

## A 'who's who' of the Grassland Alliance – and the roles that they play

# Strength in numbers

The world's largest breeding programme of cattle to suit grass-based and grazing system, the Grassland Alliance, harnesses a unique combination of breeding programmes from Europe and New Zealand. This aims to identify the dairy genetics that are ideal for grazing farming systems and address the ever growing fertility problems in dairy herds globally. But what do the different members of the organisation bring to the table?

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The Grassland Alliance is based on breeding programmes, research and development. And all have an important function within the organisation. The advantages it offers include a wider gene

pool, with a higher level of genetics, as well as greater genetic diversity and biosecurity. It's also the largest supplier of dairy semen to suit grass-based systems. The alliance aims to become

one of the largest supplier of dairy semen fitting the breeding goals of grass-based and seasonal systems, and becoming the leader in providing genetics for better fertility. |

## New Zealand's system is pasture based

New Zealand has six million dairy cattle of which 4.6 million are dairy cows. The average herd size is 390 cows, with 2.8 cows/ha, an annual average yield of 360kg of milk solids, and an average cow longevity of 4.3 lactations. New Zealand also has a seasonal system with spring calving and is mainly pasture-based, although more feed is bought in than it was a decade ago.

New Zealand has various farming

systems, ranging from pure grass-based systems without bought-in feed to a system where more than 30% of the feed is bought in. Once-a-day (OAD) milking is also becoming increasingly popular. Most important in the New Zealand systems is that profitability for these farms depends on growing and grazing as much grass as possible. In a system heavily based on making profit it should be stressed that supplementary feeds are

not substitute feeds for profitable pasture-based systems. The New Zealand cow should meet the following criteria:

- Ability to harvest large quantities of grass of varying quality (up to 16kg DM/day)
- Ability to produce valuable milk efficiently (relative to live weight)
- Ability to calve repeatedly within 365 days.

## Teagasc and Moorepark

Teagasc is the Irish Agriculture and Food Development Authority and has three focus areas – research, advice and education.

Moorepark is involved in the research programme, ICBF delivers the data and NCBC is responsible for the breeding programme.

Moorepark, ICBF and NCBC are working closely together through continuous innovation to optimise the total profitability of grazing systems, with the goal to achieve more profit on farms. Moorepark has eight research programme areas, which include genetic

improvement: reproduction; grass supply and utilisation/nutritive value; milk production systems and economic analysis; cow nutrition and increasing added value; cow health and welfare; labour, milking and energy efficiency; and environmental research.

The most important research areas are dairy cow genetic improvement, and grass supply and utilisation/nutritive value.

Food Harvest 2020 sets out the vision for the Irish agri-food sector for the next decade, part of which is the ambition to increase milk volume by 50%.

In Irish dairy cattle breeding, the keys to success are:

- Pertinent breeding objective – profit based
- Live and accurate national database
- Accurate genetic and genomic evaluations
- A national breeding scheme-sustainable long-term genetic gain
- Impartial extension service on how best to exploit developed tools.

The aim is to have continuous improvement on the economic breeding index (EBI).

## Next Generation Herd tests EBI

The objective of the Next Generation Herd (NGH) is to test the appropriateness of the economic breeding index (EBI) to reflect overall profit in futuristic production systems. This is done through:

- Breeding cows compatible to the Irish grass-based production system
- Facilitating the monitoring of difficult to measure traits (cow health, greenhouse gas emissions, intake)
- Enhancing the development of the EBI (identify new traits).

To generate progeny, 2,000 females

were mated with 20 bulls, producing 40,000 offspring. A total of 800 suitable elite maiden heifers were identified.

Finally 46 heifers were brought into the NGH.

These heifers are within the top 1% of their group. This process has been executed in close collaboration between Teagasc and NCBC.

Further heifers are to be sourced. Requirements are: 40 or more high EBI NGH heifers, 50 or more 'Control', approximately 100 EBI heifers, and between 40 and 50 high EBI calves.



## Ireland's breeding federation leads the way

Ireland has four million inhabitants and 6.9 million cattle of which 1.1 million are dairy cows (and 350,000 heifers) with an average herd size of 40 cows. The moderate climate with temperatures almost never dropping below 0°C and an annual rainfall of around 975mm make Ireland ideal for extensive grass-based dairy systems.

Ireland has a seasonal system, with 85% of cows calving in the spring. The stocking rate is 2.5 cows/ha and the costs of production are around 14ppl.

The average milk yield in Ireland is 4,798 litres per cow, which is expected to increase to 5,140 litres in 2020.

The National Cattle Breeding Centre (NCBC) was established in 2005 and is a joint venture between Progressive

Genetics and Munster Cattle Breeding Group. Together they are involved in AI and semen sales, herd recording, herd health testing, and farm software.

In the years since it was formed it has grown considerably and today it is the largest AI cooperative in Ireland and aims to design, deliver and operate the breeding programmes and bull studs for its shareholders.

The Irish Cattle Breeding Federation (ICBF), established in 2000, is the umbrella cattle breeding body of which Progressive Genetics and Munster are founder shareholders. ICBF is responsible for the central cattle breeding database, genetic evaluations, and research capabilities. Around 70% of ICBF's funding is from the industry and 30%

from the state. The national breeding objective of ICBF is expressed as the economic breeding index (EBI), which is a single figure profit index to assist producers in selecting the most profitable cows and bulls to use to breed replacements. EBI has six sub-indices – production, fertility, calving, beef, health, and maintenance. Before 2000, the Irish index was focused solely on production.

ICBF indicates that female fertility is key to the success of the Irish dairy industry. Cows have to calve as early in the season as possible to produce more milk. ICBF's goal is to develop a highly profitable Holstein Friesian cow that combines female fertility, milk solids, and functional type.

