

A new Era for Cattle Breeding in Ireland

Pat Donnellan

When people hear of a database, they often think of a computer with a large volume of information relating to a certain sector, and they would not be far wrong, but the use that this data can be put to is often not immediately clear.

The establishment, in 2000, of the ICBF Cattle Breeding Database in Ireland is one such example of a database. The ICBF database has strong links with many different important beef and dairy organisations within Ireland and has changed how they manage their data. Instead of each organisation being a stand-alone entity in terms of data gathering, storage and use, they now use the ICBF database, which has removed duplication of information (e.g. Dates of birth).

Any organisation using the database benefits greatly in terms of efficient management of the required data. Farmers interacting with these organisations also benefit as the duplication of data has been removed and there is much more 'value add' in terms of information received back from the database. . Many different animal activities now involve the ICBF database. Too many to mention but to just zone in on one area that has benefited from the use of the database is the National Beef Progeny Test program, also known as 'GENE IRELAND'.

Centralised Progeny Testing

Progeny testing of beef bulls in Ireland up until the early 2000's was carried out by each AI Station, usually on the farmland surrounding their AI Stud. This was called the 'Centralised Progeny Test' program and was overseen by DAF Liaison Officers. Farmers were surveyed to find out how easily (or not) the first calves from the new Progeny Test Bulls were born. The AI Stations would then purchase between 10-20 calves from their new beef and dairy test bulls. These calves were always out of dairy cows. They would also purchase calves from well proven beef and Holstein bulls so as they would have animals to compare their test bull's progeny against. They would rear all of these calves together, weighing them regularly before finally slaughtering them and recording their carcass data.

It was a system that served the Irish AI industry well and was a method through which many top beef AI sires were identified. That said, like any process, there were areas that could be improved. Two of which are the following:

1. First Breeding Values never updated

Each test bull got one set of genetic evaluation figures based solely on those calves purchased for the 'Centralised Progeny Test' and the figures would remain the same for the lifetime of the bull, with no new data ever being recorded on their progeny. Like any assessment process, the more information you have, the more confidence you will have on which to draw your conclusions. New progeny being constantly included in a bull's proof ensures that the estimation of his genetic strengths and weaknesses are continuously improving.

2. Progeny Test Results limited to Bulls in AI Stations only

It was also only those young beef bulls purchased by and standing in AI stations that were progeny tested. Stock bulls or imported AI sires never had the opportunity to have their progeny compared against the progeny of these AI station owned AI bulls.

GENE IRELAND Progeny Test Program – a new era

The establishment of the 'Animal Events' on-farm data recording system and the ICBF database allowed the progeny testing of bulls to move to an 'On-Farm' approach and hence 'GENE IRELAND' was launched. This meant that AI stations no longer had to safeguard the recording of data on their new test bulls by purchasing progeny and rearing them through to slaughter. It also meant that with fresh data being constantly recorded, a bull is effectively always on 'Progeny Test' with his breeding values constantly moving until such time as so many of his progeny have had data recorded on them that his figures do not move any more.

GENE IRELAND Process:

- Bull Owner makes 700 straws of young bull available for progeny testing.
- ICBF signs up herds willing to use GENE IRELAND test bull semen.
- Herd owner records 'On-farm' data through the ICBF database (calving ease, liveweight, etc).
- ICBF stores 'Off-farm' data through ICBF

Irish Grassland Association

Newsletter No. 11 April 2011

member organisations (mart, factory data, etc).

- ICBF includes all available data in its Genetic Evaluations (January, April and August).
- ICBF publishes the results of these evaluations in the form of 'Euro-Star' Indexes.

An example of how the ICBF database allows the data recorded on the progeny of a young bull to build up over time, and how his genetic evaluation reflects this data is the Calving Survey records for the Charolais Testbull 'Roundhill Doc 1068' owned by 'Dovea AI'. The bull entered the G€N€



IRELAND program in 2009. A summary of calving ease, gestation and mortality data recorded on his progeny so far is shown below, as is the effect of

Number of Progeny Records				Genetic Evaluations		
Date	Calving Difficulty	Gestation	Mortality	Date	Calving Difficulty %	Reliability %
Jan 2011	390	195	368	Jan 2011	8.52	95%
Aug 2010	298	102	284	Aug 2010	8.34	94%
April 2010	50	13	44	April 2010	6.31	66%
Jan 2010	11	0	11	Jan 2010	6.53	52%
Aug 2009	0	0	0	Aug 2009	7.83	45%

this data on his genetic evaluations.

As the number of calving survey records increases over time – the 'Reliability %' figure also increases. A progression of a bull's Genetic Evaluation results over time can be seen on www.icbf.com.

The system means that there is now a level playing pitch and that all sires, regardless of whether they were in AI stations, imported in straws or were stock bulls on farm, can be evaluated in the same way.

Although AI Sire's will of course have the opportunity to have more progeny on the ground across more herds, over time a farmer filling in the Animal Events book, selling breeding bulls and in-calf heifers can quickly build up a lot of progeny data on a particular stock bull. An example of a stock bull that was not 'Progeny Tested' but who, over time, built up enough progeny records of his own to allow comparison with some of the top AI Bulls is



the Limousin stock bull turned top AI Sire 'Roundhill Saturn' owned by Ray Carolan, Co. Cavan and bred by Tim and Doreen Corridan, Co. Limerick. His semen is now marketed by NCBC.

Born on the 15th December 2001, he is sired by 'Ideal 23' and out of a 'Geant' cow 'Roundhill Meridian'. Ray has been recording all of his progeny (mostly pedigree) through Animal Events over the years. The calving, linear score, weight and carcass data that has been recorded on his progeny and grand progeny have resulted in his Euro-Star ratings to rank him up above most AI Sires.

This bull is a prime example of how the ICBF database allows a bull to demonstrate his genetic merit while still being an on-farm stock bull and then make the transition to being an AI sire – appearing alongside the top ranking beef AI sires.

Roundhill Saturn - RHN				
Euro-Star Rating (ICBF, Jan 2011)				
% Rank	Star Rating (Within Breed)	Index and Traits	Euro-Value	Data Reliability
99%	★★★★★	Suckler Beef Value (SBV)	€162	71%
99%	★★★★★	Weanling Export	€82	78%
98%	★★★★★	Beef Carcass	€118	79%
99%	★★★★★	Daughter Fertility	€66	23%
76%	★★★★	Daughter Milk	€29	40%
Other Key Traits				
79%	★★★★	Calving Difficulty (% 3 or 4)	4.21%	86%
99%	★★★★★	Gestation Length (Days)	2.71 Days	53%
72%	★★★★	Dolality (1-5 score)	-0.04	81%

Source: www.icbf.com - Bull Search