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Feed material status for ammonium chloride

The Standing Committee on the Food Chain and Animal Health – Section Animal Nutrition discussed the status of ammonium chloride and the results of the deliberation were summarized as follows in the Minutes of its meeting on 18-19/09/2008:

“The Commission representative clarified that ammonium chloride has to be authorised as feed additive for ruminants in advance of its possible use for particular nutritional purposes for these species.”

In the framework of the present discussion on the status of “grey zone” products, FEFAC urges the EU Commission to reconsider its opinion in the light of the following criteria:

1. Ammonium chloride has undoubtedly a nutritional value:

- Ammonium chloride (NH₄Cl) is an ammonium salt containing 65.5% of Cl and 26.2% of N.
- Cl is identified as an essential macromineral (NRC, 2001) and plays an important role in the electrolytic balance (cation-anion) in animals and is now included as a criteria for formulation for feed for certain species. Ammonium chloride is used as a source of chloride and this is documented:
 - In ruminants as a product to correct diets with an inadequate electrolytic balance. (FEDNA, Spain, 2003)
 - In swine, in the optimization of anionic diets (Patience, Prairie, Swine Center, Canada, 2007) or in the electrolytic balance (Lizardo, IRTA, Spain, 2007)
 - In poultry, in layers to improve the quality of the albumen (FEDNA, Spain, 2003) and in the electrolytic balance of broilers (Borges, Poultry Science, 2004)
- Chlorides are clearly identified as an essential constituent of certain dietetic feed, in particular the reduction of the risk of urinary stones as laid down in Directive 2008/38/EC.
- For the last few years, anionic feeding of dairy cows has progressively developed and ammonium chloride is an essential feed material for this kind of feed because it has the best anion/cation ratio among the most common anionic salts (ammonium chloride, ammonium sulphate, calcium sulphate and magnesium sulphate).
- It is important to stress that EMEA classified ammonium chloride in Annex II of Council Regulation (EEC) n° 2377/90 as substance not subject to MRL to protect the safety of the consumer (see EMEA/MRL/394/98).

2. The nutritional value of ammonium chloride is not reduced because of its processing:

Ammonium chloride is a synthetic product with many applications other than feed. Ammonium chloride does not undergo any specific processing that would lead to the concentration of a non nutritional substance in the final product to an extent that the nutritional value cannot be regarded as the purpose of the placing on the feed market.

3. Chlorides are not a trace-element and therefore may not be regarded as a feed additive.

4. Ammonium chloride is unlikely to remain an authorized feed additive:

Although ammonium chloride is presently an authorized feed additive for use in dog and cat feed, the prospect of an application for its re-authorization as feed additive is unlikely at this stage.

5. Ammonium chloride should be classified as feed material by analogy:

Several ammonium salts (ammonium lactate, ammonium sulfate, ammonium acetate) are presently considered for their feed material status, as is sodium chloride). By analogy, ammonium chloride should be regarded as a feed material.

Bibliography:

- The following piece is taken from Nutrient Requirements of Dairy Cattle: Seventh Revised Edition, 2001 Subcommittee on Dairy Cattle Nutrition, Committee on Animal Nutrition, National Research Council ISBN: 0-309-51521-1 (2001). Chlorine is covered under macrominerals along with Calcium, Phosphorus, Sodium, Sulphur, Potassium, Magnesium) on page 121.

Chlorine

The dietary requirements of chlorine for various classes of dairy cattle are the least studied of any of the macromineral electrolyte elements. Nonetheless, its physiologic roles and interrelationships with sodium and potassium are extremely important. Typically, chlorine is provided in the diet in a salt form which is solubilised, releasing the negatively charged chloride ion for absorption. Chloride is functionally important because of its propensity to accept electrons during metabolism.

- Phil Rogers MRCVS, Grange Research Centre, Dunsany, Co. Meath, Ireland 21-Mar-2001

Ammonium chloride is used in animal nutrition for the prevention of urinary calculi (stones) in sheep (especially male ram lambs) and goats. Causes of urinary calculi (stones): Calculus formation has many causes, of which the mineral (P, Mg, Ca, Na) level in feed is only one factor. It involves: reduced water intake, reduced urine output, cold environment, alkaline urine pH and genetic susceptibility. Other possible factors are: urinary infection; mucilaginous material in urine; low roughage intake and saliva secretion; increased P retention; vitamin A deficiency; excess intake of fluoride, oxalate, sodium bicarbonate and silica: Nutritional Solutions: Salt and ammonium chloride & Ca/P ratio in feed.

- Richard V. Machen, Associate Professor and Extension Livestock Specialist Uvalde, Texas

Formation of calculi (stones or crystals) within the urinary tract of sheep and goats is common and primarily a metabolic disease. Ref