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Rumen-bypass niacin is developed from active ingredients coated with substances that can resist rumen degradation by multi-layered coating way. The unique production technique guarantees the product can bypass rumen to release in small intestine.



The Essential of Rumen-bypass Niacin Added in Ruminants’ Daily Ration

Niacin is the precursor of Coenzyme I (NAD+) and Coenzyme II (NADP+), both of which act as hydrogen donors in the oxidative energy supply of animals, so it can promote the complete oxidation of fatty acids in the liver, thereby alleviating the negative energy balance of dairy cows and reducing the production of ketone bodies.

Being apart from feed, rumen microorganisms can also synthesize niacin. Earlier researchers generally believed that niacin synthesized by rumen microorganisms can meet the needs of organisms, that is to say, it is no need to add niacin. However, it is found that there is an optimal concentration of niacin in rumen recently. When the concentration is lower than the optimal concentration, niacin needs synthesizing, otherwise, niacin will be degraded by microorganisms. Under physiological conditions, the absorption of niacin is mainly by small intestine. Niacin is detained in rumen, so the absorption of niacin is not in rumen, especially before and after delivery of dairy cows, the body's metabolism is vigorous, and niacin synthesized by microorganisms alone can no longer meet their physiological needs.

Niacin added directly in daily ration cannot reach the effects. Some studies showed that the disappearance rate of niacin in the rumen is 98.5%. When niacin is directly added to the diet, niacin will be converted into 6-hydroxynicotinic acid by microorganisms in the rumen, then

decomposed into 2,5-dihydroxypyridine, and then further decomposed into maleamic acid, and then degraded into cis-butenedioic acid, finally degraded into pyruvic acid, which cannot achieve the effects of supplementing niacin. Therefore, rumen-bypass niacin should be added into high-yield dairy cows' diets in order to guarantee the healthy bodies and high production performance.

【Guaranteed Value】

Niacin≥48.0%, moisture content≤10.0%

【Characteristics 】

Uniform particles, complete coating, good fluidity, and easy to mix.

The rumen-bypass rate ≥85%, and the small intestine release rate≥90%.

【Efficacy】

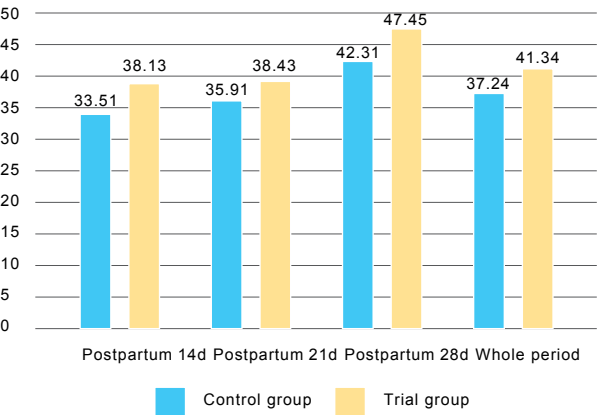
1. While reducing blood β-hydroxybutyric acid (BHBA), non-esterified fatty acids, and triglycerides, it also increases the content of serum glucose by about 9.50%, effectively preventing the occurrence of ketosis.

2. It can increase milk production of dairy cows in high-heat environment and relieve heat stress of dairy cows to reduce the chance of niacin deficiency in newborn calves.

【Applied Effects】

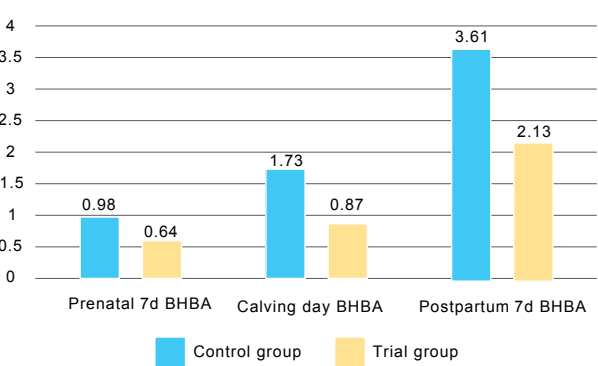
According to the expected date of delivery, 40 healthy perinatal dairy cows were selected for this trial, the distance from delivery was (21±5) days, 2 to 3 of parities, and similar body conditions. They were randomly divided into trial group and control group, each group had 20 dairy cows. Both groups were fed with the same total mixed ration during trial period, and 12g/(each·d) PerC VB3 were added in trial group, without PerC VB3 added in control group.

1.The effect of PerC VB3 on milk production (Kg/each/d)



As can be seen from the above figure, PerC VB3 fed during the perinatal period can increase the milk production of dairy cows after delivery. On the postpartum 14d, 21d, 28d, the milk production of the trial group was 13.8%, 7.0%, 12.1% higher than that of the control group, respectively. From the average level of the whole period, the milk production of the trial group was 4.07kg/( head·d)) higher than that of the control group, and the increase rate is up to 10.9%. PerC VB3 can increase the milk production of dairy cows after delivery.

2.The effect of PerC VB3 on blood ketones (mmol/L)



It can be seen from the above figure, as calving approaches, the serum β-hydroxybutyric acid (BHBA) concentration of dairy cows gradually increases and reaches a maximum value on the 7th day after delivery, indicating that the body of dairy cows has mobilized fat after delivery. There was no significant difference in BHBA levels between trial group and control group in the prenatal. On the day of calving, the BHBA level of control group increased significantly compared with 7 days before delivery, and it was 0.86mmol/L higher than that of trial group. On the 7th day after delivery, the BHBA level of both groups reached the maximum, and the control group was significantly higher than the trial group by 1.48mmol/L. PerC VB3 has obvious effects on relieving negative energy balance, regulating fat metabolism, and reducing the incidence of ketosis.

【Suggested Usage & Dosage 】

1. In the dairy cow's diet, the amount added in the early lactation period is 10-20g/each/day; the amount added in the mid-lactation period is 6-10g/each/day; the amount added in the late lactation period is 5-8g/each/day;

2.1-2g/each/day added in the sheep diet.

- 2. It is stored in a ventilated, cool and dry place.
- 3. This product is used as soon as possible after unpacking, the remaining parts need to tie up and keep in dark place.

【Packaging】

This product is packed in bags. The net content of each bag is 25kg. Please refer to the package label for details.

【Note】

1. In order to ensure uniformity in the feed, the use of this product need to be premixed firstly, and then gradually added to the follow-up feed.

【Shelf Life】

Under the condition of original package, the shelf life is 12 months.