107	38	-€4	64	-€67	12	€394	40
CF52	CH	€145	99	€154	98	€123	89	-€20	93	-€148	71	€351	60
MUC	LM	€155	75	€125	83	€73	70	-€14	72	€86	17	€251	52
ORO	LM	€128	90	€94	94	€95	72	-€12	87	€74	40	€207	57
HCC	SI	€209	76	€126	82	€71	70	€0	68	€151	38	€370	51
MLM	SI	€149	84	€112	90	€63	72	-€26	81	€167	28	€227	55

- Large differences in AI bulls, stock bulls
- More info to choose to suit your own system

Influence of a bull on your herd

Bull A

1. Calving index : -€40

Calv Diff = 8%

Gest Length = 288 days

Mortality = 3%

-€40*20 = -€800

20 suckler cows

17 calves alive: 8 bulls, 9 heifers

**EXPORT
INDEX:**

€150

€150*10 =
€1,500

**SLAUGHTER
INDEX:**

€100

€100*10 = €1000

If 3 dead calves are alive &
exported:

€1950 + €1000 - €800 = €2,150

Bull B

1. Calving index : -€10

Calv Diff = 4%

Gest Length = 283 days

Mortality = 1%

-€10*20 = -€200

20 suckler cows

20 calves alive: 10 bulls, 10 heifers

**EXPORT
INDEX:**

€100

€120*9 =
€1,080

**SLAUGHTER
INDEX:**

€70

€100*11 =
€1,100

€1080 + €1100 - €200 = €1,980

**Lower calving costs but
lower calf value**

Confirming indexes work?

	Slaughter index				Raw data				
	€	Wean	Cwt	Cconf	Age	Wwt	Age	Cwt	Cconf
Top Bulls	€94	11.5	27	2.3	239	315	709	345	7.7
Btm bulls	€15	-5.5	3.1	1.7	236	248	759	317	6.3

- Based on top & bottom 5 bulls within each of 6 main beef breeds.
- High index bulls; better weight for age, better conformation & more profit.
- Same principle for all four sub-indexes
- Indexes do work....

Where to find new lists??

- ICBF website – Active Bull List
- Teagasc advisor
- Farming Press
- Breed Societies
- AI catalogues



Other Benefits

- Carcass reports
- Beef Recording Service
- Linear Type Evaluations
- Involvement in breeding program for genetic improvement



Carcass reports

- New reports from cattle breeding database - animals slaughtered.
- Reports generated periodically – as animals are slaughtered

Beef Carcass - Female Summary Report

Herd Owner: Sample Herd
 Herd Number: IE1234567
 Report Period: 01-Jan-2004 to 30-Jun-2004
 Date Printed : 07-JAN-2005

Overall Summary - relative to all beef females, progeny of suckler beef cows, slaughtered in the period 1st Jan - 30th Jun 2004.

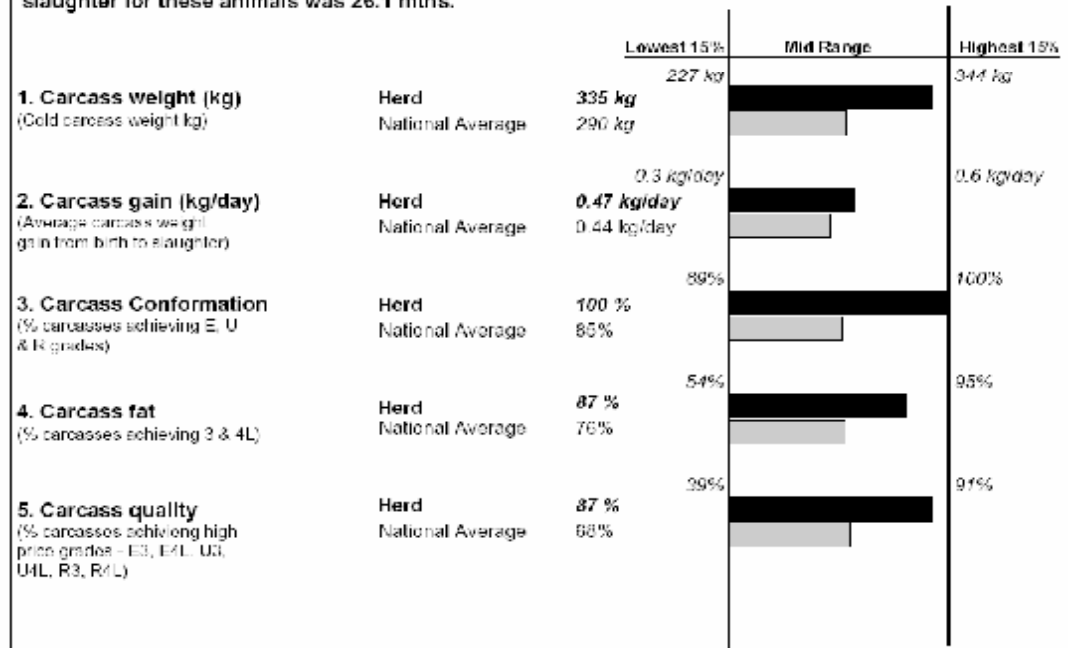
i. Farm & slaughter details

Total females slaughtered 55
 Average age at slaughter 23.7 mths
 Start slaughter date 21-Jan-2004
 Range in age at slaughter 14 - 31 mths
 End slaughter date 21-Jun-2004
 Beef Cows 2

ii. Carcass breakdown

	E	U	R	O	P	Total
1						0
2		1				1
3		10	10			20
4L		12	16			28
4						0
4H		3	3			6
5						0
Total	0	26	29	0	0	55

Slaughter Statistics - relative to all beef females slaughtered in period. National summary statistics are based on 156 herds with more than 10 females slaughtered during the period. Average age at slaughter for these animals was 26.1 mths.



Notes: The report contains information on beef females slaughtered from herds involved in the ICBF cattle breeding database. Only animals that are the progeny of suckler beef cows have been included on the report.

New on-farm beef recording service.

- Past approach;
 - Within-breed.
 - % useful data?
- Present & future approach;
 - Weights (+type)
 - 150-300 days
 - All animals & breeds.
- New beef recording service launching in 07.
- Available to all beef herds (pedigree & commercial).



New linear type evaluations

- Across breed
 - Pedigree & commercial animals.
- 17 traits (not 3);
 - 4 composites (muscle, skeletal, functionality & docility).
 - Expressed with a mean of 100 & standard deviation of 10 (top bulls=110+)
 - 13 linear type traits
 - Expressed in units of measurement.
- Major step forward for breeders.

New linear type evaluations

Breed	No.	Recs	Musc	Skel	Func	Doc
AA	26	752	91	98	103	101
AU	1	16	80	103	118	99
BA	3	39	101	114	98	96
BB	31	989	103	97	96	105
CH	176	18196	104	104	98	101
HE	23	591	88	103	100	105
LM	169	20844	101	103	102	96
SA	5	132	82	106	111	100
SH	1	12	85	103	109	101
SI	73	4346	97	107	104	100
Total	508	45917	100	103	101	100

- All pedigree animals & breeds will have new linear proofs for all traits.

3. Breeding program



3. Breeding Program.

- Breeding program that ensure best animals are parents of next generation.
- New program being developed
 - Target genetic gain of €18/cow/year (€18m/yr) vs current gain (€3/cow/year)
 - 3 elements; (i) elite cows, (ii) performance & progeny test, & (iii) elite progeny tested bulls
- Currently with DAF for consideration in 2007-2013 development plans.

i. Elite Females

- 2,000 cows in total (all breeds)
 - 1,000 male calves generated per year.
- Selected on Suckler beef index, diversity & conformation.
- Responsibility of herd-book (in consultation with ICBF & AI orgs).

ii. Performance & Progeny Test

- Top 300 bulls/yr selected for Tully test.
- Top 100 bulls selected for progeny test.
- Semen collected at end of Tully test.
 - Test semen & additional semen.
- Bulls sold at 18 month as “elite test bulls”.
- Bulls progeny tested in targeted herds
 - 1,500 herds * 40 cows (60,000 doses)
- Excellent farmer incentives
 - Co-ordinated program (inc synch package).
 - Cash incentives (€250/female + €100/male).

3. Elite progeny tested bulls.

- 20-25 elite progeny tested bulls (100 bulls).
 - 5-8 bulls returned to commercial AI
 - Remainder stock bulls.
 - Always sufficient semen for pedigree cows to breed next generation of stock bulls (additional semen collected at Tully).
- Full proofs (250 calving records, 100 slaughter records & 75 dau) after 4yrs.
- Excellent opportunity for breeders to get more involved in beef breeding.

Overall Summary

- Animal Events & database in place
 - Excellent industry link-ups
 - DAF suckler welfare initiative.
- New indexes rolling out.
 - Focused on profit (€) for breeders & farmers (e.g., stock-bull @ €100)
 - Identify strengths & weaknesses.
- New breeding program
 - Accelerate breed improvement & profit.
- Great opportunities for beef breeding