Double the effect with compound minerals

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More stringent legislation from Brussels regarding the use of minerals in animal feeds calls for a product with high effectiveness. Intra Mineral, from Dutch company Intracare, is just such a product. The combination of essential trace elements and essential amino acids makes for extremely effective minerals. Thanks to the full absorption into the body, there is a minimum of mineral emission, thereby meeting the more stringent laws from Brussels.

For decades copper and zinc sulphate have been used in livestock farming, given that these minerals contain one of the most important trace elements for animals. Years of empirical research have demonstrated that copper and zinc are highly effective against all kinds of diseases and that they have a positive effect on growth.

Legislation

The new European legislation on minerals restricts the use of minerals in animal feeds. This carries a potential risk with it, the technical results of the animals whose growth could be adversely affected as a result of feed conversion.

The restriction of minerals in animal feeds arises from the desire to further counteract the emission of minerals into the environment. This has led to two important European directives:

- EU 1334/2003. As of 26th January 2004 animal feeds are not allowed to contain more than 170ppm copper up to 12 weeks (in premix + raw materials). The copper concentration allowed for all other pigs is 25ppm. The maximum zinc content for all ages is 150ppm. Supplement and mineral compounds are, of course, allowed to contain more minerals, but the label must clearly show that the total daily intake does not exceed the norm.
- EU 1831/2003. The new ordinance for livestock feed additives determines that additives may also be added to drinking water and to silage. As a result, drinking water has become a feed material that must meet all animal feeds requirements.

Thus, the maximum amount that may be added can be extracted from the three additive sources; water + feed (raw materials and /or rough fodders) + premix.

Double effect of Intra Mineral

The new double edged challenge is to develop a feed technology that not only leads to lower zinc and copper emission but also meets the requirement with regard to using these minerals. There is a great demand in the market for new compounds that can meet the above requirement.

With Intra Mineral, Intracare has developed a product that, thanks to the combination of essential trace elements and essential amino acids, delivers a doubly effective result.

The production of Intra Mineral takes place under stringent GMP+ conditions, using only pharmaceutical quality raw materials that are permitted by the PDV.

The amino acids and minerals are chelated through a technique that has been especially developed for this purpose. A strong binding is created

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between the copper or zinc ion and the amino acid.

This chelating technique results in better copper or zinc availability and absorption in the gastrointestinal system.

Thus, a smaller dose is required in comparison with traditional copper sulphate or zinc sulphate.

Traditional copper and zinc sulphates tend to bind the metal ion in the gastric system with other anions, risking the chance of crystallisation.

Crystallised salts with poor solubility will strongly reduce the mineral's availability in the intestinal system. As a result, the largest portion of the administered mineral will remain unused in the manure, exceeding the legal manure norms.

The chelating agent in Intra Mineral protects copper and zinc ions from crystallisation, allowing the animal to absorb the minerals completely. Intracare links amino acids to trace elements of zinc and copper in a unique way.

An important requirement for metal chelates is that they should be easily absorbed by the body.

Amino acids are very suitable for this. Amino acids are compounds that animals need by nature and are also recognised as such by the body.

Functionality of metal complexes

As mentioned before, minerals have a positive effect on an animal's state of health.

To that end, copper and zinc minerals are conducive to tissue renewal and also provide protection against infections and the occurrence of stress.

Minerals also have a supportive function during the release of energy and form an inherent part of many enzymes and hormones.

As a rule the feed meets the animal's mineral requirement. However, in a dysfunctional digestive system a deficiency of certain minerals can quickly occur through the insufficient absorption of feed.

Not only the amount of minerals in the feed, but also their availability, is important for the animal.

Mineral deficiency can instigate the development of disease processes. In these situations adding extra minerals can often lead to good results.

Minerals are essential for an animal's functioning.

Not only do they play a role in bone formation and tissue development but they also serve as the immune system activator, among

other things. A few other effects of copper and zinc include:

- Copper is important for the proper working of enzymatic processes.
- Copper is important for eliminating waste products.
- Copper plays a role in the binding of iron in red blood cells.
- Copper is needed for the functioning of the immune system.
- Zinc is important for the functioning of certain digestive enzymes.
- Zinc is required for the correct functioning of hormones.
- Zinc is required for the functioning of white blood cells.

Minerals are, therefore, indispensable nutrients for pigs – zinc and copper being the most important.

Dosage and administration

Minerals are usually administered in dry feed, bearing in mind the maximum allowable dose in the daily diet. Intra Minerals are minerals that are developed for administration in drinking water without causing contamination to the drinking water system.

The advantage of administering the minerals via the animal's drinking water is that even weaker or sick animals can benefit from this. After all, a sick animal will drink but not eat.

Ingredients

Each litre of the liquid Intra Minerals copper and zinc contains 100g copper and zinc elements in the form of chelates (complexes).

The Duo product is a combination of the copper and zinc Intra Minerals.

A dose of 100ml is mixed in per 1000 litre (m^3) drinking water, or 10mg of element per litre water.

Based on a water:feed ratio of 2.5:1, 25ppm copper and zinc are absorbed via the water in proportion to the feed intake.

Conclusion

Mineral chelates in Intra Mineral are absorbed more effectively and are better available for animals. Also, less interrelated antagonism occurs between the minerals and fewer insoluble complexes are formed.

This means that Intra Mineral can be used in a lower dose than minerals in an inorganic form (copper or zinc sulphate) and this means there is less emission in the manure. ■