



ORGANIC-MINERAL FEED MATERIAL FOR MONOGASTRIC ANIMALS WITH A HIGH CONTENT OF HUMIC ACIDS

Reduces brood mortality | Improves and maintains good health | Increases additions and animal production | Improves feed use (conversion) | Reduces animal stress on factory farms

The basic material is Leonardite - a natural substance with a high biological effectivity, that is technologically activated on the total content of humic acids over 65% (m/m), **then adjusted with calcium formate.**

By application of **HUMAC® Natur AFM Monogastric**, besides stabilizing gastrointestinal flora, we also provide minerals and trace elements in a chelated form, in which are then easily used by animal organisms.

Humic acids affect an organism as a growth, digestion and nutrient use stimulator, they improve productivity indicators (intensity of growth, feed conversion, feed effectivity index) and have an important effect on prevention and therapy of illnesses.

By applying **HUMAC® Natur AFM Monogastric** into the feed we are preventing health disorders (mainly diarrhea and other digestive disorders, infectious and non-infectious diseases), ensuring adsorption of toxins (microbial and fungal) and of other toxic compounds, which are then excreted from animal organism with faeces.

Through adjustment of the digestive system pH, we are beneficially affecting the creation of enzymes, vitamins and the activity of other internal organs. We are preventatively avoiding the development of pathogenic microflora (coccidia, clostridia, coliforms, salmonella, etc.).

We are improving the microclimate in the stall by absorbing mainly nitrogenous and other substances in gaseous form, which results in considerably decreasing emissions of harmful gases and odors. This complex effect lowers diseases and mortality rate, promotes health and thus production, which increases profitability of breeding.

Technical parameters	
Humic acids in dry matter	min. 57 %
Other substances in dry matter	
Fulvic acids	min. 5 %
Formates	3.24 %
Calcium (Ca)	5.11 %
Magnesium (Mg)	4 855 mg/kg
Iron (Fe)	18 094 mg/kg
Copper (Cu)	14.25 mg/kg
Zinc (Zn)	35.15 mg/kg
Mangan (Mn)	135 mg/kg
Cobalt (Co)	1.18 mg/kg
Selenium (Se)	1.59 mg/kg
Vanadium (V)	40 mg/kg
Molybdenum (Mo)	2.57 mg/kg
all naturally occurring trace elements in a carboxymethylcellulose complex of organic matter	in µg/kg
Properties	
Particle size	up to 100 µm
Humidity	max. 15%

Optimization of breeding economy

Humic acids stimulate the organism to increased nutrient intake, to excretion of a larger amount of digestive juices and enzymes, promotion of immunity and improvement of the overall health condition. The result is an **accelerated growth, higher production, better immunity and disease resistance.**

The use of **HUMAC® Natur AFM Monogastric** in recommended doses can **replace the use of acidifiers, exporters, mycotoxins, anti-anemia products** (mainly for pigs) and products for improving welfare.



Results achieved in livestock farming

- Increase of daily additions (by 6-8%) and shorter fattening period
- Reduced use of feed per addition's kg (by 4-7%)
- Reduced mortality of brood and grown ups (by 40-50%)
- Increased productivity of laying hen (by app. 4%) is a result of extended laying curve, which reflects their improved health
- Higher carcase yield
- Higher share of poultry breast and tight muscle
- Significantly better sensory properties of carcase meat
- Increased serenity of the herd
- Reduced costs of antibiotics and other medicine
- Significant reduction of stall odor
- Elimination of the possibility of creating microbial resistancy and the presence of residues of foreign substances in livestock products
- Besides higher egg production and better hatchability of laying hen, the weight of eggs slightly increases, while the thickness of eggshell remains unchanged, but its firmness increases.

Method of feeding

HUMAC® Natur AFM Monogastric is admixed to the feed, which can be fed immediately. **The feed material has no withdrawal period.**

Dosage	
Pigs	0.5 % in feed
Poultry	0.4 - 0.7 % in feed
Pets (dogs, cats)	2 - 3 g / day / piece / 0.5 % in feed

In case of diarrhea illnesses we recommend increasing the preventive dosage by 2-3x for a period of 5 - 7 days.

Packaging: **25 kg**

Warranty: **24 months** from the date of manufacture, at observing storage conditions.

Suitable for use in organic farming (dependent on local registrations)



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SIGNIFICANCE OF HUMIC ACIDS AND OTHER SUBSTANCES CONTAINED IN HUMAC[®] NATUR AFM MONOGASTRIC FEED MATERIAL WITHIN ANIMAL NUTRITION

General effects description

- Positively affects the digestive tract and prevents digestive disorders (diarrhea, constipation) and increases appetite
- Keeps the organism in acid-base balance
- Significantly impacts the maintenance of biological homeostasis of animal organisms
- Lowers the production of stress hormones (animal transport, cannibalism, temperature stress)
- Active substances - humic acids - are natural components of animal feed since they are present in drinking water (such as in still waters, which animals are particularly fond of)
- Increases livestock production and profitability
- Improves herd serenity
- Significantly lowers the use of antibiotics and other medicine (use of antibiotics and anticoccidials affects the development of intestinal microflora adversely, with impact on animal digestion and immunity)
- Lowers animal morbidity and mortality

Effects on the digestive system

- Effectively prevents diarrhea, dyspepsia and acute intoxication
- Binds microbial and fungal toxins, e.g. ammonia, PCB, dioxins, heavy metals etc., which are then excreted through faeces
- Maintains an adequate motility of the digestive system
- Keeps pH in an optimal physiological span - effective use of each feed component, creation and maintenance of optimal physiological digestive conditions
- Keeps the organism in acid-base balance (metabolic acidose causes increased degradation of calcium from the bones; The lack resp. degradation of calcium will be reflected on e.g. quality of eggshells and bone strength)
- By stabilization of stomach and intestine contents and by righteous composition of intestinal microflora, it prevents putrid decomposition of intestinal contents - invoked by insufficient enzymatic decomposition of protein
- Positively affects all digestive system functions, improves digestion and resorption of nutrients
- Promotes the uptake and excretion of biogenic amines on GIT level and prevents their absorption by the blood stream
- Improves feed intake for sows after parturition, which results in improved milkiness (better quality and quantity of produced milk) and thus greater weight and health condition of piglets and of weaners

Effects on intestine activity

- By protecting and stabilizing the functional state of intestinal mucosa, it reduces the growth and multiplication of viruses, parasites (coccidia...), pathogenic bacteria - clostridia, coliforms, salmonella etc. and vice versa promotes growth and development of symbiotic, health-benefiting microorganisms
- Has a protective effect on intestinal mucosa, suppresses the formation of inflammation and supports immunity, what makes it an effective prevention against diarrhea diseases of pigs, respiratory system infections, pigs emaciation syndrome, dermatitis syndrome and nephropathy
- By affecting the divalent cations transporter DMT1 (divalent metal transporter 1) it accelerates resorption of divalent cations (Cu^{2+} , Fe^{2+} , Ca^{2+} , Mg^{2+} , Zn^{2+} , Mn^{2+} , Co^{2+}) into the intestinal cell (enterocyte) and then into the blood stream
- Supports resorption of Fe^{2+} into enterocytes (in this form iron also occurs e.g. in plants), thus positively affects the treatment of anemia
- Binds endotoxins and exotoxins - prevents their negative impacts on the digestive tract and organs, and thus positively affects their secretory features

- Supports the activity of digestive enzymes and creation of B group vitamins and vitamin K - intestinal mucosa protection against toxin activity and adherence of pathogenic microorganisms by promotion and correct composition of intestinal microflora
- Stabilizes the digestive tract pH and thus of the organism, blood.
- Supports a stable intestinal environment and stimulates the regulation and creation of pancreatic and intestinal enzymes.
- Stimulates the receptors of the immune system in intestinal villi during protection against pathogens.
- Positively affects all digestive system functions, improves digestion and resorption of nutrients, prevents digestive disorders (diarrhea, constipation) and increases appetite

Effects on reproduction

- Reduces embryonic mortality by stabilizing the transformation of proteins, lowering urea levels and promoting the corpus luteum activity for creation of progesterone and reduction of PGF 2a
- Protects the embryo from toxic effects
- By binding endotoxins and exotoxins it affects the reproductive performance and proper development of the fetus
- Significantly lowers the occurrence of pigs' MMA syndrome
- Increases laying and quality of laying hen hatching eggs
- Improves reproductivity indicators and fertility, reduces mortality and increases the number of healthy new borns

Effects on liver

- Reduces the operational load of the liver, increases the energetic metabolism mainly by activation of cell respiration, and thus also promotes the regeneration of liver tissues. Actively affects liver metabolism and by inactivation of free radicals protects it from damage

Effects on the immune system

- By uptaking toxic substances and stabilizing intestinal mucosa promotes and regulates the activity of the immune system, and thus increases organism immunity by activation of immunocompetent cells and creation of cytokines
- Promotion of the pigs' immune system leads to reduced occurrence of diarrhea and other intestinal diseases. This results in a shorter fattening period with better additions and nutrient conversion
- Promotion of the poultry immune system and stabilizing the digestive system pH significantly prevents the spread of coccidiosis, bacterial enterites and other parasitic and infectious diseases

Effects on zoo-hygiene

- Improves the microclimate in the stall by reducing the content and concentration of emission gasses (by 55%). Emission gasses affect the metabolism mainly of intensively growing animals under fattening at insufficient ventilation. During long term animal stay in an environment with higher concentration of airborne ammonia volume over 0.05% are described as bulk keratoconjunctivitis (inflammation of eye corneas and conjunctivitis) and laryngotracheitis (inflammation of larynx and trachea) with spasm of vocal chords for poultry and pigs. Hydrogen sulfide is toxic mainly for the respiratory system. Extremely, at high concentration of CO_2 suffocation may occur.
- Lowers the production of stress hormones - the animals bear operational stress better - high temperatures, environmental changes, sudden climatic changes, post changes, time consuming transfers
- By stabilizing N in solid and liquid excrements is increasing their use as available sources of N for plant fertilization.
- Improves contentment of stalled livestock

