Colin Callanan and Tommy Cox

Tackling parasites in a calf to beef system

Monitoring worm burden and rotating products ensures young calves thrive at grass.

Tommy Cox
Teagasc DairyBeef 500 Programme Advisor

Spring has been especially busy for DairyBeef 500 participant Colin Callanan, who farms near Kilconieron, Co Galway. Since the start of the year, he has reared over 100 calves for his calf-to-beef system, plus more than 200 beef calves on contract.

"Ensuring the smooth transition of calves to outdoor grazing is just as crucial as their initial rearing," says Colin. "I put a lot of emphasis on managing that change to ensure the calves thrive."

Calf rearing

Calves arrive on the farm at around three weeks old and are fed on an automatic milk feeder until they reach a weaning weight of 85-90kg. They typically reach this goal at 55 to 60 days old.

On arrival, calves are introduced to a highly palatable calf ration. Calves can be slow to consume significant amounts of concentrates, but intake increases rapidly once milk volume begins to decrease.

"Keeping the troughs clean and providing fresh feed consistently are key factors in encouraging the calves to start consuming reasonable amounts of concentrate," says Colin. "By the time they are weaned, calves are usually consuming over 2kg of concentrates daily, which they continue to eat until turnout."

Straw is provided as a fibre source, and clean, fresh water is always available. This strategy plays a crucial role in the calf's rumen development, setting the stage for their continued growth.

Turnout strategy

"If calves are not consuming at least 2kg/day of concentrates, an extra week indoors is justified," he says. "The last thing you want is for a calf to have a setback at grass."

A well-sheltered paddock beside the yard is the first destination for the

calves at turn out. "It's well fenced and sheltered which is important to acclimatise calves to the outdoors," says Colin.

He doesn't apply nitrogen on the turn-out paddock preferring to allow covers to go slightly stronger and stemmy. These covers provide both fibre and protection from sudden dietary shifts.

"We don't want them going straight onto lush, leafy swards," he says. "If the grass is too rich it can cause digestive issues like summer scour." To support the transition further, straw is offered ad lib during the first few weeks at grass, especially when pasture is high in moisture or nitrogen.

Concentrates post-turnout

Concentrate feeding continues for five to six weeks post turnout, with calves receiving 1.5–2kg per day, depending on weather and grass quality. This buffer helps them maintain growth during the adaptation period. "We try not to cut corners," says Colin. "Providing concentrates post-turnout might feel like an extra cost, but it pays for itself when you see the calves driving on."

Once calves become acclimatised to the outdoor grass, pre-grazing covers of <1,000kg DM/ha are targeted to encourage intake. Generally calves are kept in small paddocks and are moved every two days.

"Keeping fresh grass in front of calves is important but I believe it is just as important to get calves to graze paddocks out tight to ensure quality regrowth. Grazing down to the base of the grass plant also means they are eating the stem and fibrous material is which is important to preventing any digestive upsets."

Calves are batched by weight. Colin says it is important to keep calves of similar size together. "This helps to prevent the smaller calves from been bullied at the feed trough and falling back in performance."

Concentrates are removed from the stronger calves' diet from July onwards depending on the weather and grass availability. Generally, smaller calves get at least 1kg of meal right throughout the summer to maintain performance.

> Straw is offered ad lib during the first weeks at grass, especially when pasture is high in moisture or nitrogen

How to keep parasites at bay

Alongside proper nutrition and a smooth transition to grass, effective parasite control is essential during the first grazing season. Parasites, especially worms, are a particular issue in dairy calf to beef systems. This is because the majority of the animals on the farm have very little immunity to worms due to their age profile. Stomach and lung worms are the main offenders.

After their first grazing season cattle have generally developed sufficient immunity to prevent clinical disease. However there have been numerous cases where older animals have had high levels of worm burden. Older groups, as well as younger animals, need regular monitoring to ensure no issues arise.

Symptoms of stomach worms can include diarrhoea, decreased appetite and weight loss. Stomach worms can cause severe damage to the stomach and small intestine which will cause parasitic gastroenteritis. Careful monitoring is essential to prevent this from happening.

Colin operates a proactive parasite control programme based on dung sampling and observation. "From late May on, we start taking faecal samples every two to three weeks. If the egg count is over 200 eggs per gram, we know it's time to treat."

Dosing for stomach worms

Control of stomach worms on dairy calf to beef farms is achieved with anthelmintic doses. There are currently three classes of anthelmintic licensed for the control of stomach worms in cattle: benzimidazole (white) levamisole (yellow) and, macrocyclic lactone (Clear).

These products have been highly effective in controlling stomach worm infection in cattle. However recent studies carried out by Teagasc showed resistance to all three classes of product. When implementing a dosing strategy it is good practice to alternate between the different classes of drug to minimise the risk of a potential resistance build up on farm.

Taking a dung sampling a few weeks after treatment is good practice to ensure the product used gave effective treatment. "For stomach and gut worms, I rotate between yellow, white, and clear drenches to help prevent resistance building on the farm," says Colin. "Correct technique when dosing is just as important as choosing the right product.

"We always calibrate the dosing gun and weigh a few sample calves to avoid under- or overdosing. Guessing weights doesn't cut it."

Colin Callanan operates a proactive parasite control programme based on dung sampling.

Better silage pays off for the Dodgers

A Monaghan drystock Knowledge Transfer (KT) discussion group focused on making quality silage in 2024 and reaped the benefits

Eimear Tobin
Teagasc Business & Technology Advisor - Drystock

Last year it cost €42.12, on average, to make a bale of silage. Two-thirds, €26.77, was for harvesting and there's no charge for land included. Silage is clearly a major cost on drystock farms.

The Dodgers drystock Knowledge Transfer (KT) discussion group met recently on Fred McKeever's farm near Donaghmoyne to review their experience making silage in 2024 and plan their silage strategy for this year.

A feature of any KT group is a one-to-one advisory session. Most of the group used their session to focus on soil fertility management, which is fundamental to growing grass.

"Talking about fertility and getting soil tests done meant we knew where we were starting from," says Michael Agnew who farms near Castleblayney. "We targeted fields that needed lime, P or K and avoided wasting money on fields that were already at Index three or four."

Fertiliser plan

Michael created a fertiliser plan for the year based on his soil test results. It's worth noting that all farms stocked at over 130kg N per hectare must take soil samples if they wish to spread chemical Phosphorus

Teagasc advisors Eimear Tobin and Ciallin McLoughlin with the Dodgers

or import slurry.

Another group member, Mickey McCague, is a big advocate of raising soil pH. "Applying lime is not exactly a new idea but we saw a big response in grass growth from it."

Closing for silage The group discussed that paddocks that were closed off on time and received the correct nutrients will be ready to cut by the middle/end of May. Aiming for bulk will reduce the quality of the first cut and the yield of the second cut.

Cutting dates

In 2024 the group members had a range of cutting dates. Some members of the group were still making their first cut in late June/July. One group member had cut his silage in the middle of June in 2023, and in 2024, made the first cut a few weeks earlier on the June bank holiday weekend.

When asked about the quality of the silage, he said he has better looking cattle, and was able to reduce the total concentrates bought for the year, acknowledging that weather might have also played a role. Next year, he says he will aim to take his first cut in mid-May.

Cut at the right growth stage: The harvest date is the most important factor that affects silage DMD. One issue the group discussed was whether or not they should graze the silage ground in the spring.

Research shows that if you have grazed once in early February or March that will reduce 1st cut silage yield by 0.5 to 1.2 tonnes of DM Per ha, but it will increase total forage yield per hectare per year.

Testing for nitrogen and sugars: High nitrogen levels in the crop will make it harder for the pH to drop in the bale or pit, reducing the quality of the silage. As a general rule grass uses two units of nitrogen per day.

So if, for example, 100 units of Nitrogen was applied per acre, the nitrogen will be used up in 50 days.

However, there are a number of factors that affect this, such as the weather, the age of the sward, or the soil health in general.

Sugars in the grass are extremely important for fermentation, and have a direct impact on crop preservation. To ensure sugars are at their highest, mow the crop in the evening, where possible.

Nitrogen

If there is dry weather approaching, and you are unsure of the nitrogen and sugar content in the grass, you can get the grass tested in your local Teagasc office.

If the nitrate level is slightly high, wilting the grass for 1-2 days will usually resolve the problem.

If the sugar levels are below 3%, additives such as the traditional molasses will help. Adding 10-15 litres per tonne of grass will improve preservation.

Group member, Jason Hughes who farms just outside Castleblayney got his grass tested at his Teagasc office for the first time this year. "I was anxious about the nitrogen level as weather conditions had delayed us getting fertiliser out."

The nitrogen levels were slightly high, but he was able to wilt the grass for 24 hours. "I was able to cut a few weeks earlier than I would have if I didn't get the grass tested, and it made all the difference for the 2nd cut."

Host farmer Fred McKeever is convinced of the savings coming from quality silage particularly for his fattening cattle. "With higher quality silage they'll finish sooner and even if it's only a couple of weeks that's a saving on concentrates.

"As a group we are definitely making silage earlier than we did in the past and we are seeing the benefits," Fred concludes.

The impact of quality silage

Grass silage accounts for up to 30% of total feed on beef farms. A higher quality silage will reduce the amount of concentrates needed.

For example, in terms of weanlings, with a target daily weight gain of 0.6kg/head/day, being fed silage of 66% dry matter digestibility (DMD), they would need to be supplemented with 3kg of meal per day.

However, if they were being fed 70% DMD silage, they would need just 2kg of meal.

And if the weanlings were on excellent quality silage, for example 74% DMD, they only require 1kg of meal per day to achieve the target.

Silage targets

The target DMD required varies from farm to farm, and depends on the stock on the farm.

A dry suckler cow will get by on 66% DMD silage; a suckler cow with a calf at foot requires a higher DMD silage of 70%, as she uses more energy to produce milk. Growing cattle need a silage DMD of 72%, and finishing cattle require silage with a DMD of 74%.

How much silage do you need?

This is an approximate pit silage requirement* per animal per month:

- Dairy cows: 1.6 tonnes
- Suckler cows: 1.4 tonnes
- 0-1 year old: 0.7 tonnes
- 1-2 year old: 1.3 tonnes
- 2+ year old: 1.3 tonnes
- Ewes: 0.15 tonnes

*If you are using bales, multiply the tonnage required by 1.1

It is good practice to include a minimum of four weeks extra in your calculations as a reserve to allow for unexpected circumstances, such as poor weather.

A winter fodder budget is an effective tool used to assessing the silage requirements on your farm. Contact your local Teagasc advisor for more information

FutureBeef farmer Aonghusa Fahy

Breeding performance targets for beef farmers

Breeding, a key focus of the Future Beef Programme, is the cornerstone of an efficient, profitable and sustainable suckler beef system. Effective breeding strategies yield improved genetic potential, reduced costs, and increased output per cow.

Aisling Molloy
Teagasc Future Beef Programme Advisor

Calving interval & calves per cow per year

Calving interval is the average number of days between successive calvings. The target is 365 days. The aim is for each cow to produce a calf every year, maximising output per cow. A longer interval leads to fewer calves over the cow's lifetime, reducing overall herd productivity. The national average figure is 397 days and the Future Beef farmers are 25 days less at 372 days.

Calves per cow per year is the number of calves expressed as a proportion of all eligible females in the herd. It is calculated as follows: (365 / your calving interval figure) x (No. of calves alive at 28 days / No. of eligible females).

The target is 0.95 which allows for 5% mortality. While the Future Beef farms are on target at 0.95, the national average figure is 0.84 meaning that 16 cows out of every 100 in the national herd do not calve every year.Both of these metrics can be improved through:

- Minimising calving difficulty for the cow by using easier calving bulls
- Having cows in a good body condition score at calving (2.5 to 3.0)
- Turning cows out to grass as soon as possible after calving to help meet their energy demands
- Good cow and bull fertility
- Good heat detection & records (e.g. tail painting, scratch cards, vasectomised bull, automated system)
- Having a tight breeding season of less than 12 weeks
- Culling infertile cows that don't go back in calf
- Having a herd health & vaccination plan in place to control diseases like leptospirosis and BVD

Mortality at 28 days

This figure refers to the number of calves born dead or dead within 28 days, as a proportion of all births recorded during the period. The target is to be below 5% and the national average figure stands at 2.37%. The Future Beef farmers are slightly higher at 4.3% but are still below the target.

This can be reduced by:

- Vaccinating cows against rotavirus, coronavirus, e.coli and/or cryptosporidium pre-calving to reduce the incidence of scour in calves
- Minimising calving difficulty through good bull selection
- Feeding suckler calves two litres of good quality (>22%) colostrum within two hours of birth
- Disinfecting a calf's naval with iodine (7-10%) or chlorhexidine within 15 minutes of birth to help reduce the incidence of naval infections
- Good hygiene to prevent disease in housing
- Protecting young calves from harsh weather, draughts, and overcrowding
- Monitoring for any early signs of illness and acting quickly to treat them under veterinary advice

Percentage of heifers calved at 22-26 months of age

If a heifer calves at two years she will produce more calves over her lifetime, improving herd productivity. Delaying first calving beyond 24 months increases rearing costs without adding value.

Early calving means heifers begin contributing to herd profitability sooner and helps maintain a 365-day calving interval. Well-managed heifers that calve at two years also tend to have better fertility and longevity in the herd.

This can be increased by:

- Selecting docile heifers from fertile and milky cows that produce good calves every year
- Making sure the heifers are visually correct with good feet and legs, and with a good frameEnsuring replacement heifers meet their target weight gain of >1.1 kg/day from birth to weaning and are over 250kg at 200 days old
- Ensuring they achieve 0.6 kg/day over the winter by feeding >74% DMD silage and balancing with ration
- Having sufficient lying space, feeding space and ventilation in sheds
- Having a herd health plan in place

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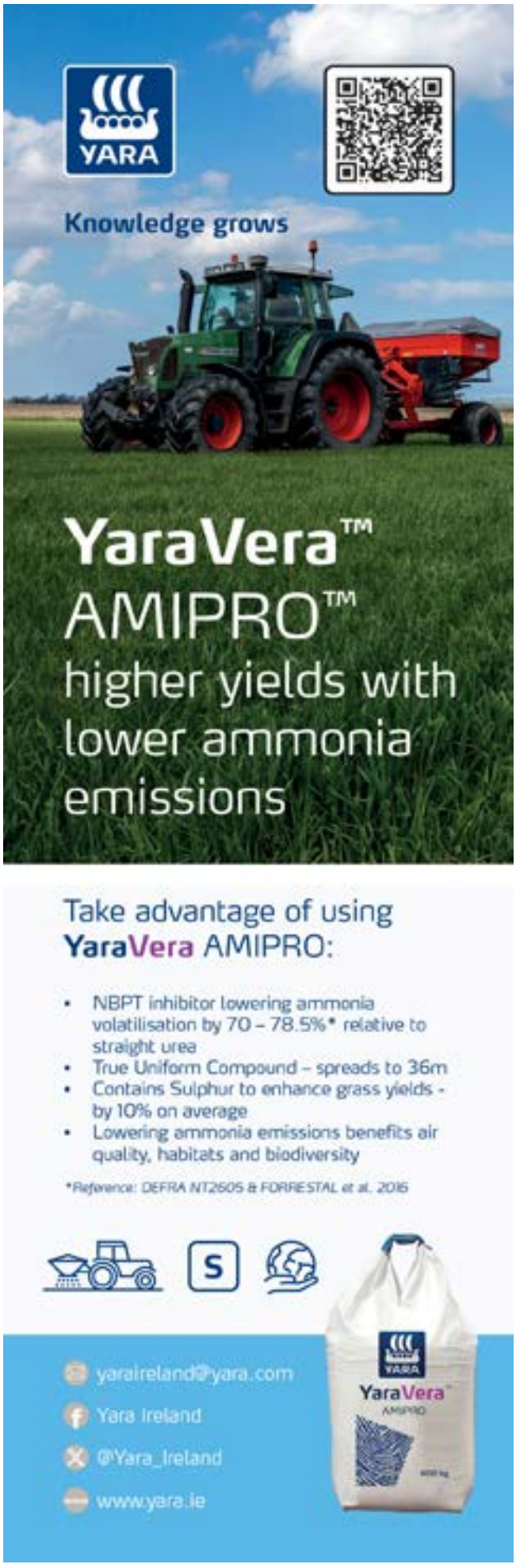
Table 1: Key beef breeding performance targets

Key Performance Indicator	Target	National Average 2024	Future Beef Farms 2024
Calving interval (days)	365	397	372
Calves per cow per year	0.95	0.84	0.95
Mortality at 28 days (%)	<5	2.37	4.3
% heifers calved between 22-26 months of age (%)	100	22	74
6 week calving rate (%)	>80%	57 (spring)	70



• to minimise parasite and disease burdens
• Turning heifers out to grass first in spring
• Breeding heifers at 60% of their mature weight, typically 380-420kg for sucklers
• Breeding heifers to bulls with less than 8% heifer calving difficulty at over 90% reliability
Good nutrition, genetics, and management are crucial to ensuring heifers reach target weight and condition for successful calving.

Six-week calving rate

This is the number of cows calved within the first six weeks, as a proportion of all cows calved during the spring.

Maintaining a tight calving pattern improves herd management, simplifies breeding schedules, and produces more uniform cattle for sale. The target is to calve over 80% of the herd within six weeks.

Nationally this figure is at 57% and 70% on the Future Beef farms. To achieve this, there must be at least one calving pen available for every seven cows on the farm.
This can be improved by:

• Calving cows in a good body condition score of 2.5 to 3.0
• Calving the herd to match grass growth on your farm to match increasing energy demands after calving
• Having a robust herd health plan in place to control reproductive diseases like leptospirosis and BVD
• Good heat detection and record keeping
• Breeding the most fertile cows and heifers
• Having a strict breeding season of less than 12 weeks
• Culling infertile or later calving cows
• Using short gestation bulls with minus figures of daughter calving interval

How does your herd compare?

Farmers that are subscribed to ICBF's Herdplus service can easily access their calving reports online through the 'reports' section. The annual reports run from 1July to 30June.

More information

For more information on the Future Beef programme, including factsheets on calf and cow management, visit the futurebeef website

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CASE STUDY: Aonghusa Fahy, Ardrahan, Co Galway

Aonghusa Fahy operates a 30-cow spring calving system

Changes that reduced mortality and delivered livelier, healthier calves

Aonghusa farms 22ha in Ardrahan in Co. Galway, along with a further 26ha on his outfarm in Tulla, Co. Clare. He operates a 30 cow spring calving suckler/store to beef system.
The cows are mainly Limousin, Hereford and Charolais crosses and he was using a Limousin stock bull up until last year when he changed to 100% AI.

Despite having a TB breakdown in 2023/2024, Aonghusa has worked hard to improve his breeding performance over the last four years. In 2021 the calving interval for the herd was good, at 367 days, but mortality was exceptionally high at 16.1% at 28 days of age.

This meant that his calves per cow per year figure was 0.86 and resulted in a 30% culling rate in the herd. Aonghusa lost four calves at birth due to hard calvings where the cow was too fat and took too long to calve. One other calf died before 28 days due to scour.

Calving interval

In 2024 the calving interval rose slightly to 370 days, mortality at 28 days dropped significantly to 4.8% and the calves per cow per year rose to 0.94. This increase from 0.86 to 0.94 is the equivalent of two extra calves to sell in a 30 cow herd which is extra money in Aonghusa's pocket for the same amount of work.

The six week calving rate has also jumped from 59% to 86% during that time, and the percentage of heifers calving at 22-26 months of age has remained consistent at 83%.

Since 2021, Aonghusa has implemented the following changes which he believes have helped reduce mortality and resulted in more lively, healthier calves at birth.

- He body condition scores cows at housing
- Fat cows are restricted to poorer quality silage whereas thin cows are fed better quality silage
- Minerals are now dusted on the silage pre-calving and supplied through boluses throughout the year instead of feeding them through mineral buckets
- The quality of the mineral being fed has been improved
- Cows are vaccinated against rotavirus, coronavirus and e.coli to prevent scours in the calves
- He tests the colostrum quality in the cows using a refractometer
- The calves are much livelier at birth and get at least two litres of colostrum in the first two hours after birth
- Good hygiene has continued to play an important role with clean, straw bedding provided in calving pens.