

Calf milk replacers: tips and pointers on making the best choice for your calves. [Page 24](#)

Survey results: producers are waking up to the benefits of feeding calf milk replacer. [Page 26](#)

What's new? We take a look at the latest products and research that focus on young stock. [Page 28](#)



Make milk replacer buying choice on merits, not on price

Fit for purpose

How do you ensure that the calf milk replacer that you buy is the best choice – and investment – for your calves?

Look behind the label and determine your objectives are just two tips from a leading calf specialist.

text **Rachael Porter**

Producers are increasingly recognising the growth and health benefits of feeding calf milk replacers and ‘investing’ in nutrition. And they are appreciating the potential risks of feeding unpasteurised or waste milk from the herd. But how can producers ensure that they buy the most suitable product for their calves, to realise their potential and get the biggest bang for their buck? “The starting point is to actually decide what your objectives are – what are your calf feeding goals?”

So says Cargill’s calf specialist Bianca Theeruth. “Just saying ‘I want to feed my calves and I want them to grow’ isn’t enough. Are they cross-bred beef calves or are they dairy heifer replacements? What feeding system do you use? And what potential

challenges do your young calves face? Do you know, for example, that scouring can be an issue on your unit?”

Lean growth

She says that answering all these questions – sometimes more – form the basis of selecting the best CMR for the calves on your unit. “For example, the type of CMR that’s best suited to rearing calves for beef will be different to the

type of CMR that’s best for encouraging lean growth, which is what producers need when rearing dairy replacements.” She says that too many producers still purchase CMR based on price or, even, availability.

“If they run out, it’s often a case of buying what the local farm store has in stock – and that’s not really the most efficient or effective approach.”

She says that some will look at the label and actively seek out either skim- or whey-based CMRs.

“But even that’s not enough. It’s not just about the CMRs ingredients. The quality of those ingredients is also important. Not all CMR powders are formulated the same or made from the same ingredients. The source of the skim or whey can be different.

“So it’s important to dig deeper and even ask questions. Don’t take the label at

Table 1: Constituent level ranges for CMRs

nutrient	min level	max level	comments
protein (%)	20	26	higher level for greater frame growth
oil (%)	15	22	main energy source alongside lactose
fibre (%)	0	0.5	higher levels indicate inclusion of non-milk protein
ash (%)	6	8	CMR ingredients can affect ash
vitamin E (mg/kg)	0	250	higher levels costly but improved immune function in animal
selenium (mg/kg)	0	0.3	0.3 mg/kg is the legal maximum inclusion in complete feed

CMR formulation is closer to Mother Nature

Trouw Nutrition has launched a calf milk replacer that it says is unique, because it has been formulated to optimise digestibility. “We’ve developed this product with the calf’s needs, from day one, in mind – so that’s growth, development and health. And we’ve focused on digestibility,” says ruminant technical business manager Georgina Thomas.

Analysing growth curves and feedback from producers on existing calf milk replacers suggested that calves can struggle for the first two to three weeks, but then they started to grow well. “So we took that feedback and asked: why? Research revealed that digestibility of calf milk replacers was the issue. The products already on the market – be they skim or whey based

– are a long way from whole milk in terms of their ease of digestibility. So we thought why not formulate a CMR that’s closer to whole milk in its composition and its digestibility?”

The result is Milkivit Energized Calf Milk, which comprises 50% skim milk and 25% oil. “There’s more fat, to make it energy dense, and less lactose. This makes its formulation much closer to whole milk,” explains Ms Thomas. “We set out to make it the next best thing.

“The fat proportion of the CMR comes from palm and coconut oil and it’s been formulated to replicate the fatty acid profile of whole milk. The fat globules are small, like they are in cows’ milk, to aid optimal digestibility. “The aim was to produce a CMR that was energy dense and digestible –

as close to whole milk as possible. Osmolality was also important to the research and development team. We were looking to produce a CMR that had reduced osmolality.”

Osmolality levels are a risk factor for calf scour. CMRs with elevated levels of osmolality can damage the calf’s gut and increase the risk of abomasal bloat (due to slower gastric emptying) and exacerbate diarrhoea in sick calves. “We have therefore ensured that the osmolality level of this product is closer to that of whole milk.”

Feedback from producers who’ve trialled the CMR is that calf growth rates for the first two to three weeks are higher compared to the control CMR. And the incidence of scour is also reduced.

Producers' check list when buying a CMR

- The type of CMR required will depend on your rearing system, disease risk and rearing objectives.
- Check the basic information on the label. Constituent levels should fall within published ranges (see Table 1).
- Determine whether the CMR is skim-based or whey-based. If whey powder is the first ingredient listed, then the CMR is whey-based and vice versa for a skim-based CMR.
- In the case of skim-based CMR, find out the inclusion rate of the skim milk or skim derivatives, as this will determine clotting ability. Skim derivatives can include butter milk, whole milk powder and casein.
- Skim derivatives are usually cheaper, but it is important to know the quality and processing method of these derivatives. These factors can affect feeding characteristics and nutritional value. CMRs that include skim milk powder are considered premium products.
- Compare like for like, in terms of nutritional value, cost and your own objectives, to compare like for like. The label will not provide enough information.
- Ask questions and take advantage of manufacturers' technical support teams and additional product information.

face value – it won't tell you everything you need to know."

She also recommends that producers buy 'top end' CMRs wherever possible. "It's most definitely the case that you will get what you pay for so, particularly if you're rearing valuable dairy heifer calves, it's worth spending a little more for a higher quality, higher-spec product. You will see a return on that investment." Skim-based powders are ideal if you want to put a shine on calf coats and get them looking their best for market. "They're also better at keeping the calf satiated and fuller for longer, as they form a clot in the calf's abomasum. This will be slowly broken down in between six and 10 hours."

Well nourished

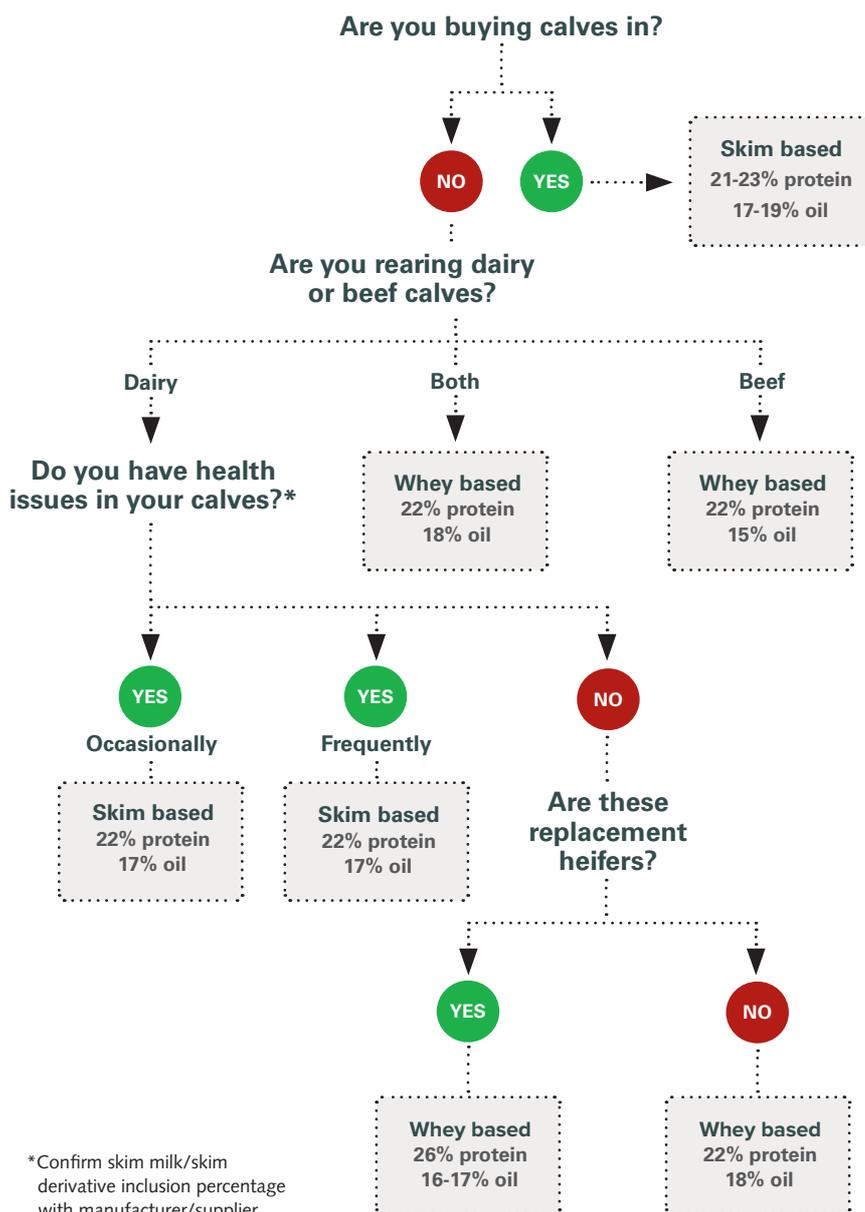
"Whey-based powders, however, don't form a clot and pass through the calf's abomasum in fewer than two hours."

That's not to say that whey won't do the

job and keep calves satiated and well nourished. "There's plenty of published work that shows that there's no difference in performance between the two, in terms of feed conversion

efficiency or daily live weight gain. So don't be swayed by that. Remember, exactly which powder is best for your calves – skim or whey – will come down to your individual objectives." |

Figure 1: Calf milk replacer decision tree and suggested nutrient levels



Producers are recognising the benefits of feeding calf milk replacers

Have you made the switch?

A recent survey has shown that more producers have made the change from whole milk to calf milk replacer, when it comes to feeding young stock. We spoke to a leading cattle vet to find out more.

text **David Butler**

During the past 10 years there has been a three-fold increase in the number of dairy calves being reared on milk replacers. So what's driving this trend?

At the end of 2017 Volac carried out a series of in-depth interviews with more than 600 British dairy and beef calf rearers. The project repeated a detailed market study carried out by the company a decade previously. And the findings show that young stock rearing practices have changed significantly since 2007 and will continue to evolve to meet market needs.

The move towards feeding calf milk replacer has been driven by a greater awareness of the threat of disease from feeding whole and waste milk, according to vet Dave Gilbert, from Dairy Insight. He independently reviewed the research findings for Volac and he says that the



switch has also been influenced by new recommended herd efficiency targets and economics.

“Back in the mid 2000s, it was common to see calves reared on whole milk – be that saleable or waste,” he says. “But now we find that the practice of whole milk feeding, outside of the immediate post-birth colostrum feed, to be the exception rather than the rule. At least 75% of the calves we look after on clients’ units are reared on milk replacer.”

The research reflects his experience. In 2007 just 17% of calves were reared on milk replacer alone, but not the figure is 54%.

“Several different pressures on producers have also accelerated this trend,” explains Mr Gilbert.

“Industry consolidation and the need to relentlessly improve efficiency to survive means that most businesses are more focused on economics than they were 10 years ago. “And we’ve seen milk retailers and processors become much more interested in what goes on at farm level, as well as various industry initiatives to tackle disease problems. Action Johne’s is just one example. This knowledge exchange has increased awareness about where improvements can be made.”

Growing understanding

Mr Gilbert adds that the survey results show that health and financial concerns are the two main drivers for choosing to use calf milk replacers rather than whole milk.

“Producers have a growing understanding of the risks of feeding whole or waste milk to their calves – a practice that should be discouraged. However, it’s concerning that one in three still don’t see any problems with feeding whole milk.

“What’s more, this research suggests that almost 11% of calves are still being fed waste milk, something that certainly cannot continue. Feeding waste milk contaminated with antimicrobial residues may be an uncomfortable truth, but it is something the industry must face up to and tackle. Producers also now seem to have more of an appreciation that the feeding of otherwise saleable milk is costly,” he adds.

The study also suggests that, with an increasing awareness of the importance of good young stock performance to the profitability of their business, producers are becoming more discerning and



Dave Gilbert: “Pressures on producers have accelerated the switch to CMR feeding”

demanding about what constitutes good nutrition for calves.

“Back in the early 2000s, milk powder was simply that and, for many producers, its purchase was an afterthought. That’s no longer the case,” says Mr Gilbert. “Now, with an increased focus on the need to achieve good calf growth rates to be calving heifers down at a target of 24 months, producers are asking more questions about the milk replacer they should be feeding – both in terms of ingredient quality and raw material sources.”

Ingredient quality

When evaluating calf milk replacers, the 2017 research shows that overall ingredient quality is now the key feature that producers are looking for. In 2007 this was deemed far less important, with availability in store being the leading attribute sought when making a product choice.

Against this background, Volac has re-examined its calf milk replacer formulation by identifying the best possible nutritional solution for the pre-weaned young calf. Its conclusion was that whey protein contains the magical components of milk that are so fundamental for calf programming and development.

“Milk does several critical jobs,” explains company nutritionist Ian Watson. “It provides ingredients for growth, primes

the immune system, assists in pathogen control, and shapes the future growth and development of the calf during the critical first few weeks of life.

“These goals are predominantly delivered by bioactive components in the whey protein fraction of milk. For example, natural cow colostrum contains a much higher proportion of whey protein, around 65%, compared to whole milk, with 20%

Calf growth

He adds that the company filters and concentrates the liquid whey protein portion of milk and collects the important proteins, fats, sugars and other bioactive components so important for calf programming.

The resultant ingredient, which is now integral to all its calf milk formulations, is Imunopro. “This is a unique concentrated whey protein-based material that’s packed with the vital amino acids and immunoglobulins so necessary for healthy calf growth and development,” he says.

“Production of this concentrated whey protein also means that we can now precision-formulate our calf milks based on true protein. This involves looking at the crucial limiting amino acids for calves – such as lysine and leucine – just as pig and poultry sector nutritionists have done so effectively in recent years for monogastric species,” he adds. |

Check list advice and kit that can transport large volumes of calf milk

What's new in calf rearing?

We showcase a piece of kit that can take the strain when transporting larger volumes of calf milk, as well as a recently launched calf-health campaign

text **Rachael Porter**

① Moving milk, made simple

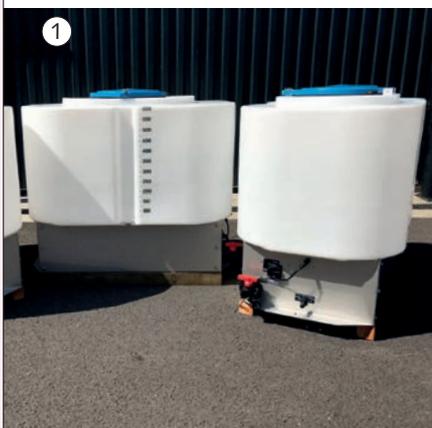
With a variety of calf housing and feeding options in use, there is often a requirement to move large amounts of milk quickly, efficiently, and safely. Pyon Products' Milk Freighter will mix milk powder and deliver to multiple locations via a pump, hose and nozzle.

Available with either 420-litre or 620-litre capacity, the machine can handle either whole milk or mix calf milk replacer. And it can be made to suit an individual unit's particular transport system.

Options include: a mixer powered by mains electric or Honda WX15 petrol engine; a wheeled version, with forklift pockets or skids; a mixer version, for producers feeding calf milk replacer, or a whole milk version; and the machine can be configured to dispense milk by gravity or via pump, with or without a flow meter.

"We have had repeated requests for a versatile system to move bulk milk around the unit," says the company's Alan Dickson. "Every producer has different needs, so the machine comes in a variety of specifications, and is custom built to order."

➤ For more information visit: www.pyonproducts.com



② Check list improves health

Score-based audits of young stock rearing systems are helping producers to pinpoint calf husbandry weaknesses and identify opportunities to improve the health and productive performance of their future herd replacements.

So says MSD's vet Kat Baxter-Smith, who also highlighted the benefits being gained from interactive on-farm calf health assessments, during seminars held at UK Dairy Day.

"Producers who are concerned about calf health can now ask their vet to use the MSD Animal Health check list tool to score their young stock rearing system," she says. "More than 100 young stock audits have now been completed this year and producer feedback suggests improving colostrum management practices are a priority for many units." The check list helps the vet and producer to work closely together to draw up a workable action plan to improve calf health.

"The tool explores, records and scores calf health performance across five core areas to identify the strengths and weaknesses of any rearing unit's environment and processes," Dr Baxter-Smith explains.

"Working through a series of 10 questions within each core area – designed to tease out where a rearing

unit is in terms of accepted best management practice – allows them to quickly pinpoint any areas needing attention.

What's more, repeating the checklist every six or 12 months is a good way to keep things on track, allowing both parties to monitor progress against agreed targets."

③ Calf health campaign

A cross-industry initiative to improve calf health, with the aim of encouraging more producers to engage in proactive health planning, has been launched by the cattle antibiotics group.

The campaign, which will be running until 26 October, covers all parts of the beef and dairy calf production systems and will focus on three key areas: identification and appropriate treatment, review planning and disease prevention.

"Taking a proactive approach to calf health through health planning is key to minimising any threats of disease," says NFU dairy board vice chairman and group member Paul Tompkins. "Rearing calves can pose many challenges – from colostrum management through to the transition from unit to unit – so it is important to think ahead and have a strategy in place to be able to successfully deal with and prevent disease.

