

# LOVIT *GRANULE* BX

Self-dispersing granules with vitamin B-complex, niacin, folic acid, pantothenic acid, biotin, and vitamin K3 for vitalization in phases of increased requirements.

## **Convincing advantages:**

- Facilitates recovery after infections
- Supports normal metabolism
- Rapid dissolution without residues



# LOVIT GRANULE BX

## LOVIT Granule BX – the vitamin booster to prevent deficiencies.

Coccidiosis and other diseases of the gastrointestinal tract lead to reduced absorption of the consumed nutrients via the intestinal epithelia. Furthermore, enteritides change the gut flora, which further restricts nutrient supply. The intestinal bacteria of poultry can produce vitamin B12 and vitamin K themselves, however, both can only be ingested through coprophagia, meaning that the majority of productive poultry is reliant on external supply.<sup>1,2,3</sup>

**The knowledge behind LOVIT Granule BX.** Growth and sustained performance require a sufficient supply of the organism with vitamins.

**Vitamin B1** (thiamine) is a cofactor for five key enzymes in glucose, fat, and protein metabolism. Thiamine thus plays an important role in cell division, growth, the function of the heart muscle, and intestinal peristalsis.<sup>3,4,5,6</sup>

**Vitamin B6** (pyridoxine) is a cofactor with more than 100 enzymes in amino acid, glycogen and fat metabolism, and is thus a central element in growth processes and in maintaining performance. In the form of pyridoxal phosphate (PLP) it catalyses the synthesis of numerous neurotransmitters. A shortage is reflected in the entire nervous system in the form of seizures, movement disorders and peripheral neuropathy.<sup>3,4,5,6</sup>

**Vitamin B12** (cobalamin) is a component of two coenzymes and is essential for blood formation and growth. Vitamin B12 deficiency often proceeds insidiously, however neurological symptoms, such as unrest or change of behaviour, can quickly appear.<sup>3,4,5,6</sup>

**Niacin** and **vitamin B2** (riboflavin) are involved in vital reactions to generate energy. A deficiency becomes noticeable, particularly in situations of increased energy demand, such as growth or incubation phase, through loss of appetite, poor feed conversion and growth depression. Neurological symptoms, gastrointestinal disorders and skin alterations follow over time. Curled toe paralysis is typical for chickens with a shortage of vitamin B2.<sup>3,4,5,6</sup>

**Folic acid** transfers methyl groups in nucleic acid and amino acid metabolism and is involved in the epigenetic regulation of DNA. Deficiencies can be recognized through growth problems, performance depression, perosis, and macrocytic anaemia.<sup>3,4,6</sup>

**Pantothenic acid** forms the coenzyme A which is indispensable for the body in addition to a further enzyme, both of which are of fundamental significance in fat metabolism. A shortage affects per se all metabolic processes meaning that symptoms can range from growth depression, poor plumage, scab formation, to reduced hatching rate.<sup>3,4,6</sup>

**Vitamin K** is involved as a cofactor in the formation of coagulation factors and bone mineralisation. The body stores only minimal amounts and deficiencies arise quickly, particularly in growing animals.<sup>3,4,6</sup>

**LOVIT Granule BX: vibrant even in critical phases.** The interaction of B vitamins, pantothenic acid, niacin, vitamin K3 and biotin in LOVIT Granule BX is important to maintain an energetic metabolism. The balanced combination of these active ingredients facilitates recovery after infections and prevents deficiencies. Thanks to its unique formulation as effervescent granules, LOVIT Granule BX is easy to use on every agricultural holding.

**Composition per kg:** Effervescent granules with vitamin K3 22,860 mg, vitamin B1 18,280 mg, vitamin B2 38,280 mg, vitamin B6 24,000 mg, vitamin B12 97,140 µg, biotin 194,280 µg, folic acid 4,860 mg, niacinamide 285,700 mg, calcium-D-pantothenate 97,140 mg

**Recommended use:** 175 g per 1,000 l of drinking water or 875 g per 5,000 l of drinking water for a period of 2 - 3 days. Repeat as necessary.

**Standard packaging:** 24 x 175 g bags per box, 24 x 875 g bags per box.

#### References:

- 1 McDowell LR, Ward NE. Optimum vitamin nutrition for poul-try. *Int. Poult. Prod.* 2010;16:27-34.
- 2 Weber GM. Improvement of flock productivity through supply of vitamins for higher laying performance and better egg quality. *World Poult. Sci. J.* 2009;65:443-457.
- 3 Jeroch H, Simon A, Zentek J. *Geflügelernährung*. Ulmer 2012.
- 4 Pape H-C, Adams CA, Busch A, et al. *Futtermittelzusatzstoffe - Technologie und Anwendung*. AgriMedia 2006.
- 5 Brady S, Siegel GJ et al. *Basic Neurochemistry*. Elsevier LTD 2011.
- 6 Biesalski HK. *Vitamine und Minerale*. Thieme 2016.