

@CalfChat

Time to talk about calf rearing!

Benefits of developing calf's digestive system in tandem with milk feeding.

A compound known to play a major role in establishing a calf's immune system and encouraging gut microbiota is now included in Transformula transition milk replacer.

As new research emerges showing that microbes in a calf's lower gut and rumen are key to its long term health, immunity and production efficiency, there is good reason to get feeding and weaning protocols spot on.

Calves are born with a microbial community, otherwise known as the microbiome, already in place; it can be detected months before a calf is even born. (Figure 1)

This microbiome is influenced from the very beginning, by the genetics of the dam and calf, the calving process and the feeding of colostrum and

Microbes can be detected in an unborn calf's digestive system 4 months before birth

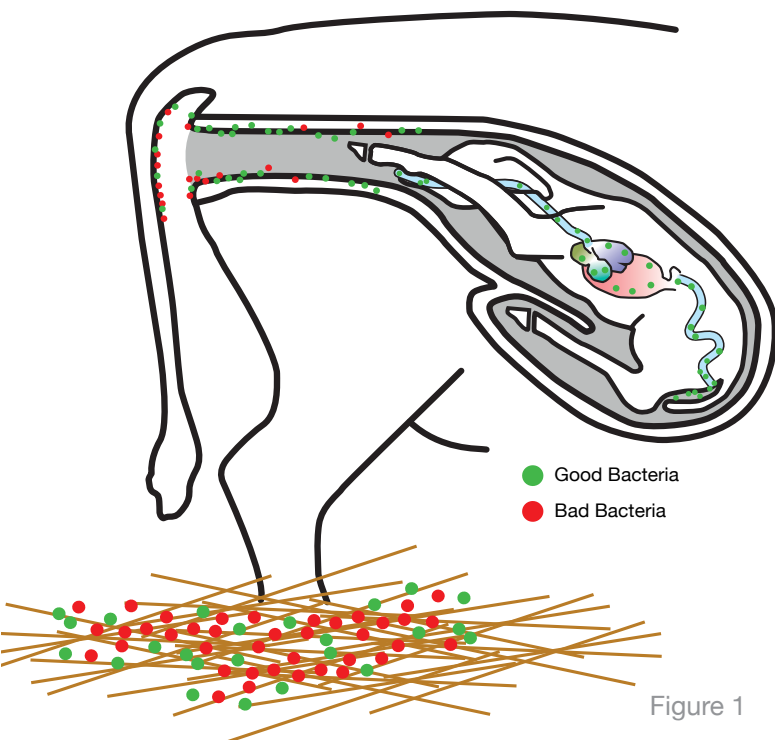


Figure 1

transition milk. Prebiotics in colostrum help kickstart the calf's digestive and immune system, followed by transition milk (figure 2).

Feeding a good quality milk replacer will help develop the calf's digestive system and its microbiome because that microbiome responds to milk feeding, even to the quality of water offered.

The microbiome can be made up of over 900 different types of microbes producing tens of thousands of enzymes, essential fatty acids, vitamins and hormones.

It is well known that the use of waste milk containing antibiotics, or giving antibiotics in general, undermine and reduce the diversity of the microbiome, says Dr Christine Cummins, of Bonanza Calf Nutrition.

“The microbes in the rumen are in balance even at two weeks of age and respond at first to increased fibre consumption but more slowly to starch intake,” she explains.

The microbes in the calf's gut change over time to respond to fibre and starch consumption in the dry feed; these are mostly responsible for how starch is digested in the small and large intestines.

It takes time for the microbial population to change from those that digest most of the lactose - the lactobacilli - to bacteria that can utilise starch. It is estimated that a third of the starch fed to calves is potentially digested in the small and large intestines.

This is the reason why calves fed high levels of milk require much longer rearing periods, says Dr Cummins.

“If calves are offered 900g+ of milk solids, the weaning process will take four weeks or more therefore calves should be fed milk until 12 weeks or more.”

When calf growth is pushed with milk solids, weight is increased but so too is reliance on lactobacilli.

A calf that is weaned over one to two weeks will eat a lot of dry feed but its rumen can't utilise it; the small



Dr Christine Cummins

intestine also struggles and this leads to inflammation in the gut and any benefit from extra milk feeding is lost, and that is expensive and wasteful, says Dr Cummins.

“Also, what must not be ignored is that in systems in which a calf is suckling the dam, the cow will produce only 10-12 litres of milk after four to six weeks and that calf is weaned at 6-8 months. Milk replacer systems are trying to mirror that in eight weeks.”

Dr Cummins points out that there is another approach and that is to start reducing milk feeding frequency from four weeks of age.

“Calves prefer to drink 60% of adlib intake in the morning feed so moving to once a day milk feeding at this stage will keep calves happier.”

“This will also encourage more dry feed intake and help develop the correct microbiome for forage and concentrate utilisation. It can also positively influence longevity and protect calves from becoming over-fat, a factor which could reduce longevity.”

A better and more cost effective method is to do as the cow does naturally and that is to offer the calf about 2% of its birthweight (600-900g) in milk solids, Dr Cummins adds.

“By holding the feeding rate constant, the calf can be encouraged to eat more concentrates from an earlier age.”

And by moving to once a day feeding and then to reducing the feed volume before finally weaning,



Giovanne Mazzeti is one of the many satisfied Italian farmers using the Shine Once-a-day formula.

To learn more and also to see the benefit of altering the feeding programme on your automatic feeder go to: www.bonanzacalf.ie/news-and-media/

growth checks at weaning can be eliminated and the calf’s health protected, maximising its potential whether it’s a beef or dairy animal.

Dr Cummins says there are no magic ingredients, secret formulas or feeding regimes with calf nutrition and, while it might seem logical that more is better, digestive systems are complex.

“By weaning earlier than a cow in nature would, it is very important that milk, concentrates, water and forage are used in tandem,” she says.

Factors effecting the development of the calf’s Microbial community or microbiome



Figure 2

Transform your calf's gut with Transformula



Dr Amanda Dunn

New compound in Transformula advances its role in calf gut development.

A compound known to play a major role in establishing a calf's immune system and encouraging gut microbiota is now included in Transformula transition milk replacer.

Transformula, developed by Bonanza Calf Nutrition, is designed to provide young calves with important nutrition in the feeding gap between colostrum and whole milk.

Oligosaccharides have recently been introduced into the formulation, in addition to existing pasteurised and low heat-treated protein ingredients and short chain fatty acids, to ensure the calf can utilise the energy and protein in this transition milk replacer.

"Oligosaccharides are a great source of nutrition for vulnerable newborn calves and play a key role in the gut development of the young calf," says Dr Amanda Dunn, of Bonanza Calf Nutrition.

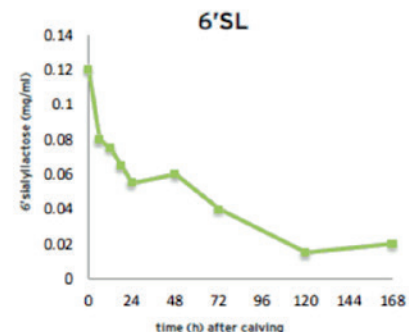
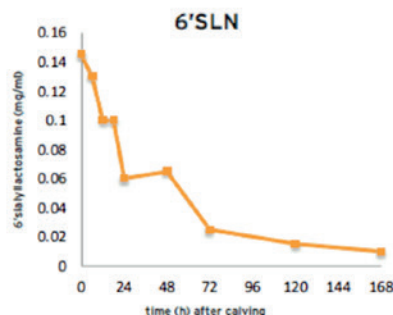
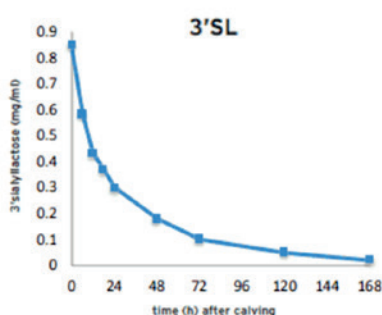
"They act as a prebiotic for beneficial bacteria and aid in the prevention of pathogens binding to the lining of the calf's gut - these often present themselves as scour in the young calf."

A calf's gut is very porous at birth, which allow colostrum antibodies to be absorbed whole; it is populated by microbes even before the calf is born.

Feeding good quality colostrum helps these beneficial microbes to multiply and grow after the calf is born and this feature may be as important as Immunoglobulin (IgG) absorption.

The calf is very limited in what it can digest in the days after birth therefore providing the wrong feed at this stage limits gut development, gut closure, energy intake and the ability of the animal to fight infection.

Effect of time post calving on oligosaccharide levels in bovine milk



Transition milk is produced by the cow and its function is to transition the calf's digestive system or gut into the main sites of digestion and immunity for the young calf.

Bonanza Calf Nutrition has delivered the benefits of transition milk through Transformula.

The incorporation of oligosaccharides is the next step in its development of the milk replacer.

Studies have shown how specific bovine oligosaccharides can block the binding of enterotoxigenic E. coli and are effective against rotavirus, says Dr Dunn.

"The inclusion of oligosaccharides in Transformula will play a major role in the establishment of the immune system of the young calf and have a positive effect on the calf's gut microbiota," she says.

Recent research has demonstrated that second calvers have increased levels of oligosaccharides in their milk compared to heifers so it may be especially beneficial to offer first parity (heifer)-born calves Transformula to provide the benefits of transition milk.

"Instead of feeding one or two feeds of colostrum and then introducing whole milk or standard milk replacer, it would be very valuable to fill that gap with transition milk for at least one week post-colostrum feeding, to reap these benefits and offer increased gut protection for the newborn calf," Dr Dunn advises.



Sunflower oil to replace palm oil in Shine Twice-a-day calf milk replacers

As a UK calf nutrition company, Bonanza Calf Nutrition aims to continually improve what they add to their base of low heat skim milk and buttermilk.

From December, soya and palm oil in Shine Twice-a-day will be replaced by European-grown sunflower oil.

Tom Warren, of Bonanza Calf Nutrition, says there are a number of reasons for the move, including a desire to widen the ingredient base used in milk replacer manufacture and to use more European-grown plant oils.

“The use of sunflower will enhance the ease of mixing and make the product ideal for all systems especially cold mixing,” he says.

“Trial work has shown performance and health to be similar compared with the current fat blend.”

The new Shine formula will also satisfy the requirement of some supermarket buyers.

“At Bonanza we have always strived to use local and wholesome ingredients in our milk replacers and we work with the UK’s largest dairy ingredients business to source our ingredients,” Mr Warren adds.

The company’s formulas are based on low heat skim milk powder and buttermilk and this is fixed regardless of powder prices.



For help with any aspect of your calf rearing give one of our calf advisors a call.

Our office number is **0808 1781017**

Jeremy Kivell joins Bonanza.

Devon born Jeremy Kivell has joined Bonanza

Jeremy grew up on a dairy farm just outside of Bude in Cornwall. Upon returning from a year in Australia, he decided to enter the Agri-supply sector as opposed to working on the farm and milking cows himself.



He very quickly progressed to the Management team within Mole Valley Farmers in the late 1990s and then, after 10 years in Scotland in the hospitality sector, returned to the South West in 2012 where he re-joined Mole Valley as a Business Development Manager only this time ‘on farm’ helping farmers with all aspects of farming procurement.

Since 2018, Jeremy has been Sales Manager (South West Area) for Kilco Dairy Hygiene supporting distributors of their chemicals and helping farmers with any issues that might impact getting the best returns on milk.

Jeremy has a passion for farming and says he would not want to be involved in any other industry. He said “I am looking forward to joining Bonanza and helping farmers with calf rearing. Bonanza are a highly-respected provider of milk powders and one of their products - ‘Transformer’ developed around 4 years ago - is massively reducing the incidences of Crypto, Cocci, Rotavirus & Ecoli. Used together with the ‘Shine’ range of powders, it means your calf rearing milk powder requirements are sorted!”

Jeremy used to play a lot of rugby. These days, however, he says “it’s all from the side-lines”! He still likes to watch Exeter Chiefs as often as time allows and he also runs the line for a local football team, for whom one of his sons plays.

Jeremy can be contacted on: **07392 080719**
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