

# Growing livestock connection between Ireland and Australia

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Following his talk at Sheep 2010 in June, Prof David Cottle from the University of New England, Armidale, Australia returned to Ireland in late August 2010 for three months study leave at ICBF/Sheep Ireland, Bandon and Lyons Research Farm, UCD.

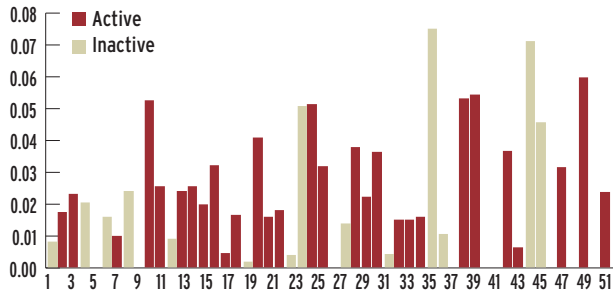
While at ICBF, he analysed the level of inbreeding in each pedigree Belclare flock in Ireland (Figure 1) with the assistance of Thierry Pabiau at Sheep Ireland.

With UNE colleague, Prof Brian Kinghorn, he is designing a software program that can optimise mate allocation. The program can determine which available rams should be selected and mated to specific ewes in flocks to achieve the desired balance between predicted progeny breeding values for production traits and their inbreeding levels. This approach is used more commonly in the

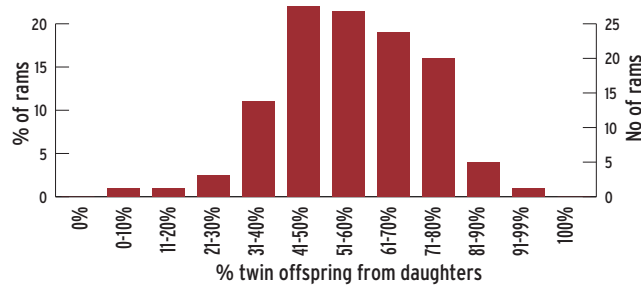


David Cottle and Alan Fahey with a Belclare ram.

**Figure 1**  
Average inbreeding coefficient in current active and inactive Belclare pedigree flocks



**Figure 2**  
Percentage of offspring that were twins bred from the adult daughters of rams with more than 15 adult daughters.



intensive pig and poultry industries but could be used in the sheep and cattle industries.

Prof Cottle chose to work on the Belclare breed data because the Society had given their full flock book data from 1985 to Sheep Ireland. ICBF CEO, Dr Brian Wickham, observes that as other breed societies make their data available to Sheep Ireland, similar analyses could be done for them in future.

Inbreeding needs to be managed when flock or herd sizes are small in any breed, as is the case in Ireland, because only a small number of new sires can be introduced each year.

Liam Delaney, Belclare Society secretary, states: "Inbreeding has always been in the back of our minds over the years as we cannot purchase breeding stock elsewhere. The program Dr Cottle has been developing could be very useful to us in the future."

This work will be completed after Prof Cottle returns to Australia. It may form the basis of a Sheep Ireland web-based livestock mating service provided to breed societies with an appropriate database there.

While working at UCD Lyons, Prof Cottle turned his attention to twinning in the Belclare breed.



The work is aimed at developing the appropriate selection index to select animals for higher mean litter size but lower variance in litter size.

Most sheep breeders want to breed more twins but triplets and quadruplets can be a problem as they have lower survival rates and either take longer to reach target slaughter weights, or have lighter carcasses at the same slaughter age.

Recent European research work has suggested that there may be opportunities to genetically select for the proportion of ewes lambing twins but against those lambing with higher litter sizes as the environmental variance of litter size (as opposed to its genetic variance), is also under some genetic control.

In the Belclare pedigree flocks, some rams have had

all their daughters produce only twin offspring whereas some rams have daughters producing less than 10% twin offspring (Figure 2).

In essence, the work is aimed at developing the appropriate selection index to select animals for higher mean litter size but lower variance in litter size.

The desired result in flocks is the breeding of ewes that only breed twins, no matter what the environment. This work will continue at ICBF, UCD and UNE.

Future collaborative work between ICBF, UCD, Teagasc and UNE is also planned, based on the use of a pasture intake measurement system

recently invented by Prof Cottle. The objective is to progeny test beef heifers for feed intake efficiency at pasture bred from leading young bulls, as well as measuring other future traits of importance.

Dr Wickham said that the method will need to be integrated into a national suckler herd replacement strategy in the most cost effective way and that this needs to be determined by economic modelling of the beef farm system. Prof Cottle's visit will lead to an ongoing collaboration between livestock researchers that should benefit the livestock industries in both countries.

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## First LambPlus ram sale

THE first ever multibreed recorded LambPlus sale will be hosted by Sheep Ireland in Cillin Hill Mart, Kilkenny, on Monday, 22 August.

All rams sold in the sale will possess euroStar evaluations that will allow flock-owners to select rams both on visual assessment but also on predicted breeding values.

The LambPlus component of the Sheep Ireland breed improvement programme provides a facility for flock-owners to record production and performance data of sheep in their flock. This data is then evaluated with genetic information in the breed database to give euroStar evaluations.

In simple terms, the euroStar evaluations are an ani-

mal's predicted breeding value in monetary terms. For example, it will show the extra profit expected from lambs sired by this ram compared to the average lamb.

The euroStar values give an 'overall sheep value index' of the predicted merit of a particular animal. This is also further divided to give predicted values on lambing, production and maternal indices.

These indices will show if a ram is more suitable to be used as a terminal or maternal sire.

The breeds being evaluated at present include Vendeen, Texel, Suffolk, Galway, Belclare, Charollais, Rouge, Shropshire, Ile de France and Mayo Mountain.

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