




IRISH CATTLE BREEDING FEDERATION
& SHEEP IRELAND

**Perspectives of international
cooperation for animal improvement.**

Brian Wickham
Chief Executive
ICBF & Sheep Ireland



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In the late 1990's Ireland decided to establish a new infrastructure for Cattle and more recently, in 2008, for Sheep breeding.

This is the story since with a particular emphasis on how international cooperation has been a key element in bringing Ireland to the fore front of animal breeding worldwide. Any country can do this but not on their own.

My presentation will focus on cattle breeding and ICBF. Please feel free to refer to our website www.icbf.com for more information.



Content

- Key elements of cattle breeding:
 - Mission
 - Organisation
 - Database
 - Genetic Evaluations
 - New Technology
- Summary



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My presentation is in three parts – , ...

1. Mission

- *Established with interim Board in 1997*
- *Commenced operations in 1998*
- *Current structure in 2000*
- *Mission: achieving the greatest possible genetic improvement in the national cattle herd - Dairy and Beef*



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First element – a clear mission.

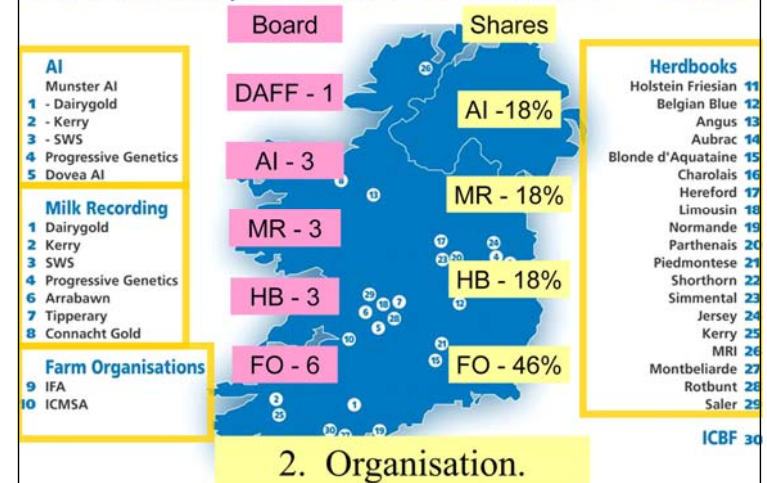
ICBF is the Irish Cattle Breeding Federation Society Limited which was established with an Interim Board in 1997.

I was the first employee, recruited from NZ, and began work on 1st March 1998, with the current structure being finalised in 2000.

The mission of ICBF is to **achieve the greatest possible genetic improvement (in the economic sense) of the national cattle herd – dairy and beef.**

There is no international element to this – Ireland decided for itself what is wanted to do in cattle breeding. However, in coming up with this mission we benefitted from knowing the experiences of other countries in Europe, North America, Australia and New Zealand. How did we find this out? We have been an ICAR and Interbull member for many years but importantly in my previous work, in NZ, I was very active in the establishment of Interbull. This gave me an extensive network of contacts actively working in cattle breeding worldwide.

MEMBERS, BOARD & SHARES - ICBF



2. Organisation.

The second is an organisation to deliver the mission. This is ICBF.

ICBF's members and owners are four groups of organisations: the artificial insemination (AI) co-operatives, the organisations providing milk recording (MR) services, the Herd Books (HB), and the Farm Organisations (FO) representing farmer interests.

The Board of 16 includes one from DAFF, 3 from each of the AI, Milk Recording and Herd Book groups and 6 from Farmer Organisations. The shares are held in three groups of 18% (AI, MR and HB) and 46% by the Farm Organisations.

The stakeholders in cattle breeding control the decisions made by ICBF.

3. Database Data & Information Sharing Agreement

- Contributors retain ownership
- Farm data through “Animal Events”
- Electronic sharing of data collected
- Integrated genetic evaluations
- **Herd owner controls access**
- **Data for research**
- Information for service providers
- HerdPlus® - information of herd owner
- User-pays & full cost recovery



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The 3rd element is an information system or database.

We established a shared database, which has become the jewel in the crown of ICBF. The initial development was based on the IRIS system developed by NRS in the Netherlands. IRIS was chosen in an International tender. We also established a local team of software developers to customize the front-end, or data collection aspect, and back-end for information presentation. Over a period of time, and a lot of local innovation & development to meet the needs of our industry, the database system became our own.

The real key to our database is the data & information sharing agreement. I do not have time to cover all the elements and will just highlight two of the most important parts – firstly the farmer (herd owner) controls access to the data for his/her herd and secondly, all data is readily available for research, albeit subject to a number of conditions to protect confidentiality and intellectual property.

3. Database – single source without duplication

Source of data	Type of data
Farms	Animal events – birth, calving, weights, docility,
DAFF – official system	Registrations, movements, deaths, exports ...
Meat Factories	Slaughter (date, weight, grade ...), Images
Marts	Sale (date, weight, price ...)
AI	Insemination (date, sire)
Milk Recording	Milk weight
Laboratories & Milk Processors	Milk composition, disease test results, genotypes
Linear scoring	Weights, scores – beef & dairy
Genetic evaluations	Breeding values, reliabilities, indexes ...



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All data of relevance to cattle breeding in Ireland is held in this system. Data is collected from many sources.

Farms,

DAFF's official system for calf registration and animal movements in accordance with EU regulations,

Meat factories for all cattle slaughtered in Ireland,

Marts for animals sold by farmers to other farmers and exporters of live animals,

artificial insemination service providers,

milk recording organisations,

laboratories for testing milk, disease testing and genotyping,

linear scorers (dairy & beef) and

the genetic evaluation system is tightly linked to the database, sourcing data from it and storing results in it.

3. Database Information – single source – to many users

Users	Type of Information
Service providers: - Milk recording - Herd Book - AI Stud & Field - Advisory - Veterinarians - Milk processors - Researchers	• Customer profiles • Service details • Genetic evaluations • Herd Books • Discussion Groups & Farmer Reports • Elite animals • Research results • Active AI bull lists • Raw data files for research
Farmers direct	• HerdPlus®- genetic evaluations, reports • GROW®- reports • GENE IRELAND®- progeny test
General public: www.icbf.com	• Statistics, Reports, Publications ... • Genetic Evaluations



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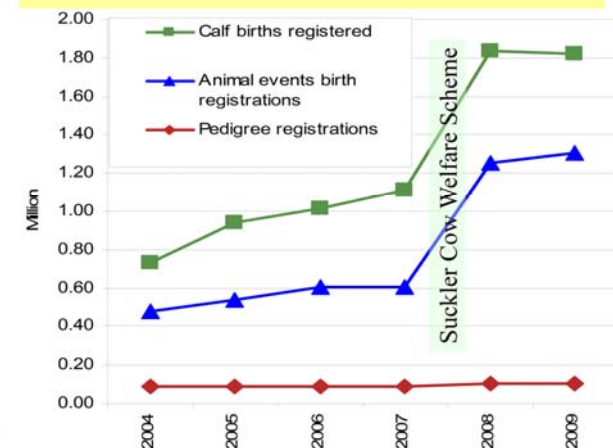


Information from the database is provided to farmers through services from many organisations including those providing milk recording, herd book, artificial insemination (both stud and field services), farm advisors, veterinarians, milk processors and researchers.

Farmers also have direct access to the database, and the data and information on their own herd and animals through our HerdPlus® service.

The general public, and that includes everybody in this room, can obtain a wealth of information from our website, www.icbf.com.

Growth of Participation – 90% of calves born in 2009



Over the years the level of participation by dairy and beef cattle has grown rapidly with the help of industry wide initiatives including, most recently, the suckler cow welfare scheme. The result is that in 2010 some 90% of all dairy and beef cattle are participating in one or more aspects of the ICBF database.

Beef Genetic Evaluations

- [Cattle Statistics](#)
- [Annual Reports](#)
- [Academic Papers](#)
- [Glossary](#)

[Learn more about ICBF](#)

- [Contact Information](#)
- [Costs and Benefits](#)
- [The Database](#)
- [Members](#)
- [Structure](#)
- [International Cattle Breeding Federation](#)
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ICBF Website
www.icbf.com

Any comments on the new icbf website can be submitted here

Online Services

User name

Password

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Where do I get my username and password?
Experiencing problems - [Click Here](#)

Bull Search

Search by:
AI Code, Tag, Herd Book No, MTT No

or
Name or part of name

[Search](#)

For an example of the sort of information that is available publically, go to our website and look up CF52. This is what you will find.

4. Beef Bull Euro-Star Evaluation

€uro-Star Rating (ICBF, April 2010)

AI Code: CF52	Breed: CH (100%)	Sire: HERMES / HME
Animal Name: DOONALLY NEW	Owner: NATIONAL CATTLE BREEDING CNTR	Dam: INTRUSE / 7193100567
Date of Birth: 18-JAN-1997	Date of Evaluation: April 2010	IMG: CAMPAGNARD / 1887109836
National ID:	Linear Type	Pedigree
International ID: CHLFR4J007197125709	Calving Traits	Weaning
	Beef Carcass	Milk

% Rank	Star Rating (within breed)	Index and Traits	€uro-Value
94%	★★★★★	Suckler Beef Value (SBV)	€131
98%	★★★★★	Weaning Export	€108
99%	★★★★★	Beef Carcass	€175
1%	★	Daughter Fertility	€-81
1%	★	Daughter Milk	€-121

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1%	★	Daughter Fertility	€-81
1%	★	Daughter Milk	€-121

% Rank	Star Rating (within breed)	Index and Traits	€uro-Value
11%	★	Calving Difficulty (% 3 or 4)	11.29%
99%	★★★★★	Gestation Length (Days)	79 Day(s)
92%	★★★★★	Docility (1-5 score)	0.14

% Rank	Star Rating (within breed)	Index and Traits	€uro-Value
5%	★	Calving Difficulty (% 3 or 4)	11.29%
78%	★★★★★	Gestation Length (Days)	79 Day(s)
93%	★★★★★	Docility (1-5 score)	0.14

Data Reliability: 40% - 60% = Average 20 - 40% = Below Average < 20% = Poor

Element 4, of a successful cattle breeding program is a credible and comprehensive genetic evaluation system.

Our system has been developed to identify the animals that generate the greatest profits for Irish farmers. In developing this system we have made full use of a wide range of international linkages and collaborations.

For this Charolais bull the ancestry data has come from France. The performance data from Ireland. The economic indexes were developed with a major scientific input from Peter Amer working in New Zealand. The genetic evaluation software is MIX99 developed by MTT in Finland. The genetic evaluation models have benefitted greatly from research conducted by Roel Veerkamp in the Netherlands. Ross Evans is currently responsible for the beef production traits. His PhD was partly supervised by Prof Dorian Garrick a New Zealander currently on the academic staff of Iowa State University in the USA. The calving trait evaluations, for beef and dairy, are the responsibility of Francis Kearney who has studied at Purdue University in the USA and completed a PhD at Edinburgh University.

I am sure you get my point. These easy to use evaluations for Irish farmers are the result of a major international effort involving contributions from many countries and institutions.

4. Dairy Genetic Evaluations

- [Cattle Statistics](#)
- [Annual Reports](#)
- [Academic Papers](#)
- [Glossary](#)

[Learn more about ICBF](#)

- [Contact Information](#)
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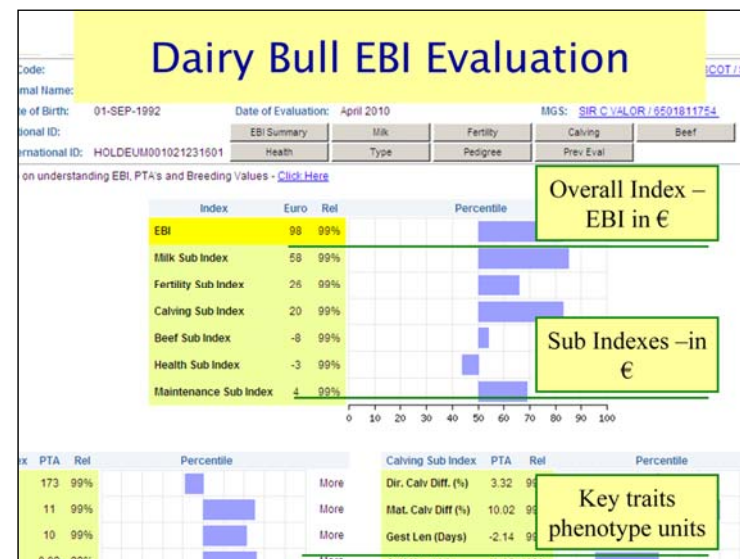
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Bull Search

Search by:
 AI Code, Tag, Herd Book
 NUTT
 Name or part of name

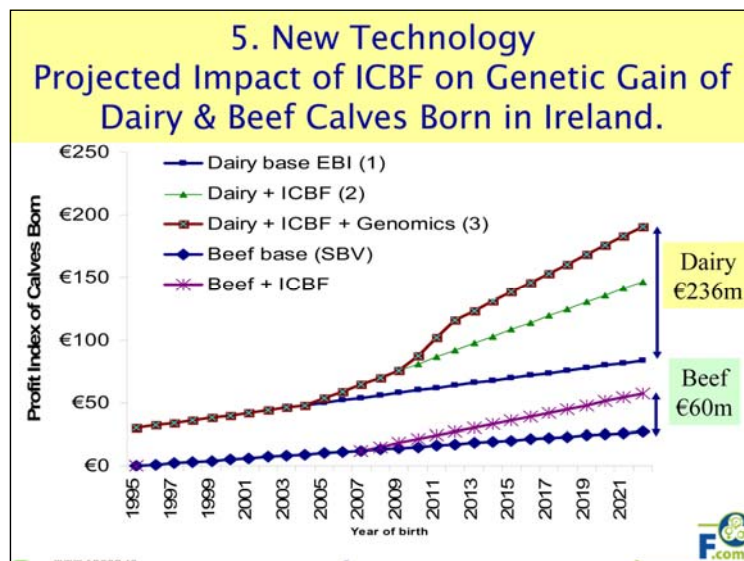
GMI

Here is a dairy example for the bull GMI.



The output is a simple index – the EBI. This index, like the beef index, is the result of the genuine world wide collaboration.

However, it benefits from the unique and special organisation that is Interbull. With the help of Interbull Irish dairy farmers are able to obtain an EBI for every dairy bull that has been evaluated in 30 other countries, and to make an informed decision of the benefit of using semen for breeding replacements for the herd. This is a perfect illustration of the power of international collaboration in cattle breeding. It is worth many million € to Irish farmers but costs just €24,000 per year. Any country for which dairy cattle are an important industry, big or small, is wasting a lot of money if it does not belong to ICAR and participate in Interbull.



This brings me my fifth and final point. The ability to evaluate and exploit new technologies in cattle breeding.

One of the greatest challenges to cattle breeders in any country is to evaluate and exploit new technologies. We are in the midst of just such a challenge. Recent developments in DNA technologies have made it possible to alter our dairy breeding programs so that the main selection decisions can be made soon after potential breeding animals have been born resulting in substantial cost savings while at the same time increasing rates of genetic gain.

Ireland is one of the leaders in implementing the use of genomic selection for breeding dairy cattle. The key factors in achieving this position include:

- The sharing of genotypes with other countries to achieve a critical mass.
- International collaboration and participation in ICAR and Interbull forums where experience and knowledge is freely shared.
- A strong focus on the best interests of Irish farmers and the profitability of their business, and
- An internationally trained, highly skilled, open minded team dedicated to delivering benefits for Irish farmer.

This graphs shows that the annual benefit, increased annual profitability, for the Irish dairy industry is projected at €236 million or some €236 per milking cow. These returns are real and sustainable. They are simply not possible without international collaboration and cooperation. It took Ireland 12 years to reach this point. How long will it take your country?

Summary

- Animal breeding is a unique and powerful tool for improving the profitability of cattle farming in Ireland.
- Irish animal breeding has been transformed through a unique partnership between farmers, the breeding industry and DAFF.
- New technologies, market imperatives and economic pressures are providing the motivation for this transformation to continue.
- Continued investment will give excellent returns.
- The model established relies heavily on international cooperation and collaboration.
- Membership and full participation in the activities of ICAR and Interbull are fundamental to the achievements in Ireland cattle breeding.

Sheep Ireland
www.sheep.ie

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I would like to extend a personal invitation to you to come to Ireland for the ICAR 2012 conference. This will be held in city of Cork from 28th May to 1st June 2012. I promise you we will share everything we have learnt over the last few years.

Thank you.