# SPRING CALVING OUTLOOK

January 2025

## SUPPORTING THE SPRING CALVING DAIRY COW

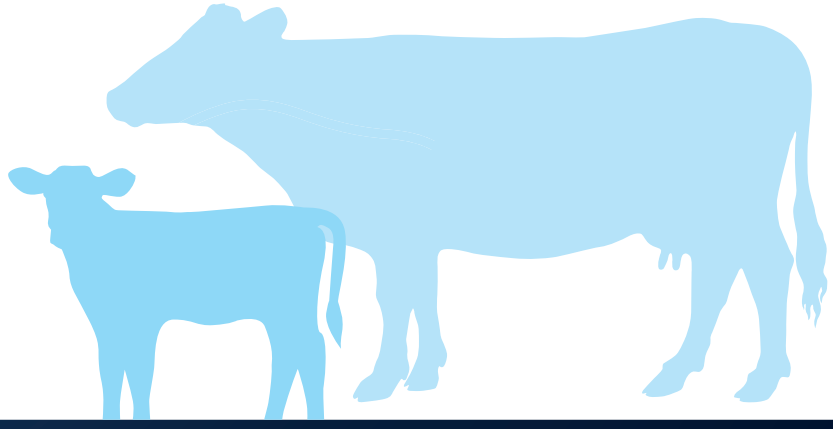
How a dairy cow transitions significantly impacts her entire lactation. If managed correctly, we have the opportunity to set the cow up for a healthy and productive lactation, which maximises herd profitability. The transition period refers to the three weeks before, and three weeks after calving.

Ensuring the correct energy balance both before and after calving has a major influence on transition success. With the recent withdrawal of a key product from the market, it is vital to explore opportunities and alternative strategies to maintain good liver function and energy conversion in transition cows. Feeding rumen protected choline (RPC) is the best way to support the cow's health and performance around calving.

It is important to promote good energy balance and liver function pre-calving, as this has a huge impact on the cow's ability to meet energy demands post-calving. This is especially true when cows are turned out to grass in the spring. At turnout, there is a huge dietary change as cows move from a silage-based diet to a grass-based diet. The rumen populations must shift in order to digest a different composition of diet. A grass-based diet will move much more quickly through the rumen and as it is lower in dry matter, it can be difficult for the cow to reach enough intake to meet energy demands. Therefore, we must promote good rumen function to support intakes and minimise the risk of falling milk solids, while good liver function is required for as much conversion of energy as possible.

## WHAT IS CHOLINE?

Choline is an essential nutrient (similar to a B vitamin) which has important functions in helping the liver manage fat accumulation during transition. It also has a role in keeping the milk-producing cells in the udder healthy. Therefore, the key benefits of feeding choline are reduced likelihood of ketosis and fatty liver around calving, and improved milk production at peak and throughout lactation.



# WHAT DOES CHOLINE DO?

Choline has a crucial function in converting liver fat to very low-density lipoproteins (VLDLs). These VLDLs are transported to the udder and used as an energy source for milk and milk fat production.

Meeting the cow's choline demand before calving is crucial and issues around transition have been associated with choline deficiency. A lactating dairy cow has a choline requirement of 1g/day, and this is generally met by healthy cows as they can produce their own choline. However, during the transition period, this requirement is significantly increased to 15g/day. The cow's own choline production cannot meet this demand, which leaves her with a 14g/day deficit. Therefore, it is vital that we provide RPC as part of the transition cow's diet.

ReaShure-XC is a source of RPC. As it is fat-encapsulated, this means it is not broken down by rumen microbes but passes through the rumen and is absorbed more efficiently in the small intestine.

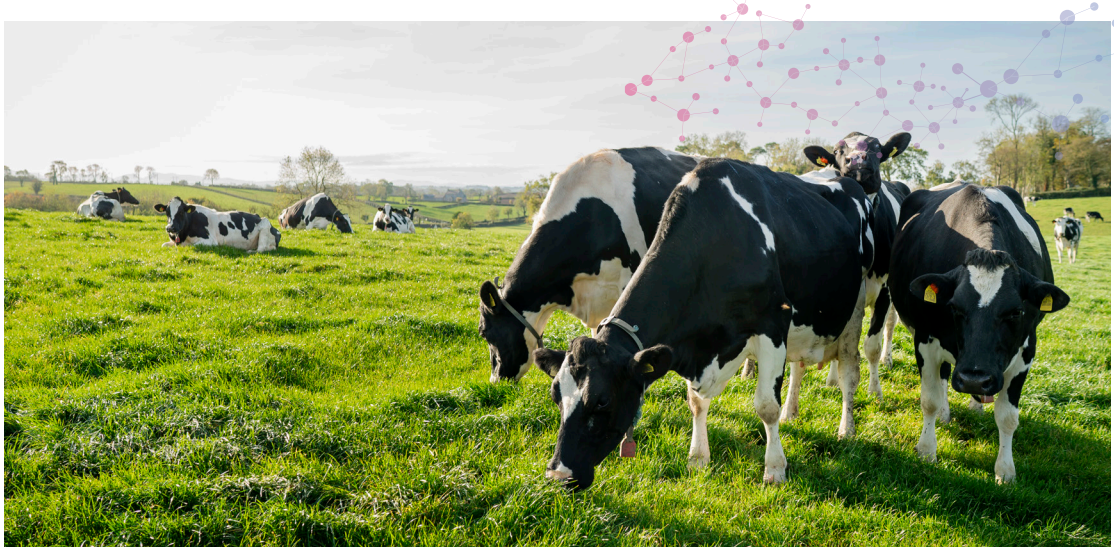
Research has shown that feeding RPC during the transition period reduces negative energy balance, improves liver health, reduces clinical and sub-clinical ketosis and milk fever, improves dry matter intake, and subsequently increases milk yield.

With varying farm practices and grouping systems, the practicality of feeding ReaShure XC three weeks before and three weeks after calving is often questioned. While this is the optimal feeding procedure, the majority of benefits are attributed to meeting the cow's choline demands before calving, therefore it is still beneficial if fed only during the dry period.

Herds that do not have fresh groups will see a benefit from feeding ReaShure XC before calving, ensuring that there is an adequate supply of choline to the cow during the period of greatest choline demand. Niesen et al., (2018) illustrated an increase in yield of 1.5 litres/day when feeding RPC during the three weeks before calving.

Supplementation should be continued in a fresh cow group where possible and feeding RPC both before and after calving has been shown to increase milk yield by 2.5 litres/day (Zenobi et al., 2018).

The optimum feeding procedure for ReaShure XC is a feeding rate of 30g/h/d (which supplies 15g of choline to the liver) for a duration of 3 weeks before and 3 weeks after calving. This will give maximum health and performance benefits ensuring that the cow's choline requirement is met for the entirety of the transition period (Zenobi et al., 2018). To summarise, **feeding Reashure XC for 3 weeks after calving is good, for 3 weeks before calving is better and feeding for 3 weeks both before and after calving is best.**



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## The calf can also benefit from feeding choline pre-calving

During the transition period, significant nutritional and metabolic changes can have a profound effect on the health and development of calves. Understanding the impacts of this time is essential for ensuring health and productivity of the existing milking cows, and also for the future generations of the herd.

The early life of a calf is crucial for its long-term growth and development. Factors such as colostrum intake, nutrition, and disease exposure during the transition period can impact health, gut development, and growth rates. Calves that do not receive adequate nutrition or are exposed to diseases during the transition period experience reduced growth rates and developmental delays. This can dramatically affect future productivity and overall well-being as an adult cow.

Ensuring the transition diet is optimally formulated to supply the appropriate balance of nutrients is crucial to both the cow and the unborn calf. Supplying the correct levels of choline is very important to the transitioning dairy cow as it plays a key role in supporting good liver function and helping meet energy demands. It has been shown to be highly beneficial to overall cow health and performance.

**Recent research from the University of Florida has discovered a link between supplementing RPC in the transition diet and calf health and performance. Meeting the choline demands of the cow during late pregnancy had a positive effect on growth and survivability of heifer calves during the first four weeks of life.**

When calves are born, they are sterile, which means they have no immune system. Therefore, the passive transfer of immunity through colostrum is of vital importance. Calves with adequate passive immunity were found to be healthier and had reduced mortality rates. The research showed that cows receiving RPC before calving produced higher quality colostrum. This is of benefit to the calf as high-quality colostrum develops a more robust immune system, helping the calf to deal with disease challenges.

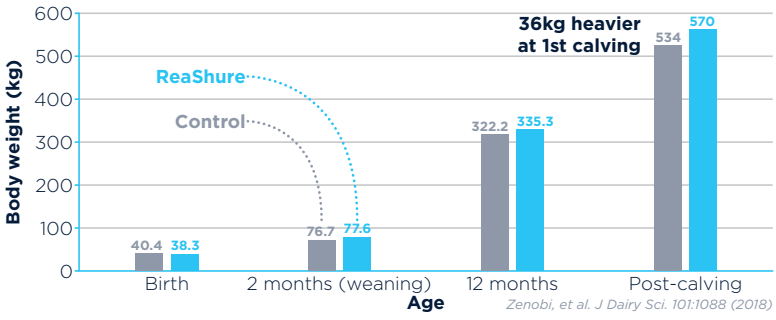
Dairy calves are at high risk of health challenges pre-weaning, with scour and respiratory disease being the most common. It is crucial to protect calf health and wellbeing and importantly, to protect the future productivity and profitability of the herd.

The research further explored the effects on the calf's immune system. It was found heifer calves that received colostrum from cows fed RPC before calving had increased absorption of immunoglobulins and higher indicators of passive immunity in their blood.

It was also noted that calves from dams receiving RPC in the transition diet had less fever (31.3%) compared to calves from cows with no RPC supplementation (57.7%) during the first 21 days of life.

The trials then followed calf growth rates and it was found that calf birthweight was lower in cows receiving RPC pre-calving (improved calving ease was noted). However, RPC calves had higher dry matter intakes (combination of milk replacer and starter), and higher growth rates. Figure 1 shows how the growth rate benefit was carried throughout the rearing period and RPC calves were 36kg heavier at first calving.

**Figure 1:** Effect of feeding ReaShure-XC to dams on growth rates of their heifer calves




*Zenobi, et al. J Dairy Sci. 101:1088 (2018)*

**It would be worthwhile considering the addition of rumen-protected choline to your transition diet this winter. Transition cows are the most important group in the herd, but don't underestimate the impact of transition nutrition and management on the health and performance of calves, your future herd.**