

START STRONG,
FINISH STRONGER



YOUR PARTNER FOR
PERFORMANCE



Healthy Calf Advice





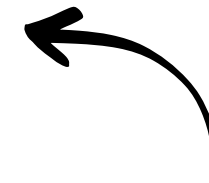
My Feed For Growth Business Manager is: _____

My Calf Milk Replacer is: _____

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*Scan me with your camera
phone for contact page*

How we make your milk replacer 03



04 Milk Replacer



The Feed for Growth initiative is to help our farmers do the best for their calves and ultimately grow better cows.

By growing better cows we mean:

- More lactations (surviving long enough to become profitable)
- Sustain high milk yields
- Conceive at the desired time of breeding

Achieving an age at first calving of 23-25 months is key in terms of fertility, milk yield and survival over the first 5 years of a dairy cow's life.

Factors influencing growth rate:

- Colostrum feeding
- Milk feeding (type, amount, system)
- Housing (ventilation, drainage, bedding, pen design)
- Weaning management
- Post-weaning nutrition (concentrate, roughage, grazing)
- Vaccination / disease management

Monitoring growth

It's important to set growth targets on farm, and regular measurement of your herd is essential. Your heifers must be big enough at breeding time.

Growth rates cannot be determined by eye. Weight should ideally be monitored by calibrated electronic scales or a weigh band. Skeletal growth (e.g. height at withers) can be monitored with a height stick.

Scale readings

Electronic scales are highly accurate and, when set up correctly in a race or crush, the easiest method.

Correct use of a weigh band

A weigh band estimates live weight in kilos via measurement of heart girth. Accuracy is good due to the high correlation between weight and girth measurements

Skeletal growth

Height at withers is a good indicator of skeletal growth - it helps avoid serving small, fat animals too soon. It is best measured using a height stick.

Consistent measuring

Once you have an accurate measure of calf growth rates, nutrition can be adjusted accordingly and target growth rates achieved.



Benefits of calving at 24 months	23-25 mth AFC	26-30 mth AFC	>30 mth AFC
Days to conception, Lactation 1	117d	137d	170d
Days to conception, Lactation 2	111d	133d	144d
Total 5 year milk yield	22,477kg	20,605kg	15,777kg
% life in first 5 years spent in milk	45%	40%	34%
% cows starting lactation 3	70%	59%	50%

Milk Replacer 05

A quality milk replacer is vital in giving calves the best possible start in life.

How to mix the milk



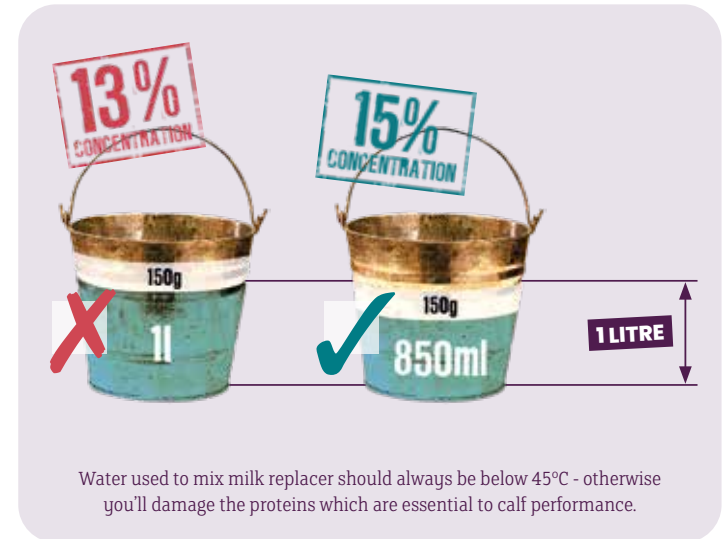
Concentration

To mix your milk correctly use scales to weigh the milk powder accurately. For a concentration of 15% solids, use 150g of powder to 850ml water to make up 1 litre of mixed milk. Using a full litre of water will lead to a weaker milk concentration.

Be consistent in your mix – you can use any concentration between 10 and 15% solids, but once you've chosen do not vary that concentration. Total milk solids fed will affect the growth rate of your calves.

Temperature

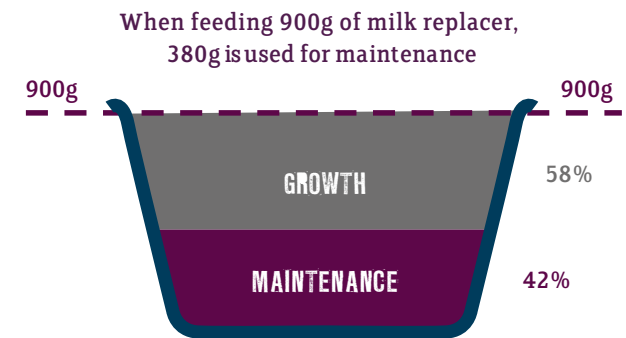
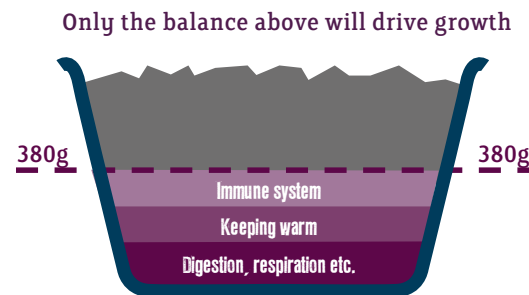
Milk should be fed at a consistent temperature of between 37°-39°C - a consistent temperature helps ensure a good oesophageal groove closure which channels milk into the abomasum. The spillage of milk into the rumen will increase the risk of scours, resulting in poor growth.



How much milk replacer to feed?

Feeding low levels of milk replacer will not achieve the necessary growth rates required to get heifers calving down at the correct weight at 24 months old. Furthermore to achieve a minimum growth rate of 0.7kg/day pre-weaning, a minimum of 750g-900g of milk solids per calf per day should be fed in at least two feeds.

The energy bank balance



Leaving 520g of milk powder available for growth within thermoneutral conditions

06 Calf Weaning

Weaning can be defined as the point when calves transfer from a liquid to solid diet. This is carried out successfully when the rumen has developed sufficiently to support the fermentation and digestion of solid feed.

Rumen development

Rumen development can be influenced by diet. A healthy rumen should have visible papillae and a dark colouration, resulting from the development of the rumen microbial population and large blood vessels associated with tissue growth, ensuring maximum absorption, transport and utilisation of nutrients.

Timing of weaning

The early intake of solid feed helps to condition the immature rumen and encourage it to develop so that the calf can eventually obtain a high proportion of its nutrient requirements from solid rather than liquid feed at an earlier time than would happen naturally.

Rather than weaning at a fixed time, it is best done when the calf is consuming a minimum daily target of 1.5kg per day of solid feed for 3

consecutive days. Remember a rapid increase in starter intake at weaning does not allow enough time for the rumen to develop - the amount of starter that has been consumed for 3 weeks before weaning is key for rumen development.

Water

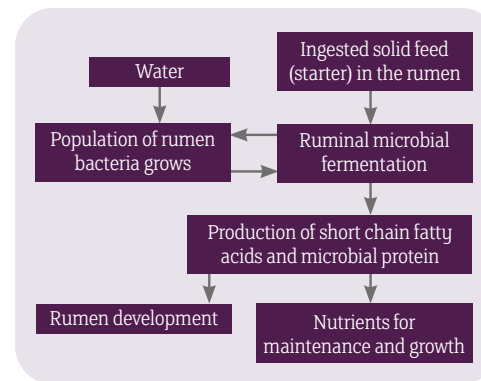
Irrespective of the type of rearing system used on your farm easy access to fresh water and calf starter from the beginning of the rearing period will aid earlier rumen development.

Forage

Offering forage alongside starter feed is also important for rumen development. Chopped forage (about 3-4 cm chop length) should be provided separately from the starter (i.e. do not mix the forage into the starter). If chopped forage is not available, provide long fibre by offering forage in racks (a separate source from the bedding).

The importance of solid feed:

Rumen development is largely driven by the fermentation of calf starter by the rumen bacteria.



Weaning should be done gradually by reducing milk fed over a 21 day period.



Double birth weight (minimum)



Gradually reduce milk intake



1.5 kg/d solid feed x 3 days (minimum)

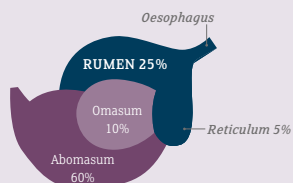


Fresh water intake increased

Stages of rumen development:

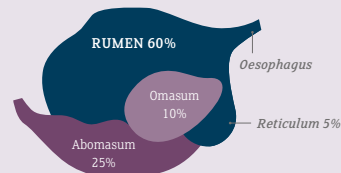
0-6 weeks

Milk is bypassing the rumen directly into the abomasum for digestion.



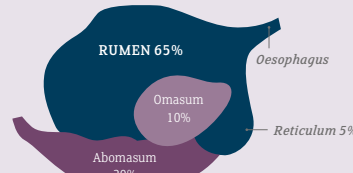
6 weeks

Consumption of solid feed and other factors encourages development of the rumen wall and rumen volume.



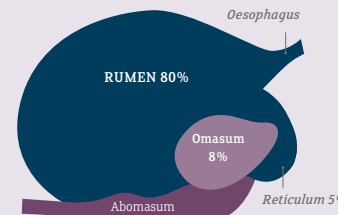
12-16 weeks

Post weaning the calf has a functional rumen which provides the calf with its nutrient supply.



Mature ruminant

The rumen is now fully functional.



The Healthy Calf 07

More than half of calves on UK farms suffer from disease before weaning; nearly all of this is due to scours and respiratory disease (RVC, 2013).



DON'T LET ILL HEALTH BECOME NORMAL – identify and act at the first signs of problems

Identifying common problems early gives you the chance to:

- Reduce the severity and duration of the disease¹
- Reduce the risk of irreversible damage (e.g. lung damage)²
- Reduce harmful bugs in the environment³
- Reduce the spread of disease³

1. Check calves at least twice a day – are your calves healthy?
2. Identify common problems early – use the chart
3. Record and monitor early signs of disease
4. Treat if necessary - in accordance with your vet
5. Make preventative or corrective measures

DON'T LEAVE IT TOO LATE! REMEMBER, GOING OFF MILK IS A LATE SIGN OF DISEASE

Respiratory

Signs of good health and vigour

- Bright • Playful • Curious
- Keen to drink milk



- Clear eyes and nose
- No cough



Normal temperature (38-39°C or 100-102°F)

Look for early signs of disease

- Quiet • Slow to stand
- Still drinking milk



- Discharge from eyes/nose
- Cough on movement



High temperature (≥39.5°C or 103°F)

Late signs of disease

- Dull • Reluctant to stand unaided • Off milk



- Severe discharge/pus
- Frequent coughing /wheezing



High temperature (≥39.5°C or 103°F)

Scours



- Clean hindquarters
- Well formed faeces



Normal temperature (38-39°C or 100-102°F)



- Dirty hindquarters
- Loose faeces



Variable temperature



- Wet hindquarters
- Hair loss • Dehydrated
- Watery faeces



Variable temperature

ACT NOW

Implement the treatment plan agreed with your vet

1. Borderas, T. F., et al. (2009) *Journal of Dairy Science* 92(9), 4549–54
 2. Correa, M. T., et al. (1988) *Preventive Veterinary Medicine* 6, 253–262
 3. Windeyer, M.C., et al. (2014) *Preventive Veterinary Medicine* 113(2), 231–240

8 Are you Feeding a Healthy Calf?

The aim of every calf and youngstock rearing unit should be to rear healthy animals with minimal mortality and optimal growth rates.

A healthy calf, in a warm and dry environment, has the best chance of achieving its full lifetime potential¹:

A healthy calf uses its feed more efficiently

Calves use their feed in lots of ways. Firstly they must maintain their normal body functions, then they use energy to keep themselves warm and fight disease and finally energy left over can be used for growth.

A healthy, warm calf - ideal



A sick, cold calf - inefficient



A sick, cold calf has the same maintenance requirement. But it needs almost all of its remaining energy to keep warm and fight disease so growth is slow and inefficient.

These examples illustrate a calf with a good feed allowance. Remember, a calf may not even have enough energy to keep warm or fight off disease, let alone grow.

Head

- Clear eyes and nose: *no discharge*
- Easy, slow breathing: *no coughing or wheezing*
- Alert ears: *not droopy*
- Well healed ear tags: *no pus*

Eating

- Keen to drink milk and eat solid feed
- If over one month, check left flank for rumen fill: *not hollow or bloated*

Appearance

- Bright, curious and playful: *not dull or slow to stand*
- Good coat condition: *no hair loss, dullness or injuries*
- Dry and small navel: *not swollen and no pus*

Legs

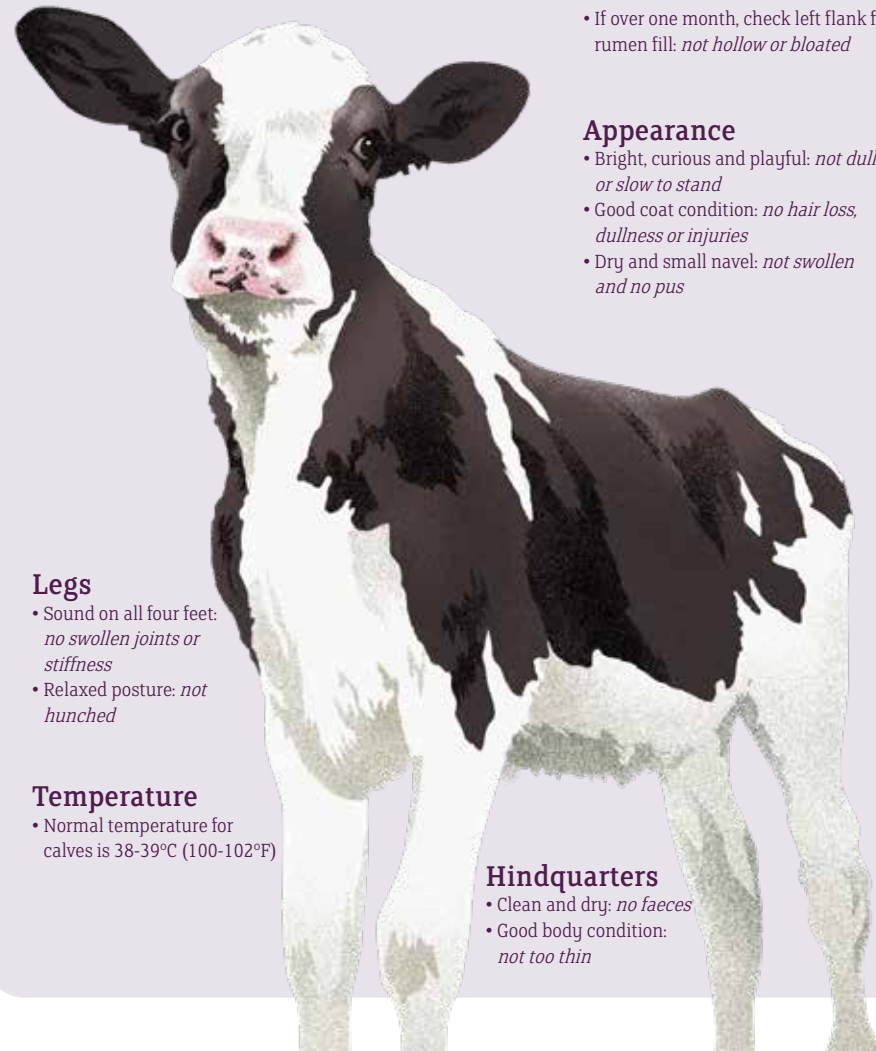
- Sound on all four feet: *no swollen joints or stiffness*
- Relaxed posture: *not hunched*

Temperature

- Normal temperature for calves is 38-39°C (100-102°F)

Hindquarters

- Clean and dry: *no faeces*
- Good body condition: *not too thin*



Whey Protein or Skim? 9

Which dairy protein is right for your calves? Dairy ingredients are the main source of protein used in Calf Milk Replacers –Whey proteins or Skim proteins.

What is the difference between Whey and Skim proteins?

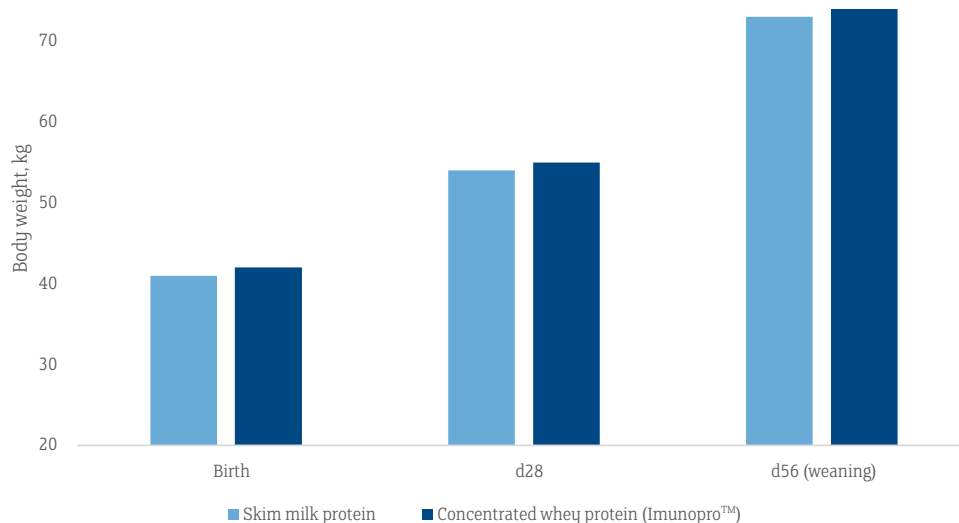
Whey proteins do not form a clot within the abomasum, they pass readily into the small intestine and are easily digestible.

Q

Do both Whey proteins and Skim proteins deliver good calf performance and growth?

YES

Holstein calves fed milk replacer containing whey protein have the same growth rates as those being fed a skim-based product.



Remember it is the quality and processing of the dairy protein (of both whey and skim) that are used in a milk replacer which is the most important, not necessarily the type of protein. In addition, not all whey is the same - whey powder is lower in protein than concentrated whey protein (**Imunopro™**)

Whey proteins contain high levels of immunoglobulins and amino acids which are crucial for calf development (colostrum contains 65% whey protein, which is three times the amount in whole milk). However, it is important to remember that all whey proteins in Calf Milk Replacer are not the same - quality dairy protein and specialised manufacture is key to capturing these all-important nutrients.

Concentrated goodness for your calves

Volac Milk Replacers uses low temperature evaporation and ultrafiltration to process our high-quality whey, this ensures that the bioactive compounds the calf needs for growth and development are not damaged. The result of this unique manufacturing process is **Imunopro™** which is unique and present in all Volac Milk Replacers manufactured milk replacer.

Imunopro™ contains high levels of immunoglobulins and amino acids, which are essential in immune system development and are vital for good muscle growth.

Imunopro™ also contains high levels of lactoferrin which has been shown to reduce scours. These bioactive compounds are not available in casein (skim proteins).



10 Feed for Growths Roadmap for Performance

Target 1: Weaning

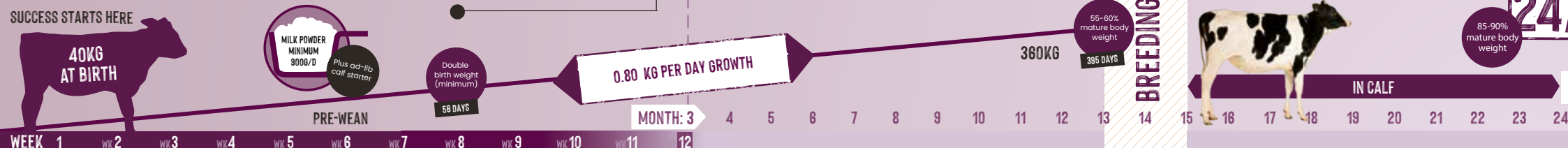
- Maximise feed efficiency
- Mammary cell and gut development
- Immune function development
- A minimum double birth weight

Target 2: Breeding

- Heifers must be in calf by 15 months if they are to calve at 24 months - so first breeding needs to start at 13 months
- Heifers need to have adequate frame growth and be fit not fat
- Monitor growth rates on a regular basis
- Heifers must be bred at 55%-60% of their mature bodyweight
- Breed on weight to ensure heifers are at optimal size at calving

FIRST 3 MONTHS
MAXIMUM DEVELOPMENT AND GROWTH OPPORTUNITY
DURING MILK FEEDING PHASE

MORE LACTATIONS = MORE MILK



2:1

FEED
CONVERSION
EFFICIENCY

100G OF FEED = 50G OF GROWTH

3:1

100G OF FEED
= 36G OF GROWTH

5:1

100G OF FEED
= 19G OF GROWTH

10:1

100G OF FEED
= 9G OF GROWTH

MISSED OPPORTUNITY
EXPENSIVE TO CATCH UP

Target 3: Calving

- Age at first calving has a considerable impact on the number of replacements on a dairy farm.
- Less replacements means less feed, less time and less space
- Calving weight should be 85-90% mature body weight

AFC 24 vs AFC 30 Months

- Better fertility
- Better udder health
- Increased milk yield
- Increased longevity
- Quicker return on investment

Longevity:

- 70% reach 3rd lactation if AFC 24 months
- 59% reach 3rd lactation if AFC 26-30 months
- 50% reach 3rd lactation if AFC >30

Profit generation

- 10 months additional profit generation at 72 months
- Only 42% of live born heifers reached 3rd lactation (Cooke *et al.*, 2013)

BECOME PROFITABLE EARLIER

IMPROVED FERTILITY

IMPROVED LONGEVITY

MONTHS
AFC

1ST LACTATION

25 26 27



2ND LACTATION

PROFIT



3RD LACTATION

Mature
body weight
of 660kg's

10 MONTHS
EXTRA
PROFIT PER CALF
AT 72 MONTHS

60

MONTHS
AFC

85-90%
mature body
weight

CALF

1ST LACTATION

25 26 27



2ND LACTATION



PROFIT
3RD LACTATION

60

OPPORTUNITY
CH UP

PLOT YOUR
HEIFER ROAD MAP



Based on the first 5 years of the **Feed for Growth Roadmap** cows will be profitable for longer and have improved fertility

Cooke *et al.*, 2013 Open Journal of
Animal Sciences 3:1-12

12 What is **imunopro™** ?

We take the goodness of milk and concentrate it. A combination of filtered, evaporated and gently sorted milk constituents are collected at low temperature from whey.

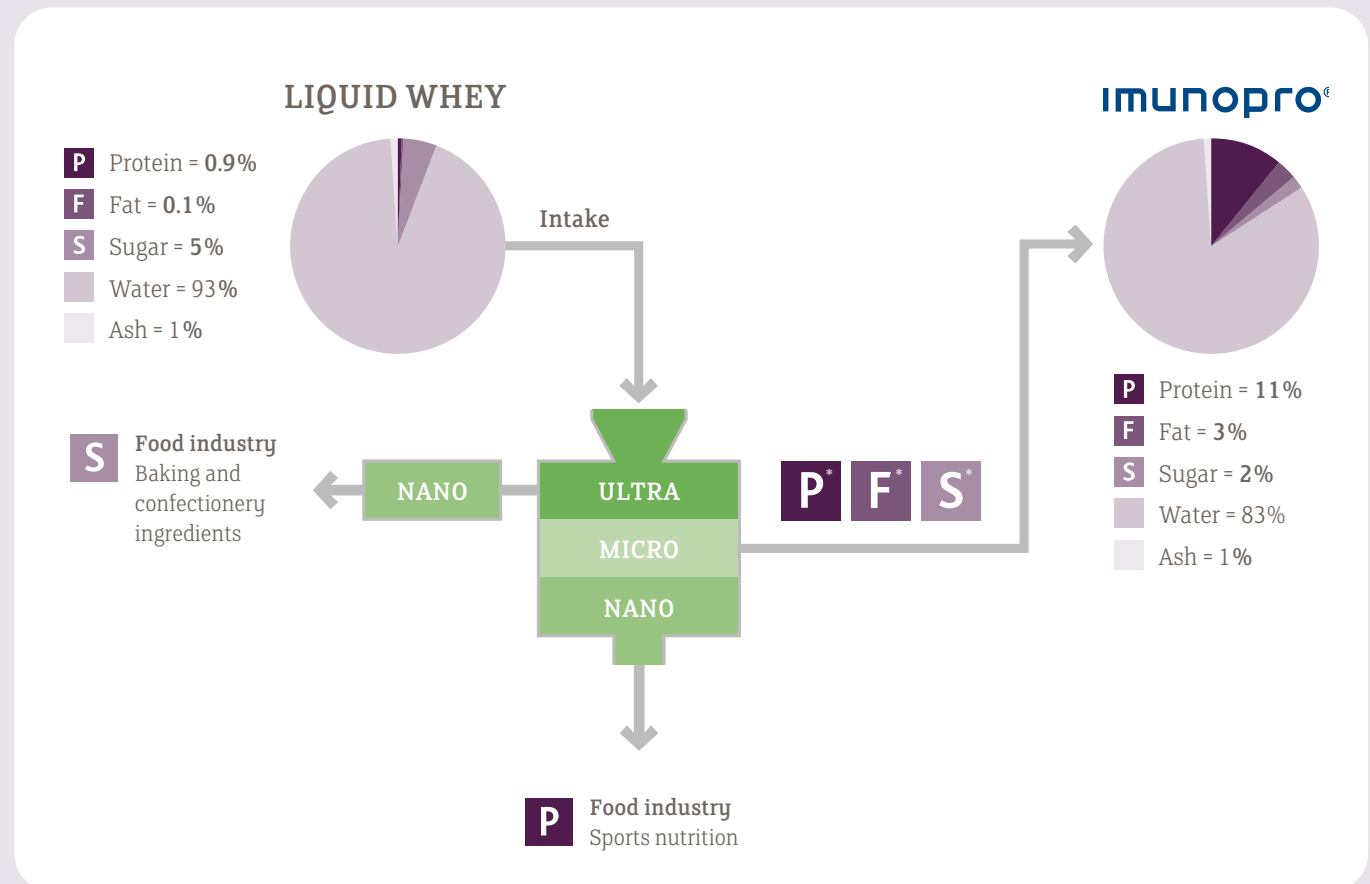
These include:

Proteins, **F**ats and **S**ugars, resulting in a highly nutritious bioactive complex known as

IMUNOPRO™

This unique process captures the goodness of milk, for the benefit of the calf.

The **imunopro™** process

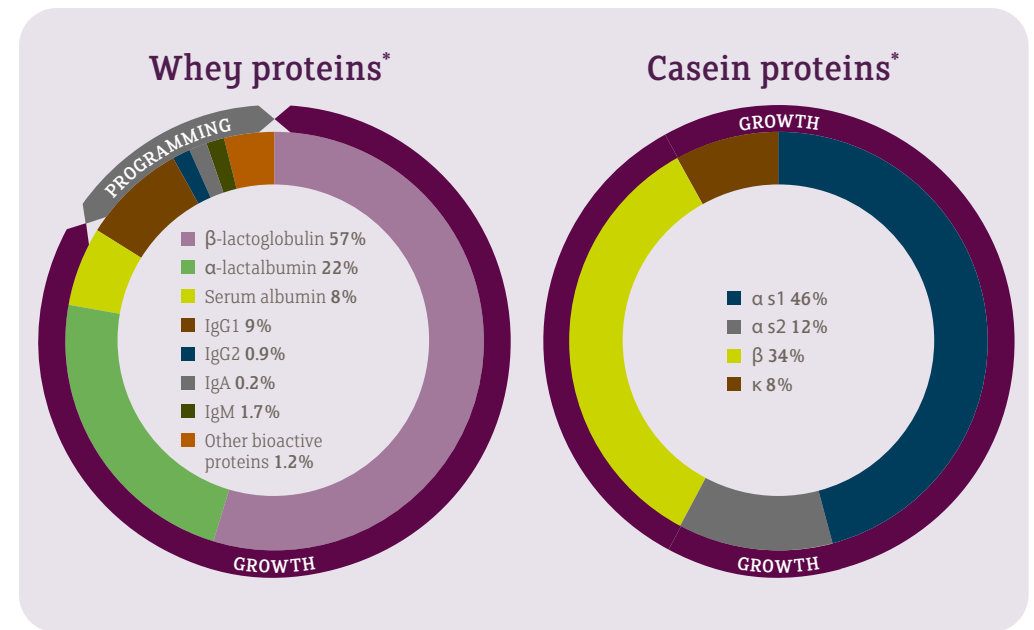
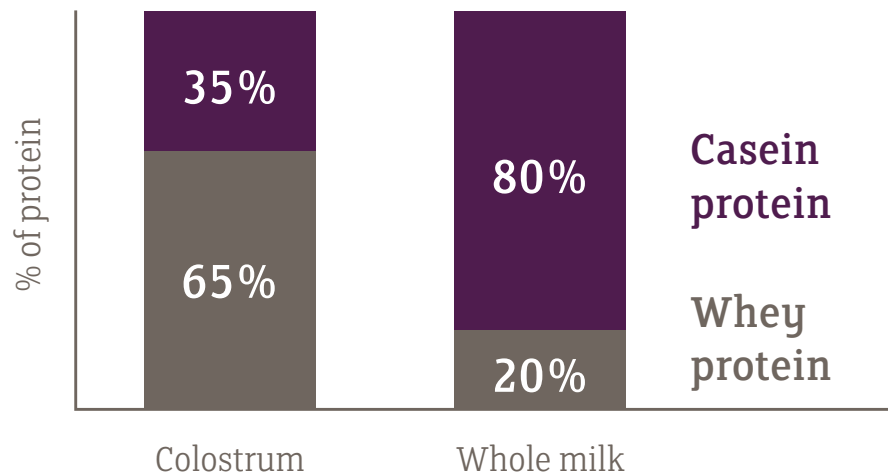


Imunopro™ is unique and is a concentrated whey protein and phospholipid base, packed with vital amino acids and functional proteins, fats and sugars.

We take the Magic of Milk 13

The magic of milk is found in the whey – and we are experts in concentrating the goodness of milk for the benefit of the calf. Our unique processing takes all the benefits of Whey (including immunoglobulins and essential amino acids - which are all found in colostrum) and concentrates them to produce our unique Imunopro™ which is basis of all Volac Milk Replacers calf & lamb milk replacers.

Whey protein – fundamental for calf programming



Colostrum: contains 3x more whey protein content vs whole milk.

Whey - contains the bioactive content for calf success.

- The special components in whey are used to programme the calf for success – in terms of health, the immune system's pathogen control and speed of development.
- We concentrate the components found in milk **P** proteins, **F** fats and **S** sugars and use them as a base for our milk formulas – we call this base:

IMUNOPRO™

14 The **imunopro™** difference: the evidence

Protein

Amino acids for growth and development*

% OF AMINO ACID IN CRUDE PROTEIN

A vital amino acid for growth

	Milk	Skim milk powder	Whey powder	imunopro™
Lysine %	8.1	7.5	7.8	9.4
Leucine %	9.7	9.6	8.6	11.0

Higher levels of key amino acids

Critical in driving the rate of muscle protein synthesis. It is the reason why concentrated whey protein is the protein source of choice for athletes.

Crucial in early life immune development. We successfully collate these without damage in Imunopro for the benefit of the calf.

Protein for health*

% OF CRUDE PROTEIN

	Milk	Skim milk powder	Whey powder	imunopro™
IgG %	<1.8	<0.5	<1.5	>4.5

Lactoferrin – research findings

- Plays a vital role in innate defences
- Powerful iron binding antibacterial properties
- 2017 trial: supplementation to scouring calves
- Reduction in severity of episodes
- 50% reduction in mortality at 120 days**

Identified in **imunopro™** at elevated levels

imunopro™ and energy 15

Fat

FAT % OF DRY MATTER

Milk	Skim milk powder	Whey powder	imunopro®
33	1 ^a	1 ^a	16 ^b

a. Jensen *et al.* (2002, J. Dairy Sci. 85: 295-350)

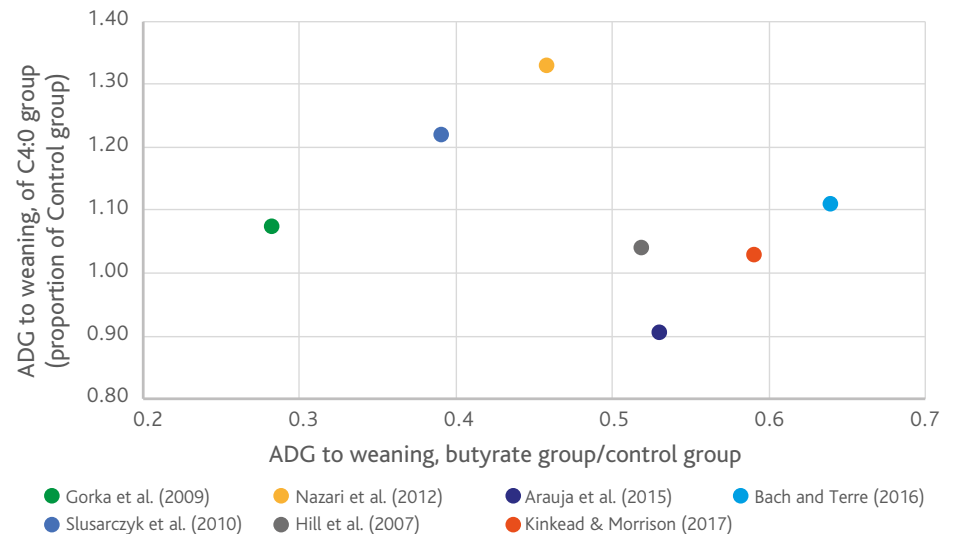
b. Volac Milk Replacers analytical data

Butyrate (or C4:0) is naturally found in milk fat and in higher quantities in Colostrum but is not present in the vegetable fat sources which are used in the milk formulas such as palm and coconut. For that reason, we supplement our milk formulas with additional butyrate.

Feeding Butyrate to young calves has a beneficial effect on overall growth, it increases rumen papillae length, improves gastrointestinal development, encourages pancreatic secretions, and nutrient digestibility, thereby improving average daily gain as it encourages better digestion and resistance to disease as well as stimulating intestinal blood flow and production of intestinal cells.

Milk fat exists in droplets of oil surrounded by a membrane containing other fats called phospholipids and sphingolipids. These support calf gut maturation and have anti-bacterial properties. These are essential nutrients for the growth and health of young animals.

imunopro® concentrates **16x** the amount of milk fats in comparison with whey powders.



*This shows that all calves supplemented with Butyrate experienced increased average daily gains to those which were not supplemented.**

*<https://feedforgrowth.com/ugc-1/uploads/pageblocks/607/978cdb1c6dac682d0038e13a07c741f1.pdf>

16 imunopro™ and energy

Sugars

imunopro® contains bovine milk oligosaccharides (BMOs).

Modern analytical technology reveals a rich mixture of complex sugars - oligosaccharides - in milk, many of which are bound to proteins and lipids.

Research is establishing in both humans and farm livestock, the important role these sugars play in steering the development of a healthy population of bacteria – the microbiome - in the infant gut.

Lactose Level – lactose is present in the milk of most mammals & is a readily digestible source of glucose

Lactose is the major carbohydrate in milk, present in the milk of most mammals. Milk fed calves have an excellent ability to digest lactose – it is broken down in the small intestine of the neonate into smaller monosaccharides (glucose and galactose). Lactose is a major, readily digestible source of glucose which provides energy for the young calf.

We know oligosaccharides are enriched in the calf milk formula ingredients we manufacture from whey.



The lactose level in a milk replacer can be calculated crudely by difference:

As Fed Basis

Lactose = 100 – (moisture % + crude protein % + fat % + ash %)

Dry Matter Basis

Lactose = 100 – (crude protein % + fat % + ash %)

Health Supplements 17

As part of creating the most performance formulated products available, we include high quality nutritional supplements to support calf health and encourage good growth.

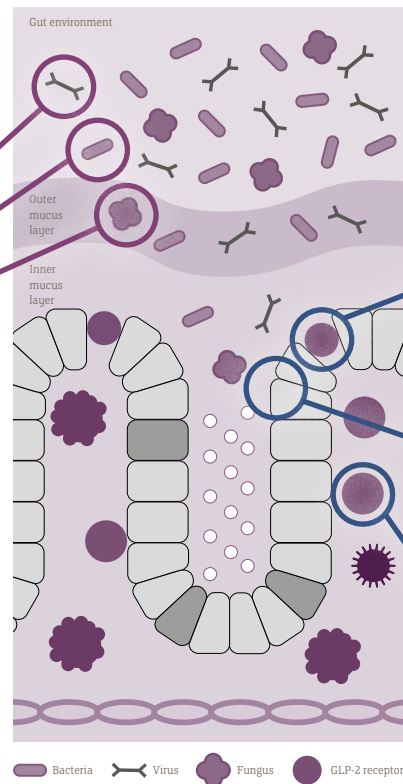


Derived from Garlic

- Antiviral activity
- Antibacterial properties
- Antifungal response

Benefits

- Enhances the function of the immune system
- Improves gut health



Energy uptake

Stevia

- Drives GLP-2 production
- Increases glucose absorption
- Improves gut performance

Structure

Eugenol, Capsicum, Stevia

- Increases mucus production
- Improves villi height

Immunity

Capsicum, Anethol

- Increases B- and T-cells
- Reduces inflammatory response

Benefits

- Improves gut performance
- Improves nutrient absorption
- Decreases risk of diarrhoea



Vitamins and minerals

Name	Amount per kg feed
Vitamin A	25 000 IU
Vitamin D3	10 000 IU
Vitamin E	500 IU
Vitamin K3	3 mg
Vitamin B1	5 mg
Vitamin B2	3 mg
Vitamin B6	3 mg
Vitamin B12	60 mcg
Vitamin C	100mg
Nicotinic Acid	20mg
Biotin	50mcg
Pantothenic Acid	10mg
Iron	100 mg
Copper	10 mg
Manganese	40 mg
Zinc	50 mg
Selenium	0.4 mg

Important in the process of bone development and immune system. New level assists immune status of the calf in the face of a disease challenge.

An important antioxidant. Higher growth plane calves respond well to increased vitamin E.

Improving blood quality (haemoglobin production) and therefore oxygenation.

Vital for bone and joint development - especially in fast growing calves.



Imunogard® incorporates the established hydrolysed yeast culture Celmanax™ from Church and Dwight to help improve calf gut function and mitigate the effect of a number of harmful pathogens.

Proven hydrolysed yeast cultures not only provide readily digestible refined functional carbohydrates for the calf; they also have a recognised prebiotic function. Put simply, the inclusion of Celmanax™ feeds the calf's beneficial gut bacteria and helps bind them to damaging bugs, such as cryptosporidia, E.coli and Salmonella spp. This stops these harmful pathogens from binding to the gut wall and taking hold to cause disease signs such as scouring.

For example, independent scientific trials have demonstrated that calves supplemented with Celmanax™ shed three times less cryptosporidium oocysts than those which were not, thus helping to reduce the spread of cryptosporidiosis. The Celmanax™ supplemented calves also had improved faecal and dehydration scores.

Imunogard® also benefits from the inclusion of other beneficial health supplements. For example, butyrate for its anti-inflammatory effects and ability to stimulate gut enzyme production, and the garlic-derived ingredient Gardion – known too for its natural pathogen inhibiting effects and ability to enhance immune system function.

Imunogard® should be mixed at the rate of 150g in every litre of water and be fed to calves according to Volac Milk Replacers standard growth curve recommendations.



Provides the materials for growth, primes the immune system and supports in pathogen control while developing the future of your herd.



Celmanax™ is a hydrolysed yeast culture, including this within a complete diet for calves improves gut health by feeding the beneficial bacteria (prebiotic function).

Celmanax™ could potentially contribute to decreasing medical costs by binding to the harmful pathogens (including E.coli and Salmonella) thus preventing them from attaching to the intestinal wall and taking hold.

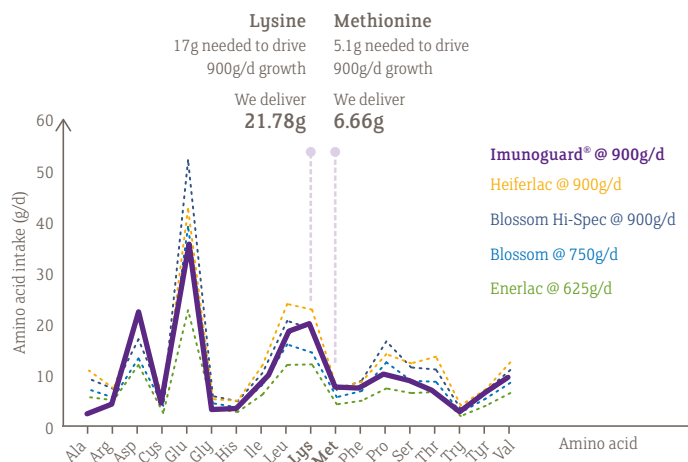
Due to the enzymatic hydrolysis process that breaks down the yeast cell wall, it makes the Refined Functional Carbohydrates (such as mannose and beta-glucans) readily available for use by the calf.

Calves which are supplemented with CELMANAX™ shed three times less crypto oocysts than those which were not, thus helping to reduce the spread of disease they also had improved faecal and dehydration scores. (J Anim Sci 2009 Vol. 87, Church and Dwight).



A helping hand

- 100% Dairy Protein
- 23% Protein: 21% oil
- 23% Protein to lay down the building blocks for maximum growth and development
- 21% Fat to allow for more energy to be metabolised by the calf rather than using it to fight off disease pathogens



Amino Acid	g per 900g/d
Lysine	21.78
Methionine	6.66
Cystine	4.68
Threonine	14.22
Histidine	3.78
Leucine	20.52
Isoleucine	12.42
Glutamic Acid	34.74
Arginine	4.95
Serine	10.35
Aspartic Acid	21.51
Glycine	3.69
Alanine	1.53
Tyrosine	6.03
Proline	12.42
Valine	11.52
Phenylalanine	6.3
Tryptophan	3.6

Elevated levels of essential acids including Lysine and Methionine which are needed to ensure optimum calf growth and development



HEIFERLAC[®]

When only the best will do

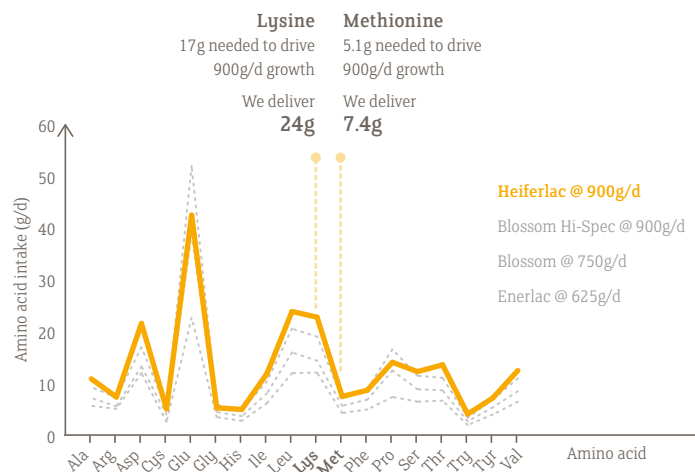
- High **imunopro**[™] content for long term performance
- Maximum programming and maximum growth
- Ideal for Pedigree and high EBI herds
- Gardion health package
- Highest leucine level



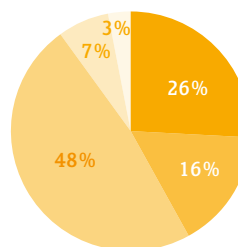
GARDION[™]



BUTYRATE



- P** Protein
- F** Fat
- S** Sugar
- Minerals
- Other**



Energy
17.7 MJ ME
at feed rate of
900g/d



*Based on recommended feeding rates with access to ad lib starter feed and water

**Other* includes moisture, vitamins, residual carbohydrates and feed additives

BLOSSOM[®]

HI-SPEC

When you need high performance

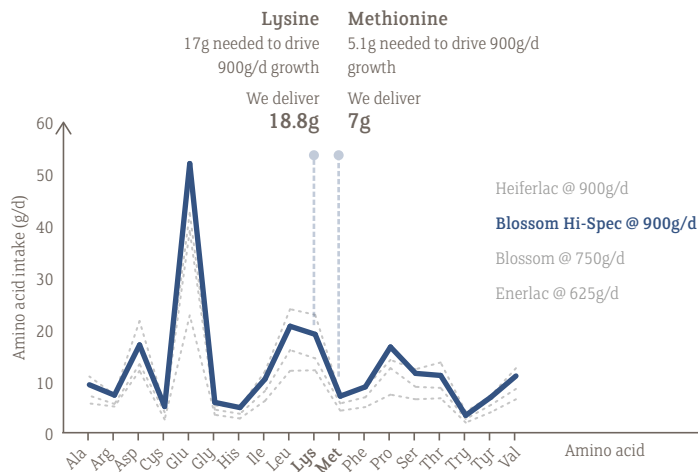
- The considered solution for large herds
- Developed for growth, for the business producer
- Very high **imunopro**[™] content
- Nutry-Lyst health package
- Very high leucine level



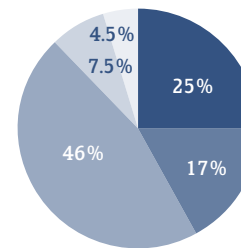
NUTRY-LYST[™]



BUTYRATE



P Protein
F Fat
S Sugar
Minerals
Other**



Energy
17.6 MJ ME
at feed rate
of 900g/d



*Based on recommended feeding rates with access to ad lib starter feed and water

**Other* includes moisture, vitamins, residual carbohydrates and feed additives

FLOURISH^{CALF}

Flourish Calf™ 50% skim, 100% Feed For Growth

Formulating with 50% of the ingredients from skim milk powder means the level of casein in the product is maximised which promotes good clot formation in the abomasum, resulting in better digestibility.

- 100% Dairy Protein
- 50% Skim milk powder inclusion to promote good clot formation and digestibility
- 23% Protein to lay down the building blocks for excellent growth and development
- 19% Oil to provide enough energy to the calf whilst encouraging starter intake to promote good rumen development
- Enhanced with Progres® to support good gut health and contribute to better animal performance.



GARDION™



BUTYRATE

In a recent (2024) trial of Flourish Calf, Calves fed a total of 57kg Flourish Calf milk replacer over 63 days doubled their birth weight (38kg) by weaning, weighing on average 91kg at 66 days of age. Calves also had excellent growth rates up to weaning of 0.84kg per day and continued to thrive post weaning with growth rates of 0.97kg per day. *For more information on this trial please visit the trial work section.*



*Based on recommended feeding rates with access to ad lib starter feed and water

**'Other' includes moisture, vitamins, residual carbohydrates and feed additives

BLOSSOM[®]

EASYMIX

The tried and trusted performer

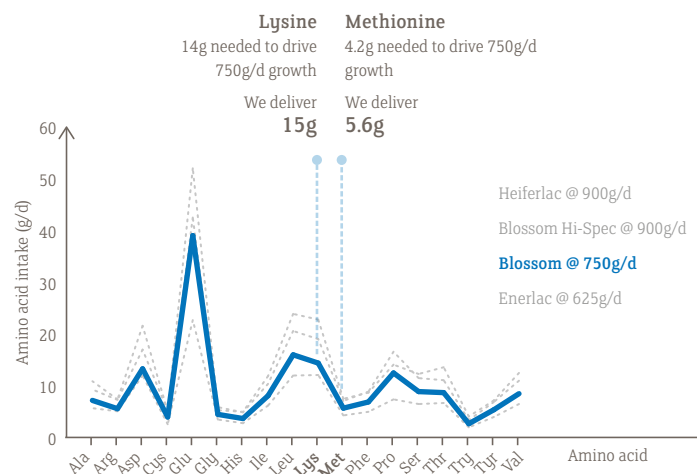
- Tried and trusted performance
- Great results every time
- High **imunopro**[™] content
- Gardion health package
- Higher levels of leucine



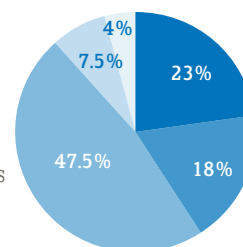
GARDION[™]



BUTYRATE



P Protein
F Fat
S Sugar
Minerals
Other**



Energy
14.85 MJ ME
at feed rate
of 750g/d



*Based on recommended feeding rates with access to ad lib starter feed and water

**Other* includes moisture, vitamins, residual carbohydrates and feed additives

OLYMPIAN

Optimised for beef

- 22% Protein : 20% Fat
- Optimised for Beef
- Contains Progut for extra immune support
- Formulated with the Feed For Growth health package including Gardion & Butyrate

Practical on farm trial work with pre-weaned beef calves reared on a commercial unit in Sussex has confirmed the potential of new Olympian Instant milk replacer to deliver healthy, highly cost-effective calf growth up until weaning.

Dairy origin Angus beef calves born during January and February 2025 received a total of 30.5kg of milk replacer over 42 days and weighed 99kg on average at weaning. Growth rates were excellent – with calves averaging 0.95kg per day up to weaning.

For more information on our Olympian trial work visit www.feedforgrowth.com

progut[®]
extra

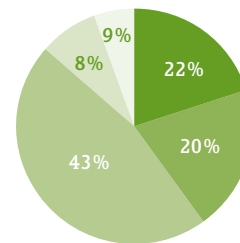


GARDION™



BUTYRATE

P Protein
F Fat
S Sugar
Minerals
Other**



Energy
50g CP
per
Mcal of ME



*Based on recommended feeding rates with access to ad lib starter feed and water

**Other* includes moisture, vitamins, residual carbohydrates and feed additives

RADIANT[™] CALF

Radiant results from day one

Radiant Calf supplies 52g CP per Mcal of ME - the optimal ratio for healthy growth this provides energy whilst encouraging starter intake to promote good rumen development. Containing high quality skim milk powder at 30% inclusion, it promotes good clot formation and digestibility for cost effective calf growth.

- 30% skim
- 23% protein : 18% Fat
- Enhanced with the unique milk oligosaccharides EXAMO
- Butyrate (C4 fatty acid) - improves gut health
- Gardion (derived from garlic) – enhances function of immune system & improves gut health

EXAMO is a unique combination of milk oligosaccharides - natural milk sugars. **EXAMO** supports a healthy gut microbiome, resulting in better nutrient absorption and a stronger immune system – crucial for calf growth and health.

EXAMO



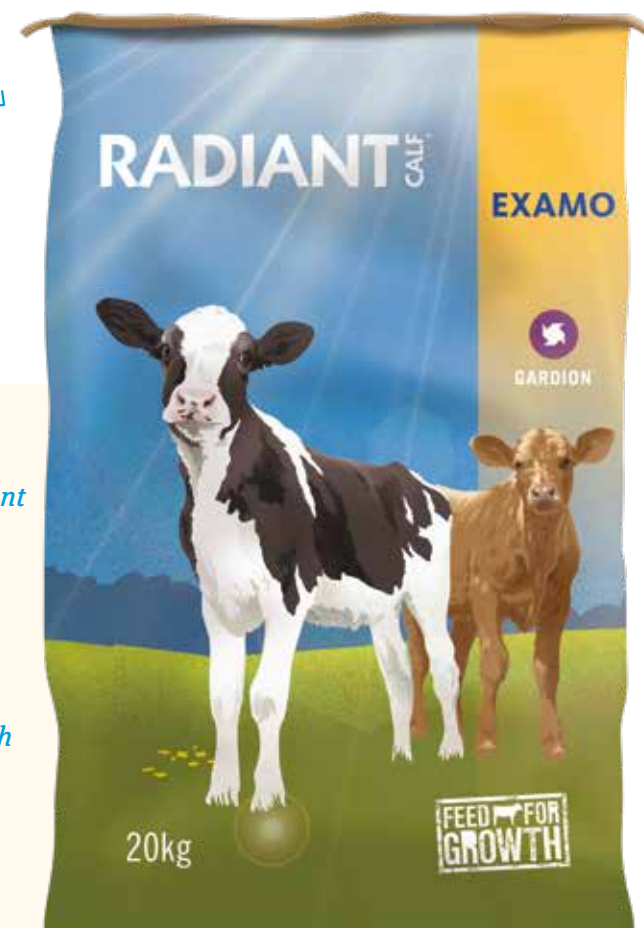
GARDION[™]



BUTYRATE

Recent (2026) trial work in Northern Ireland found that calves fed FRadiant Calf – hit all the key pre-weaning performance targets, doubling their birthweight by weaning.

They reached an average weaning weight of 82kg at 63 days of age, which translated into average growth rates of 0.72kg per calf per day from birth to weaning. Post-weaning growth rates averaged 1.2kg per calf per day whilst calf health was excellent throughout.



GUT REST

Feed for Growth **Gut Rest** - to support digestive disturbances

Feed For Growth Gut Rest contains linseed and pectins, combined with an electrolyte, which helps to rehydrate and support gut function and the intestinal immune system in youngstock which are suffering from scour.



What does it do?

Linseed and pectins work in combination to create a viscous solution which helps to slow down the digestive system which provides more time for the animal to take up fluids (water) and nutrients from the intestines, aiding rehydration. It also helps to thicken the faeces giving the gut time to rest and recover.

When to use

Use when animals are suffering digestive disturbances resulting in water loss and/or dehydration – can also be used as a first feed for bought in calves.

How to use

Mix in water at 35°C or milk or milk replacer. Feed alongside regular feed and fresh water.

Calves suffering light digestive disturbances – for daily support – mix 10g of Gut Rest per litre of water or milk replacer and feed from 3 to 14 days of age.

Calves suffering from significant water loss – intensive support – mix 50g of Gut Rest per litre of water and feed two litres twice a day for a maximum of three days.

Lambs – mix 10g of Gut Rest per litre of water and feed for 7-14 days.



ELECTROLYTES

Feed for Growth **Electrolytes** - designed for situations requiring hydration

What does it do?

Supports water uptake from the intestines – which replaces lost fluids and rehydrates the calf. The sweetened flavour enhances palatability which helps to promote water consumption contributing to starter feed intake and supporting rumen development.



When To Use

Use to hydrate healthy calves during stressful periods, such as cold or heat-stress, before weaning, and before or after transportation

How to use

Mix 25g of Electrolytes into 1 litre of water at 35°C. Feed alongside regular feed and water.

Calves daily support – use from 3 to 14 days of age, and provide 1.5 – 2 litres once a day.

Calves intensive support – in stressful situations – provide two litres of mixed solution twice a day for 2 to 3 days.

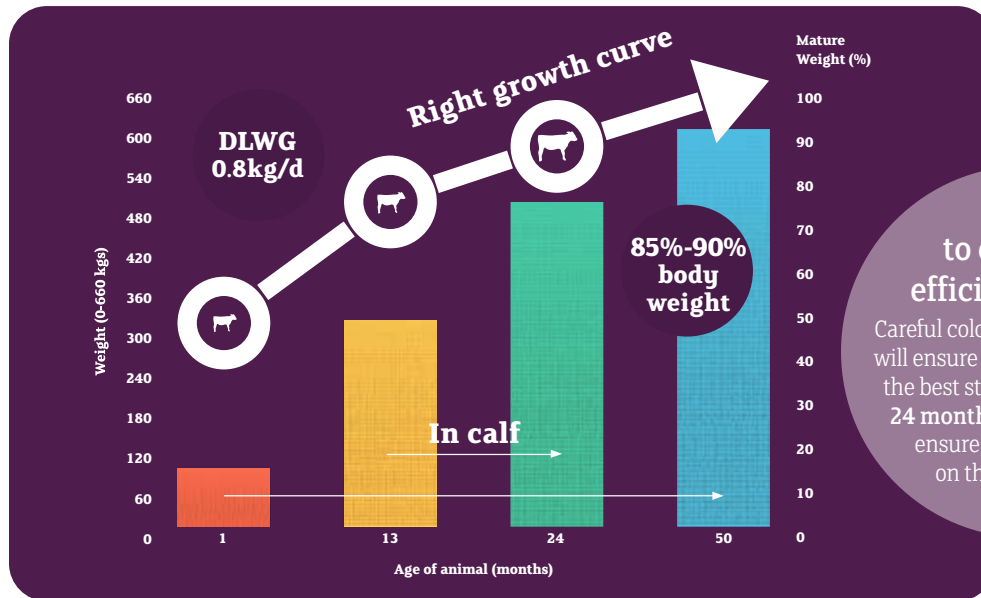
Dairy cows – dissolve 500g of Electrolytes in 20 litres of water and feed immediately after calving for improved water intake.

For lambs - mix 25g of Electrolytes in 1 litre of water at 35°C and provide for 1 – 7 days alongside regular feed and water.



28 Feeding for Efficiency

The average age of first calving in the UK is 27 months (NMR, Aug 2020) but calving heifers at **24 months of age** is proven to be more beneficial to their lifetime performance. Dairy heifers that fail to grow adequately from **Day 1** won't meet this important target.



How to create an efficient system

Careful colostrum management will ensure your calves get off to the best start. To hit calving at **24 months**, start at **Day 1** to ensure heifer calves are on the right growth curve.

The benefits of feeding more milk replacer

The primary source of nutrition for a calf during the first 3-4 weeks is milk and feeding more milk replacer from a few days of age will help:

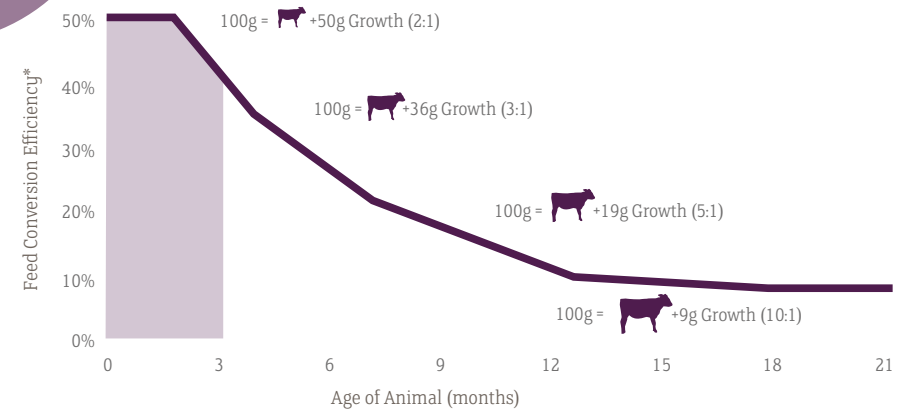
- Maximise feed efficiency
- Prevent early weight loss
- Maximise early growth potential
- Improve health
- Improve future performance



Maximising feed efficiency

Feed efficiency (def: the relative ability of the animal to turn feed nutrients into growth) is at its highest during the milk feeding period.

For the same amount of feed intake, as the animal ages, you get less growth back out, so take advantage of the high feed efficiency in the first two months of life to maximise growth.



*BW gain/amount of feed consumed Bach & Ahedo 2008 Vet Clinics Food Animal Prac 24 117-38

The growth triangle

To get heifer calves off to the best possible start and hit the DLWG target of 0.8kg/day, create a positive 'growth triangle' around 3 key elements:

- Environment
- Nutrition
- Health



Feeding for Efficiency 29

Not all Milk Replacer is the same

The type and quality of ingredients in a milk replacer will also help determine calf performance. Calves fed milk replacer with a high inclusion level of Imunopro™ grew faster compared to those fed milk replacer with a low-level inclusion of Imunopro™.

	Body Weight kg	
	Low Imunopro™	High Imunopro™
Birth	39.7	38.5
Day 14	46.6	47.1
Day 28	54.0	53.9
Day 42	61.9	64.1
Day 56 (weaning)	74.1	77.7
Day 70	91.8	94.9

Volac Milk Replacers Calf Trial 2019/20 – AFBI, Hillsborough, NI

The benefits of high-quality milk replacer

Feeding a precise level of high-quality, precision formulation milk replacer that has been balanced with the optimum level of vitamins and trace minerals will ensure your calves will reach their full potential and meet your targets.

Benefit to calf	Benefit to farmer
Maximising growth and development during the milk drinking phase will help with overall development and assist in a strong immune system ensuring your calves remain healthy and will meet their full potential.	Stronger immune systems mean a healthier herd, resulting in less illness, better growth rates and fewer losses.
The whey fraction of colostrum contains the bioactive content for calf success, we take liquid whey and concentrate it up to make our unique Imunopro® which is present in all our milk replacers.	To achieve a minimum growth rate of 0.7kg/day pre-weaning, a minimum of 750g-900g of milk solids per calf per day should be fed in at least two feeds. Increasing the pre-wean average daily growth is proven to have a positive impact on age at first calving and the first lactation milk yield.
High-quality milk replacer leads to healthier, bigger and better developed calves, keeping them healthy and strong.	Feeding high quality milk replacer ensures your calves get off to the best start for an efficient and sustainable system.



The 3 Pillars of Feed for Future

Feed for Future is an initiative set up by Volac Milk Replacers in which we want to encourage the industry to do better for the future. Beginning with looking after the future of our planet by using sustainable raw ingredients, the future of our industry by helping give back where we can and the future of your herd and your business by encouraging efficient and sustainable practices on farm to increase the longevity of your herd and increase the profitability of your business.



30 Palm Products Sustainability Policy

We are committed to helping dairy farmers improve productivity and the longterm health and welfare of their animals in a responsible and sustainable way. We aim to be the agents for change advocating responsibly sourced palm oil and palm oil derivatives. Our ambition is to lead the discussion on the importance of looking after the future dairy herd and the use of sustainable palm oil.

Benefits of palm products

Volac Milk Replacers uses Palm olein (a derivative of palm oil) in its milk replacer formulations because its fatty acid profile is perfectly suited to youngstock nutrition as well as its efficiency and cost effectiveness as a crop. Palm is the most efficient oil-producing crop available today, producing more metric tons of oil per hectare than any other vegetable crop. This is important as the ever-growing global population strives to produce enough food. Palm is a particularly attractive commercial crop for smallholders, because they can grow it on a range of soils, requires relatively little fertilizers and pesticides, and bears fruit all year-round. Currently, oil palms are grown on approximately 7.4% of land devoted to vegetable oil crops, yet palm oil makes up 39.6% of all vegetable oil production. (EPOA)¹

Global context

It is predicted that the global population will rise to more than nine billion by 2050, which in turn is expected to result in significant increase in the demand for palm oil and its derivatives. Volac Milk Replacers recognises that whilst plantation development has contributed significantly to economic development in countries where palm oil is produced, and while a great deal of improvement has been achieved, in some cases the production of palm oil can still be linked to sustainability challenges like deforestation and exploitation of people and local communities. If palm oil and its derivatives are to play a leading role in the future of farming, then Volac Milk Replacers is convinced that it must be produced in a sustainable and responsible way.

Policy aims

Our sustainability policy for Milk Replacers guides us in our strategic and daily operations and also our future activities. It helps shape our broader sustainability agenda and serves as a promise to our customers, consumers and other stakeholders. It will educate and inform people about our use of palm-based materials and it is our vision and strategy to become a leader in sustainable dairy nutrition.

This policy applies to all Palm oil and its derivatives within our Volac Milk Replacers Branded and Joint Branded Milk Replacers that we purchase as Palm olein or any other palm oil derivatives.

Our commitments

1. To only use palm oil derivatives in our milk replacer products from sources that fulfil NDPE sustainability criteria or RSPO Certified Sustainable Palm Oil.

Volac Milk Replacers only sources palm oil and it's derivatives for milk replacers from suppliers that share our commitment to the sustainability criteria of 'No Deforestation, No Peat and No Exploitation' (NDPE) with respect to plantation development and the palm oil supply chain.

The NDPE criteria are: -

- No Deforestation
- No Development on Peat
- No Exploitation of People and Local Communities

2. Transparency and traceability for all the palm oil derivatives and final products within our supply chain.

We define 'traceability' as the ability to trace palm oil throughout the supply chain back to mills. Our Palm Olein is > 99% and traceable back to mill.

3. To actively promote the benefits of sustainable palm oil within the animal feed industry

Volac Milk Replacers only use products which have been supplier assured to align to NDPE criteria or that are RSPO Certified.

Volac Milk Replacers has strong business and sustainability ambitions, however we acknowledge that in relation to the global palm oil production, the impact we can have as individual businesses is relatively modest. Therefore, we will do all we can to influence our industry and will collaborate with partners (customers, suppliers, processors, retailers, governments, NGOs and broader stakeholders) to further develop the sustainability, traceability and responsible sourcing of palm products, including those certified by the Roundtable on Sustainable Palm Oil (RSPO). For our full Palm Oil Policy please see www.feedforgrowth.com



¹ <https://palmoilalliance.eu/wp-content/uploads/2019/10/Brochure-Palm-Oil-Story-2019-FINAL.pdf>

Avoid temptation to feed whole milk to calves 31

In a situation where milk price falls farmers are urged to avoid the temptation to feed whole milk to calves.

Farmers risk compromising calf health and the long-term sustainability and yield potential of their herd if they make attempts to cut costs by feeding calves whole milk.

That's the message from vets and milk feeding specialists who are reminding rearers of the health risks associated with whole milk and urging farmers to feed a quality calf milk replacer (CMR) and not to cut costs in the milk feeding stage.



Dr Jessica Cooke from Feed For Growth (Volac Milk Replacers Limited) says the milk feeding period lays the foundations for success. "It's always worth investing in calf growth, whatever

the milk price," she explains. "Ultimately, you're investing in your herd's future. If you cut back now, you're not making the most of high feed

conversion efficiency during the milk feeding stage.

"By feeding whole milk, you could also inadvertently introduce disease, which could have a detrimental impact on growth and stop heifers from calving in at 24 months, which is the optimum for health, survival and higher lifetime daily yield."

There are five main reasons to opt for a precision-formulated CMR:

1. Lower health risk

With whole milk posing a particular risk for Johne's, Bovine TB and Mycoplasma bovis, vet and Kingshay Training Consultant, Michael Head believes it's worth feeding a quality CMR to safeguard calf health.

"Mycoplasma is pretty endemic in the national dairy herd and has great ramifications on calf health and ongoing production," he explains.

Mycoplasma bovis can be spread by oral-nasal contact and via the milk and is a factor in the calf pneumonia complex. As pneumonia can cause reduced daily live weight gains (DLWG) and lower feed conversion efficiency, it can have a profound

impact on calf performance. For example, infection can cause DLWG to drop from a target 0.8kg/day to 0.4kg/day, with growth never completely recovering. This increases lifetime costs and reduces efficiency of production (Andrews AH, 2000).

Milk harvesting also poses a risk of Johne's and Bovine TB transmission as the diseases can be spread by oral-faecal contamination, as well as directly in the milk. This highlights the importance of hygienic collection, but also the risk of feeding whole milk.

"Any animal is susceptible to Johne's up to six months of age. Although whole milk is not as risky as colostrum, it will prolong the period of potential exposure to Johne's," Mr Head explains.

Dr Cooke says a hygienically prepared, precision-formulated CMR is the best way to safeguard against disease spread. "These calf milk replacers will always be the best option as they are bio-secure and hygienic because they are made from pasteurised milk," she explains.

When feeding whole milk cannot be avoided, pasteurisation should be considered and pooling

should be avoided. Milk from Johne's positive cows must never be fed.

2. Better consistency

When mixed and fed correctly, CMR delivers a consistent macro and micro-nutrient supply to the calf, whereas the quality of whole milk can be hugely variable.

"You won't know day-to-day what the energy and protein of that product (whole milk) is, whereas you do with milk replacer," Mr Head says. "There's also changes in temperature. You could be potentially giving calves milk that's been harvested immediately before feeding (so it's warm), or milk that's hours old, so it could be a reservoir for bacterial growth and a cause of scours and potentially septicaemia."

3. More hygienic

As whole milk is collected directly from the cow, there is more chance of faecal contamination which poses a disease risk to calves.

"You are feeding neonates. You need to take a HACCP (Hazard Analysis and Critical Control Point) approach to feeding milk, which means identifying and preventing hazards to ensure food safety. And there's more risk when you're feeding whole milk," Mr Head says.

Dr Cooke stresses that whether feeding whole or CMR, milk should always be prepared in hygienic conditions and stored in clean containers.

"Always clean feeding equipment between groups of calves and disinfect after every feeding to help reduce the spread of disease between calves," she says.

4. Encourages starter intakes

High quality calf milk replacer products, such as any formulation from Feed for Growth (Volac Milk Replacers), tend to be lower in fat, but higher in lactose than whole milk, which will encourage a better solid feed intake, Dr Cooke adds.

"In comparison, whole milk can postpone the intake of solid feed by the calf, which may delay the age of successful weaning or result in post-weaning growth checks, which could compromise hitting a target age at first calving of 24 months."

5. Higher in amino acids

High quality CMR – particularly those utilising concentrated whey protein - also offer superior, consistent amino acid profiles for muscle growth compared to whole milk which varies in quality - although not all CMRs are created equal so it's worth checking with individual merchants.

Feed For Growth's Imunopro® delivers high levels of essential amino acids, including lysine and leucine. Lysine is a vital amino acid for growth, whilst leucine is critical for driving muscle protein synthesis and is the protein source of choice for athletes. CMR is also fortified with vitamins and minerals to ensure calf requirements are met.

AVOID WASTE MILK

As most farmers are aware, waste milk from cows receiving antibiotic treatment should also not be fed to any calves -whether beef or dairy – to avoid antimicrobial resistance. The Responsible Use of Medicines Authority (RUMA) recommends disposing of it in the slurry pit.

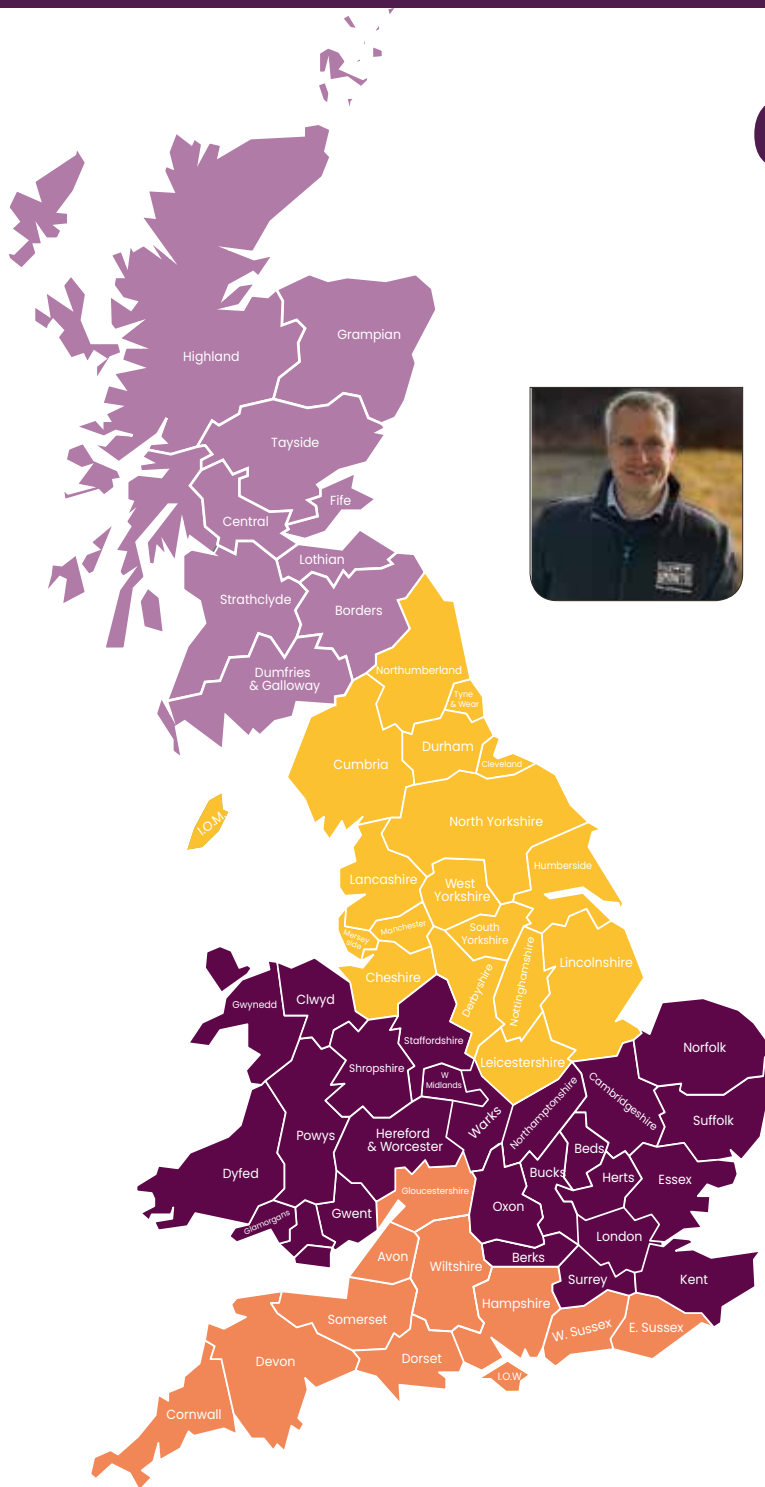
A Teagasc study showed that dairy-beef calves fed milk containing low levels of antibiotic residues had a greater number of resistant bacteria in their faeces compared to the control group fed a CMR with no antibiotics. In addition, these calves were more likely to have looser stools between 9-12 weeks of age.

DO YOU KNOW?

Around third of dairy farmers agree it's not a good idea to feed whole milk to calves, according a 2024 survey of more than 270 milk producers.

Around 40% were unsure about the practice and only 25% disagreed that whole milk should not be fed.

Contact your local Feed For 33 Growth Business Manager



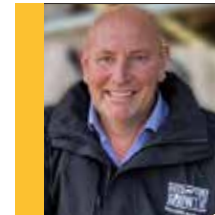
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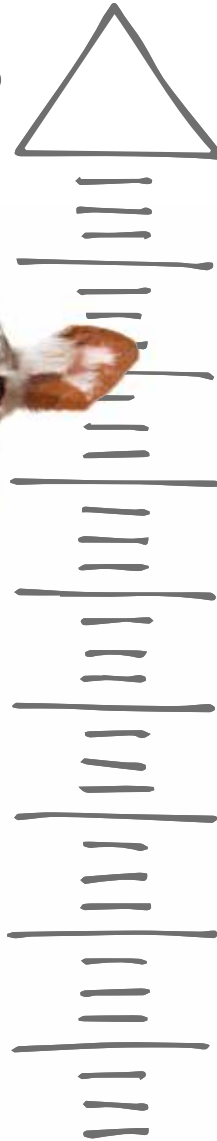
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A photograph of a young brown and white cow standing on a bed of straw. The cow is facing slightly to the right but looking towards the camera. It has a white face with brown markings around its eyes and ears. Its body is primarily brown with white patches on its legs and underbelly. The background is a plain, light color.[illegible]

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**YOUR PARTNER FOR
PERFORMANCE**

