



Maximize animal health and performance with optimum vitamin levels

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Importance of vitamin supplementation

Vitamins are the foundation of balanced animal nutrition. They are essential, irreplaceable micronutrients that are required for normal physiological functions including growth, body development and reproduction, as well as animal well-being and general health status. Most vitamins cannot be synthesized by animals and must be obtained by feed; however, feed alone is not enough to ensure the right vitamin status. This is due to multiple factors such as: low and/or variable vitamin levels, limited bioavailability, storage conditions and treatments applied to feedstuffs during feed manufacturing. This can lead to decreased vitamin status in animals. Lower animal performance, poor health and immunity, reduced reproductive success and even mortality are some of the consequences of vitamin deficiency which can have a serious cost impact on

animal production. To overcome this challenge, producers are encouraged to check the vitamin levels of their feed and integrate high-quality vitamin supplements to ensure nutritional requirements are met.

Achieving balanced vitamin levels: a challenge worth facing

When adding vitamins to animal feed, various factors must be taken into consideration for a balanced nutritional approach. This often means that estimating precisely what vitamin levels are required is a complex and challenging process. And, considering the potential consequences of vitamin deficiency or sub-optimal levels, producers are facing increasing pressures to get nutrition levels right.

One important influencing factor is genetics. Modern genetic improvements have enhanced animal growth and performance with a significant impact on vitamin requirements. Due to continuous genetic change in poultry and swine, and because of improved gain:feed ratios, well known researchers and DSM experts estimate that there is likely a 1% increase in overall vitamin needs annually. Feeding animals the same levels of vitamins as in 1995 for example, can therefore result in a reduction of vitamin intake per unit of meat and decreased egg production of up to 33%. Vitamin requirements are also influenced by the interactive effects of each vitamin. Fat soluble vitamins, for instance, must be fed in correct proportions as they compete for intestinal absorption. At the same time, B-group vitamins regulate the intermediary metabolism of protein, fats and carbohydrates and a lack of any one of these vitamins increases the need for one of the others. Other factors influencing vitamin levels include disease, confinement, restricted feeding, vitamin antagonists, air quality and temperature.

Although challenging to achieve, the right vitamin levels are essential and offer many important benefits including optimum animal health, well-being and performance, and better meat quality. For example, many studies have demonstrated the positive impact of vitamin E at supra-nutritional levels in poultry and swine on immune modulation and on meat quality in later stages. Optimizing vitamin levels also makes sense commercially – vitamins represent less than 2% of feed cost or euro cents per animal, yet have a significant influence on growth, health and reproduction. Finding a cost-effective, safe range of vitamin supplementation therefore ensures enhanced animal production and better profit for farmers.

Finding the right balance

Building on its industry-leading expertise, DSM has developed a key tool to support the feed industry in ensuring improved returns and increased profits throughout the value chain. Optimal Vitamin Nutrition (OVN™) is about feeding animals high quality vitamins in the right amounts and ratios appropriate to their life stage and growing conditions. It provides a cost-effective range of vitamin supplementation guidelines that optimize animal health, well-being, performance and the quality and nutritional value of animal-origin foods based on specific factors including environmental conditions, feed quality, the health status of animals and performance objectives.

To begin optimizing vitamin levels today, download our OVN guidelines here.

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