



Data Collection Methods used in the BDGP and the Development of Restful API's for Recording Herd Data.

Craig Vigors

Irish Cattle Breeding Federation



Beef Data and Genomics Programme



- 6 year scheme approved by the European Commission
- Launched by the Department of Agriculture in 2015
- Part of Ireland's 2014 – 2020 Rural Development Programme
- Goals:
 1. Increase the Genetic Merit of the Suckler Herds
 2. Reduce Greenhouse Gas Emissions of the Irish Beef Herds
- Expanded in 2017



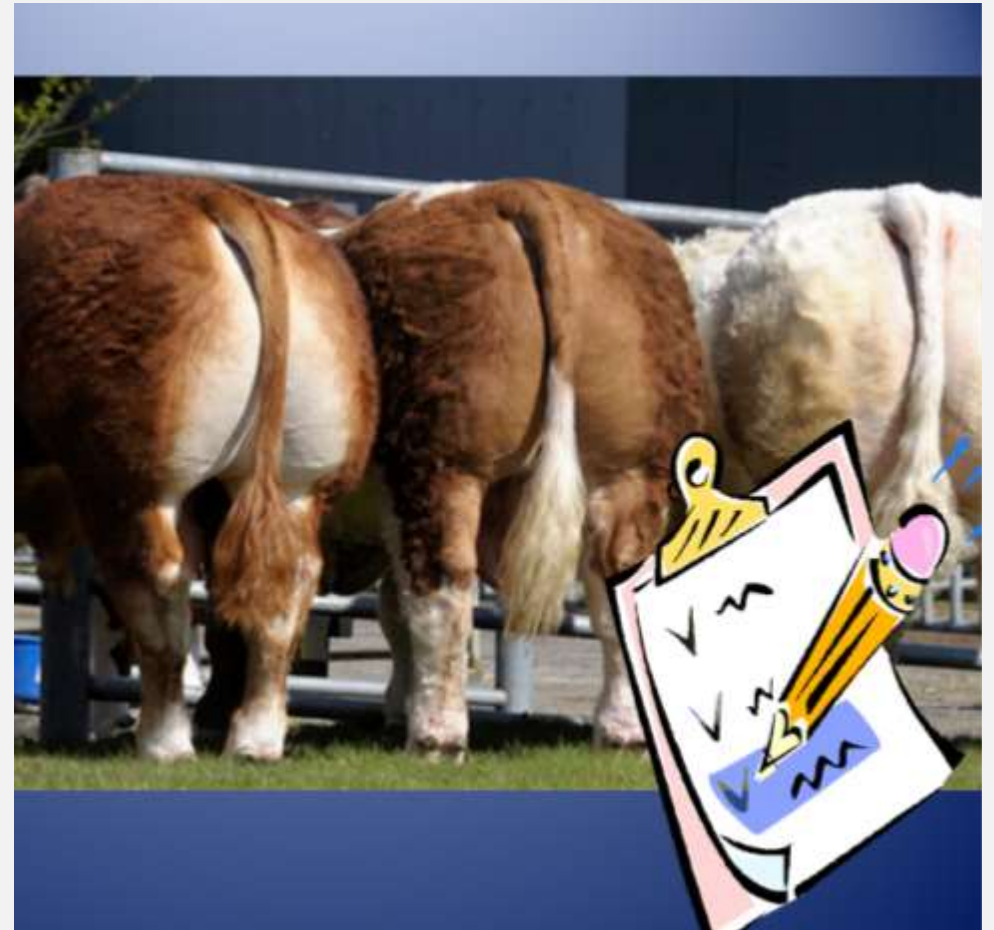
Beef Data and Genomics Programme



■ 6 Requirements

1. Record Calving Details
2. Complete Animal Surveys
3. Genotyping
4. Stock Bull and Female Replacement Strategy
5. Carbon Navigator
6. Training

- 23500 Participants
 - 33% Online Users



Paper Forms



Information Collected

Calf

- Sire
- Calving Ease
- Birth Size
- Vigor

(at 5 months)

- Quality
- Docility
- Scour
- Pneumonia

Dam

- Docility
- Milk-ability
- Departure Reason

Stock Bull

- Docility
- Functionality
- Departure Reason

IBCF
International Board of
Certification for
Financial Planners

IBCF®
Requirement 1: Site and Caving Ease

IBCF®
International Board of
Certification for
Financial Planners

Reel No: 012345678 | 012345678
Date: 29-Jan-2018

The following entries are seeking a valid site and / or caving ease. Please review and forward these details and return this page to the Requestor as provided.

Note: Correct information on site and caving ease must be given as part of your requirements under the Best Data Governance Programme.

1716 Caving Ease is not listed, search the relevant number (see bottom of page for more information.)

Enter the correct Site & Caving Ease for this Site Tag below. If it is already listed, there is no need to enter any number.

Enter if the Site is for sale and the date.

	Cavf Tag (Site Ease)	Caving Ease	Valid Site At Caving or Site Tag Tag	Site Statement
	1-0000 (2018-01-13)	1 2 3 4		<input type="checkbox"/>
	3-0070 (2018-01-16)	1 2 3 4		<input type="checkbox"/>
	4-0071 (2018-01-16)	1 2 3 4		<input type="checkbox"/>
	3-0072 (2018-01-23)	1 2 3 4		<input type="checkbox"/>
	9-0073 (2018-01-23)	1 2 3 4		<input type="checkbox"/>
	7-0074 (2018-01-23)	1 2 3 4		<input type="checkbox"/>
	9-0075 (2018-01-23)	1 2 3 4		<input type="checkbox"/>
	9-0076 (2018-01-23)	1 2 3 4		<input type="checkbox"/>
	9-0077 (2018-01-24)	1 2 3 4		<input type="checkbox"/>
	9-0078 (2018-01-24)	1 2 3 4		<input type="checkbox"/>
	9-0079 (2018-01-25)	1 2 3 4		<input type="checkbox"/>
	9-0080 (2018-01-25)	1 2 3 4		<input type="checkbox"/>

¹ 1. Normal caving, 2. Some assistance,
3. Considerable Difficulty, 4. Not possible

Signature of Field owner: _____

Date: / /

(Signature)

Return to: Retail Events Agency, FREDPOST, P.O. BOX No.72, Choolavay, Co. Cork
Page: 1 of 8



BAS3

Best Data & Genomics Programme
Registration 2: Annual Survey



Head No: 01234567 / 01234567
Date: 24-Jun-2018

The values listed below were alive and in your herd at 5 months of age. Call quality and call density must be recorded on all animals in this section.


Call Ear Tag	Birth Date	Call Quality	Call Quality
 0123456700127	01-Jan-2018	VS = Very Good / Very Good G = Good / Good A = Average / Average P = Poor / Poor WT = Very Poor / Very Poor (If empty, it will be a blank)	VS = Very Good G = Good A = Average P = Poor WT = Very Poor (If empty, it will be a blank)
 0123456700128	05-Jan-2018	VS G A P W	VS G A P W
 0123456700129	10-Feb-2018	VS G A P W	VS G A P W
 0123456700130	01-Jan-2018	VS G A P W	VS G A P W
 0123456700131	01-Jan-2018	VS G A P W	VS G A P W
 0123456700132	05-Jan-2018	VS G A P W	VS G A P W
 0123456700133	10-Feb-2018	VS G A P W	VS G A P W
 0123456700134	01-Jan-2018	VS G A P W	VS G A P W
 0123456700135	01-Jan-2018	VS G A P W	VS G A P W
 0123456700136	05-Jan-2018	VS G A P W	VS G A P W
 0123456700137	10-Feb-2018	VS G A P W	VS G A P W
 0123456700138	01-Jan-2018	VS G A P W	VS G A P W
 0123456700139	10-Feb-2018	VS G A P W	VS G A P W
 0123456700140	01-Jan-2018	VS G A P W	VS G A P W

Signature of herd owner: _____

Date:


Return to Animal Health Agency, 1988POB2, P.O. Box No.72, Clonsilla, Co. Ck
123456789

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DC-1

Boat Data & Generics Programme
Requirement 1: Dispute Resolution






Event No: 01234567
Date: 24-Jun-20

The events that have left your herd since the start of your 2019-20 term (shown are listed below).
 Mark up 1-2 of the most relevant reasons for the animal leaving your herd with an X.
 For a more extensive list of reasons, consult this information on [www.iccb.gov](#).

Event For Tag		Report Date	State Reasons For Leaving the Herd				
			PT = Parting LT = Aging	DC = Drought LB = Loss	IS = Feed & Logistics SL = Slaughter	SB = Slaughter OT = Other	
<i>(Please attach one tag to match with an X)</i>							
	IC1234567842111	11-Feb-2018	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	IC1234567842110	11-Feb-2018	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	IC1234567842111	11-Feb-2018	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	IC1234567842120	11-Feb-2018	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	IC1234567842121	11-Feb-2018	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	IC1234567842122	11-Feb-2018	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The stock facility that have left your herd since your 2019-20 term (shown are listed below).
 Mark up 1-2 of the most relevant reasons for the animal leaving your herd with an X.
 For a more extensive list of reasons, consult this information on [www.iccb.gov](#).

Stock Stock For Tag		Report Date	Stock Reasons For Leaving the Herd				
			PT = Parting LT = Aging	DC = Drought TP = Feed Logistics	IS = Feed & Logistics SL = Slaughter	SB = Slaughter OT = Other	
<i>(Please attach one tag to match with an X)</i>							
	IC1234567870224	08-Feb-2018	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	IC1234567870227	08-Feb-2018	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	IC1234567870228	08-Feb-2018	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Signature of herd owner: _____
 Date: / /

Return to Animal Events Agency, FREEPOST, P.O. BOX No 72, Chawdley, Co. Cork.
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Paper Forms



Beef Data & Genomics Programme
Requirement 1: Sire and Calving Ease

World No. 01234567 / IE1234567

The following calves are missing a valid sire and / or calving ease. Please review and correct these details and return this page in the freepost envelope provided.

Note: Correct information on sire and calving ease must be given as part of your requirements under the Beef Data & Genomics Programme.

This Calving Ease is not filled, circle the relevant number (see bottom of page for more information *)

Enter the correct Sire AI Code or Sire Ear Tag here. If it is already filled, there is no need to enter any number.

Only if the Sire is not known, tick the box below.

Calf Tag Birth Date	Calving Ease	Valid Sire AI Code or Sire Ear Tag	Sire Unknown
1-0869 2013-03-13	1 2 3 4		<input type="checkbox"/>
3-0870 2013-03-14	1 2 3 4		<input type="checkbox"/>

Signature of herd owner

Return to: RFL, c/o RFL, P.O. BOX 66, 12, Clonsilla, Co. Wick

Page 1 of 1

BMS2

Beef Data & Genomics Programme
Requirement 1: Sire and Calving Ease

ICBF.com

Herd Id: D1234567 / IE1234567

Date: 24-Jan-2016

The following calves are missing a valid sire and / or calving ease. Please review and correct these details and return this page in the freepost envelope provided.

Note: Correct information on sire and calving ease **must** be given as part of your requirements under the Beef Data & Genomics Programme.

If the Calving Ease is not circled, circle the relevant number (see bottom of page for more information *)

Enter the correct Sire AI Code or Sire Ear Tag here. If it is already filled, there is no need to enter any number

Only if the Sire is not known, tick the box below.

Calf Tag Birth Date	Calving Ease	Valid Sire AI Code or Sire Ear Tag	Sire Unknown
1-0869 2013-03-13	1 2 3 4		<input type="checkbox"/>
3-0870 2013-03-14	1 2 3 4		<input type="checkbox"/>

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Bull
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Paper Forms



Information Collected

World No. D1234567 / IE1234567

The following calves are seeking a solid sire and are eligible for the Beef Data & Genomics Programme.

Note: Correct information on sire and calving date is essential for the Beef Data & Genomics Programme.

This Calving Date is a full record. (See bottom of page for more information.)

Calf Tag	Calving Date
1-0000	2015-01-01
1-0001	2015-01-01
1-0002	2015-01-01
1-0003	2015-01-01
1-0004	2015-01-01
1-0005	2015-01-01
1-0006	2015-01-01
1-0007	2015-01-01
1-0008	2015-01-01
1-0009	2015-01-01
1-0010	2015-01-01
1-0011	2015-01-01
1-0012	2015-01-01
1-0013	2015-01-01
1-0014	2015-01-01
1-0015	2015-01-01
1-0016	2015-01-01
1-0017	2015-01-01
1-0018	2015-01-01
1-0019	2015-01-01
1-0020	2015-01-01

BAS3

Beef Data & Genomics Programme

Requirement 2: Animal Survey

ICBF.com

Herd Id: D1234567 / IE1234567

Date: 24-Jan-2016

The calves listed below were alive and in your herd at 5 months of age. Calf quality and calf docility must be recorded on all animals in this section.

Calf Ear Tag	Birth Date	Calf Docility	Calf Quality
IE123456760127	01-Jan-2016	VG = Very Good / Very Quiet G = Good / Quiet A = Average P = Poor / Difficult VP = Very Poor / Very Difficult (Ensure a value is circled)	VG = Very Good G = Good A = Average P = Poor VP = Very Poor (Ensure a value is circled)
IE123456760128	08-Jan-2016	VG G A P VP	VG G A P VP

1. Normal heifer, 2. Genotype, 3. Considerable Difficulty, 4. Very poor

Return to Animal Exports Agency, TREDP001.



Paper Forms



Best Data & Genomics Programme
Requirement 1: Sire and Calfing Date

World No: 01234567 (121234567)

The following calves are seeking a valid sire and / or calving date. Please review and complete the page in the freepost envelope provided.

Note: Correct information on sire and calving date must be given as part of your requirement.

This Calving Date is valid until: 31st Dec 2016. If you have not entered a valid date by then, please enter 'ZZ' to indicate you have no date to enter.

Calf Tag	Calving Date	Valid Sire All Code or Sire Ear Tag
1-0001	2016-01-01	1 2 3 4
1-0070	2016-01-01	1 2 3 4
1-0071	2016-01-01	1 2 3 4
1-0072	2016-01-01	1 2 3 4
1-0073	2016-01-01	1 2 3 4
1-0074	2016-01-01	1 2 3 4
1-0075	2016-01-01	1 2 3 4
1-0076	2016-01-01	1 2 3 4
1-0077	2016-01-01	1 2 3 4
1-0078	2016-01-01	1 2 3 4
1-0079	2016-01-01	1 2 3 4
1-0080	2016-01-01	1 2 3 4

* 1: Normal calving, 2: Genomic assistance, 3: Conventional Difficult, 4: Vet assistance

Return to: National Extent Agency, FREEDPOST, P.O. BOX 8672, Clonville, Co. Co. Page 1 of 1

IE123456740220 287	11-Feb-2016	<input type="checkbox"/> FY	<input type="checkbox"/> DC	<input type="checkbox"/> DL	<input type="checkbox"/> EB	<input type="checkbox"/> IJ	<input type="checkbox"/> LM	<input type="checkbox"/> MA	<input type="checkbox"/> ZZ
372123456740221 287	11-Feb-2016	<input type="checkbox"/> FY	<input type="checkbox"/> DC	<input type="checkbox"/> DL	<input type="checkbox"/> EB	<input type="checkbox"/> IJ	<input type="checkbox"/> LM	<input type="checkbox"/> MA	<input type="checkbox"/> ZZ
IE123456740222 287	11-Feb-2016	<input type="checkbox"/> FY	<input type="checkbox"/> DC	<input type="checkbox"/> DL	<input type="checkbox"/> EB	<input type="checkbox"/> IJ	<input type="checkbox"/> LM	<input type="checkbox"/> MA	<input type="checkbox"/> ZZ

The stock bull(s) that have left your herd since they sired your 2016+ born calves are listed below.

Mark up to 3 of the most relevant reasons for the animal leaving your herd with an X.

For a more extensive list of reasons, record this information on www.icbf.com.

At least one reason must be recorded on all animals in this section

Stock Bull Ear Tag	Depart Date	Bull Reasons for Leaving the Herd							
		FY = Fertility IJ = Injury	DC = Docility PP = Poor Progeny	DL = Feet & Legs IB = Inbreeding	EB = Euro-Stars ZZ = Other				
IE12345670224	20-Feb-2016	<input type="checkbox"/> FY	<input type="checkbox"/> DC	<input type="checkbox"/> DL	<input type="checkbox"/> EB	<input type="checkbox"/> IJ	<input type="checkbox"/> PP	<input type="checkbox"/> IB	<input type="checkbox"/> ZZ
37212345670227	20-Feb-2016	<input type="checkbox"/> FY	<input type="checkbox"/> DC	<input type="checkbox"/> DL	<input type="checkbox"/> EB	<input type="checkbox"/> IJ	<input type="checkbox"/> PP	<input type="checkbox"/> IB	<input type="checkbox"/> ZZ
IE12345670229	20-Feb-2016	<input type="checkbox"/> FY	<input type="checkbox"/> DC	<input type="checkbox"/> DL	<input type="checkbox"/> EB	<input type="checkbox"/> IJ	<input type="checkbox"/> PP	<input type="checkbox"/> IB	<input type="checkbox"/> ZZ

(Ensure at least one box is marked with an X)

Collected

am

Docility

Milk-ability

Departure
Reason

Stock Bull

Docility

Functionality

Departure
Reason



Paper Forms – Processing



Index - ICBF Forms

DocID : Document Type : Form Number :

Batch Number : Box Number : Scan Date :

Page Number : Scan User : Tag Number :

Score1 : Score2 : Score3 :

CSVExportDateTime : Score4 :

DocID	Document Type	Form Number	Batch Number	Box Number	Scan Date	Page Number	Scan User	Tag Number	Score1	Score2	Score3	CSVExportDateTime
14162986	BAS3	1416298609559	2067	BAS3	26/04/2017 16:18	3	LOR	1416298600419	2017	0	0	28/04/2017 22:30
14162986	BAS3	1416298609559	2067	BAS3	26/04/2017 16:18	3	LOR	1416298600257	2016	A	G	28/04/2017 22:30
14162986	BAS3	1416298609559	2067	BAS3	26/04/2017 16:18	3	LOR	1416298600259	2016	G	G	28/04/2017 22:30
14162986	BAS3	1416298609559	2067	BAS3	26/04/2017 16:18	3	LOR	1416298600260	2016	A	G	28/04/2017 22:30
14162986	BAS3	1416298609559	2067	BAS3	26/04/2017 16:18	3	LOR	1416298600261	2016	A	G	28/04/2017 22:30

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Paper

Index - ICBF Forms

DocID

Batch Number

Page Number

Score1

CSVExportDateTime

Search

DocID	Document Type	For
14162986	BAS3	
14162986	BAS3	
14162986	BAS3	
14162986	BAS3	
14162986	BAS3	



BAS3

Beef Data & Genomics Programme Requirement 2: Animal Survey



26 APR 2017

Date: 17-Apr-2017

Herd Id:

The recorded stock bulls used on your calves are listed below. Bull docility and bull functionality must be recorded on all animals in this section.

Bull Functionality is the ability of the bull to perform over a long period of time.

Stock Bull Ear Tag	Calving Year	Bull Docility	Bull Functionality
		VG = Very Good / Very Quiet G = Good / Quiet A = Average P = Poor / Difficult VP = Very Poor / Very Difficult (Ensure a value is circled)	VG = Very Good G = Good A = Average P = Poor VP = Very Poor (Ensure a value is circled)
	0419	2017	VG G A P VP

The calves listed below were alive and in your herd at 5 months of age. Calf quality and calf docility must be recorded on all animals in this section.

Calf Ear Tag	Birth Date	Calf Docility	Calf Quality
		VG = Very Good / Very Quiet G = Good / Quiet A = Average P = Poor / Difficult VP = Very Poor / Very Difficult (Ensure a value is circled)	VG = Very Good G = Good A = Average P = Poor VP = Very Poor (Ensure a value is circled)
	0257	18-Jul-2016	VG G <u>A</u> P VP
	0259	12-Jul-2016	VG <u>G</u> A P VP
	0260	19-Jul-2016	VG G <u>A</u> P VP



Score3	CSVExportDateTime
	28/04/2017 22:30
	28/04/2017 22:30
	28/04/2017 22:30
	28/04/2017 22:30
	28/04/2017 22:30



Web Application - Desktop

Calf Information

- [Record Sire](#)
- [Record Calving Ease](#)
- [Record Birth Size](#)
- [Record Vigour](#)

For calves 5 months of age and older:

- [Record Docility](#)
- [Record Quality](#)
- [Record Scour](#)
- [Record Pneumonia](#)

Dam Information

- [Record Dam Docility](#)
- [Record Milk Ability](#)
- [Record Departure Reasons](#)

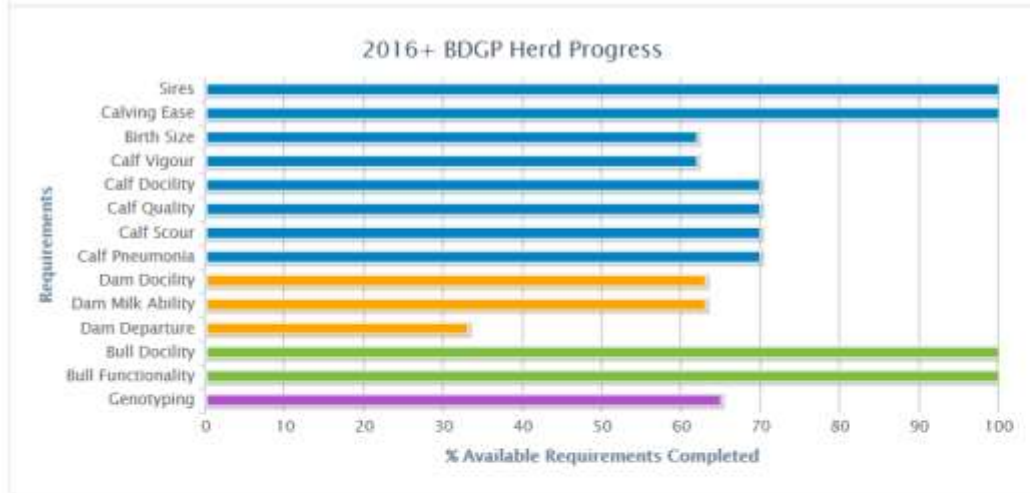
Stock Bull Information

- [Record Bull Docility](#)
- [Record Functionality](#)
- [Record Departure Reasons](#)

Genotype Information

- [Self-Selection](#)
- [View Genotype Details](#)

Herd Summary



Herd Details

[Calves](#) [Dams](#) [Sires](#) [Departed Dams](#) [Departed Sires](#)

Showing 1 to 74 of 74 entries

Show filters

Excel

PDF

Print

Calf Tag	Sex	Birth Date	Death Date	Dam	Sire	Calving Ease	Birth Size	Vigour	Docility	Quality	Scour	Pneumonia
01-11-16-00001	F	17-FEB-16		01-11-16-00000	UNKNOWN	1	M	G	G	VG	0	0
01-11-16-00002	M	31-JAN-16	10-MAY-17	01-11-16-00000	UNKNOWN	1	M	VG	G	VG	0	0
01-11-16-00003	F	22-APR-16		01-11-16-00000	01-11-16-00000	1	M	VG	G	G	0	0
01-11-16-00004	F	23-APR-16		01-11-16-00000	01-11-16-00000	1	M	VG	G	G	0	0
01-11-16-00005	F	24-APR-16		01-11-16-00000	01-11-16-00000	1	L	VG	G	G	0	0
01-11-16-00006	F	24-APR-16		01-11-16-00000	01-11-16-00001	1	M	VG	G	G	0	0

Web Application - Desktop



Calf Information

Record Calf Docility Enter docility information, all calves listed are 5 months of age or older

Un-do Changes

Help

- Record Sire
- Record Calving
- Record Birth S
- Record Vigour

For calves 5 r
age and older

- Record Docility
- Record Quality
- Record Scur
- Record Pneum

Herd Details

Calves

Showing 1 to

Calf Ta

11/11/16

11/11/16

11/11/16

11/11/16

11/11/16

11/11/16

11/11/16

Showing 1 to 13 of 13 entries

Hide filters

Excel

PDF

Print

Animal Number From Date To Date Sex Dam Number

Calf Docility

Animal Number	Birth Date	Sex	Dam Number	Calf Docility				
11/11/16	01-NOV-16	M	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult
11/11/16	27-OCT-16	M	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult
11/11/16	03-NOV-16	M	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult
11/11/16	05-NOV-16	M	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult
11/11/16	02-NOV-16	F	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult
11/11/16	31-OCT-16	M	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult
11/11/16	23-OCT-16	M	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult
11/11/16	20-OCT-16	F	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult
11/11/16	23-OCT-16	F	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult
11/11/16	01-NOV-16	F	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult
11/11/16	07-NOV-16	F	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult
11/11/16	05-NOV-16	M	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult
11/11/16	01-NOV-16	F	11/11/16	Very Good / Very Quiet	Good / Quiet	Average	Poor / Difficult	Very Poor / Very Difficult

Unsaved changes. You have edited 3 rows.

Cancel

Save Changes



Web Application - Mobile



ICBF Cow Milk Ability Menu

Un-do Changes

Search Filter

RECORD 2347

BIRTH DATE: 22-JAN-14

CALVING DATE: 05-MAY-17

COW MILK ABILITY SCORE: Very Good ▼

RECORD 1200

BIRTH DATE: 17-JAN-14

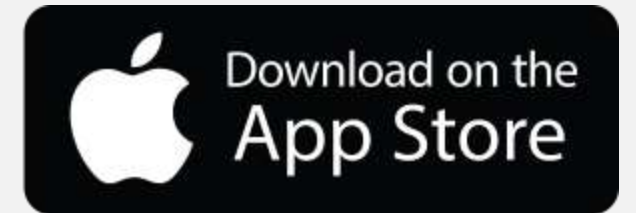
CALVING DATE: 06-MAY-17

COW MILK ABILITY SCORE: Select Score ▼

Prev 1 Next

You have edited 1 row.

Save Cancel



Data Quality – Calf Docility Heritability



Farmer: 0.30

Genetic correlation of 0.78 between two traits

Technician: 0.22

Farmer has longer to observe the animal?

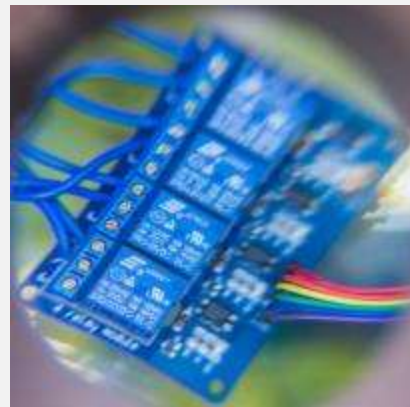
Score	Animals	% of Total
Very Quiet	66144	12.2
Quiet	219502	40.6
Average	226709	41.8
Difficult	28337	5.2
Very Difficult	1553	0.3

Score	Animals	% of Total
Docile	15287	13.9
Restless	73835	67.3
Nervous	18880	17.2
Flighty / Wild	1503	1.4
Aggressive	144	0.1

Ross Evans (2012). The benefits of using farmer scored traits in beef genetic evaluations [PowerPoint slides]. Retrieved from <http://www.icar.org/index.php/icar-meetings-news/38th-session-cork-ireland/>



API – Application Programming Interface



Herd API's



- A set of web services available to software and sensor providers to provide data services to farmers.
- REST/JSON
 - Smaller data transfer when compared to SOAP/XML
 - Easy to process (if HAL is used).
 - Flexible authentication using OAuth 2.0
 - Data access is controlled by limiting the scope



Herd API's – GET Insemination Example



GET ▾

http://apitest.dev64.icbf.com/herd-fertility/insemination?start_date=10-Apr-17

```
{
  "_links": {
    "self": {
      "href": "http://apitest.dev64.icbf.com/herd-fertility/insemination?start_date=01-Apr-17&page=1"
    },
    "first": {
      "href": "http://apitest.dev64.icbf.com/herd-fertility/insemination?start_date=01-Apr-17"
    },
    "last": {
      "href": "http://apitest.dev64.icbf.com/herd-fertility/insemination?start_date=01-Apr-17&page=1"
    }
  },
  "_embedded": {
    "insemination": [ {
      "id": "1478411718",
      "animal_id": "IE123456790741",
      "activity_date": "03-APR-17",
      "activity_type": "AIN",
      "bull_used": "RUU",
      "editable": "UD",
      "_links": {
        "self": {
          "href": "http://apitest.dev64.icbf.com/herd-fertility/insemination/1478411718"
        }
      }
    }
  ]
},
"page_count": 1,
"page_size": 100,
"total_items": 1,
"page": 1
}
```



Herd API Authentication – OAuth 2.0



www.icbf.com

 <https://>

Resource Owner
(Farmer)



1. Login with ICBF credentials

2. Receive Authorization Code

3. Send Authorization Code

4. Receive Refresh and Access Tokens

A screenshot of the ICBF login page. At the top is the ICBF logo and the text 'Irish Cattle Breeding Federation'. Below this is the instruction 'Sign in using your ICBF username and password'. There are two input fields: 'Username:' and 'Password:'. A 'Login' button is located at the bottom of the form.

ICBF Authorisation Server



Herd API's – Services Available



Methods Available : GET (read) POST (create) PUT (update) DELETE

Herd Details

- Animal Details

Evaluation

- Beef
- Dairy

Health

- General Health
- Treatments

Fertility

- Heat
- Insemination
- Pregnancy Diagnosis

Weight

- Live Weight

Veterinary

- Medicine

Lactation

- Period



Conclusion

Paper

- High volume of data, slowly being replaced with new technology
- Will remain for the foreseeable future

Web

- Volume increasing over time to a point
- Provides convenience and timeliness in recording

Mobile

- Further improvement of convenience and timeliness

API

- Facilitates many data sources, e.g. sensors
- Devices that use the API need to be made available.

Questions?