

The Best Feed Additive to promote dairy calf health and growth

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Summary

An additive for calf feeds should have the following attributes

- Increase dry matter intake.
- Promote rumen development.
- Enhance the proportion of “good” bacteria within the rumen.
- Generate more VFA (energy) production.
- Improve production.
- Ensure healthier calves.

Our experience is with the yeast metabolites from Diamond V that can achieve the outcomes above in feeding dairy calves. Let me outline some of the information behind that.

Introduction

The first 4-5 weeks of life for a dairy calf are critical. The calf is born with a sterile rumen which is rapidly populated by bacteria from the calf’s contact with the surrounding environment. Through this time, the calf’s digestive tract undergoes change from a pre-ruminant state, slowly becoming a ruminant.

The nature and rate of rumen development and the increase in rumen microflora within the calf are influenced by the intake of dry matter and the substrates consumed. The primary driver of rumen development is the supply of VFA’s, these being produced by the fermentation of carbohydrates by bacteria. There is little or no absorption or metabolism of VFA in neonatal calves. For calves to be weaned successfully, the rumen needs to be sufficiently developed to allow fermentation of concentrates and forages.

There are additive choices that can help the calf with this adjustment and enhance rumen development, that in turn aide the calf to grow, and become a healthy, productive ruminant. Diamond V has a range of additives that can assist in achieving these outcomes.

Pre-Weaning Rumen development

The epithelial layer within the rumen at birth contains papillae which are small and non-functional. The primary stimulus for the development of papillae in terms of number and size and their ability to absorb and metabolise nutrients are VFA’s. Butyrate is known to provide the greatest stimulation for epithelial layer development, propionate is second in importance and acetate of lesser effect. The intake of starter feed is essential to stimulate papillae and rumen development. Feeding Diamond V products is shown to significantly stimulate rumen development.

There are 3 major contributors to this:

1. Diamond V Feed Additives Increase dry calf starter intake: Studies have shown where Diamond V XPC (in the grain) and SmartCare (in the milk) have been included in diets, starter intake has increased by 13-20%

2. Increased (good) rumen bacteria growth: Studies have also shown that Diamond V fed calves have from 30-60% more productive bacteria, and 70% more fibre digesting bacteria
3. The combined better intake and bacterial growth means more VFA production: Studies have shown that calf programs which include Diamond V feed additives increase total VFA production from 15-37%, meaning more energy for growth

When these points are considered together, the result is improved papillae development in calves. The papillae are longer, thicker, and denser, all of which combine to improve nutrient absorption in the growing calf.

Animal Performance

There have been several studies looking singularly at animal performance from calves fed Diamond V feed additives. The great news is, all of these studies have shown improvement in Average Daily gain (17%), and in those studies that measured frame growth, improved frame height and hip width.



Healthy Rumen Papillae from Calf fed Diamond V

Importantly for those of us in Australasia, this data includes a study completed in NZ with Southern Hemisphere style calf rearing techniques. It showed similar responses to the other trials from around the world.

Animal Health

Potentially the greatest challenge with all calf programs is keeping calves healthy, but this is where Diamond V feed additives truly stand out.

Particularly in the early weeks of life, keeping calves healthy is the key measure of a successful program. A large study with over 500 calves showed a massive health benefit for calves fed Diamond V. The incidence of fever, diarrhoea, and ultimately mortality was reduced by 18%, 3% and 40% respectively. Importantly, this result was also achieved with fewer medicinal interventions, with 37% less anti-inflammatory use, 4% less anti-diarrhetic use, and 13% less antibiotics.

Summary

While there are a lot of claims made by a wide range of products, none have the proven research to show the breadth of activity, consistency of animal performance, or the proven health benefits as Diamond V. These factors we believe make Diamond V the best additive to promote calf health and growth.

Dosage

For pre-weaned calves, we recommend 2g/hd/d of Diamond V XPC (or 0.5% inclusion), and 1g/hd/d of SmartCare in the milk or milk replacer.

If you would like to discuss feeding calves or feed additives for calf rearing please do not hesitate to contact me. Hugh.archibald@feedworks.com.au, Ph + 61 412 316 750.

