



ORGANIC-MINERAL ANIMAL FEEDSTOCK FOR HIGHLY PRODUCTIVE DAIRY COWS WITH A HIGH CONTENT OF HUMIC ACIDS AND BUFFERING SUBSTANCES

Stabilization of physiological pH of the rumen | Prevention of other metabolic illnesses
 Stabilization of milk components | Improvement of feed use (conversion) | Lower amount of ammonia, hydrogen sulphide and other emission gasses | Prevention of acidosis and ketosis

HUMAC® Natur AFM Pufer is a natural, organic-mineral animal feedstock with a high content of humic acids (over 40%) **with addition of magnesium oxide - an important buffering substance**. A 100% natural product in a form of a fine powder of black/brownish colour with high biological effectivity.

HUMAC® Natur AFM Pufer keeps the optimal pH of the rumen environment and other parts of the digestive system without the need of other buffers (at a balanced feed dosage).

Positively affects the basic life functions of each organ and of the entire organism. Its buffering capacity maintains an acid-based balance of the organism and has a significant impact on maintaining biological homeostasis of animal organisms. Acts as prevention of metabolic acidosis and alkalosis, and has a protective effect against intestinal mucosa, thus provides the animal's overall health condition. It has an impact on the creation of elusive fatty acids (propionic, acetic and butyric acid), and therefore affects the content and amount of the produced milk.

By applying **HUMAC® Natur AFM Pufer** feed material into the feed of dairy cows, besides beneficially impacting the pH levels of their digestive system, it also prevents the absorption of heavy metals, foreign substances, fungal and bacterial toxins and other compounds from the digestive apparatus poisonous for the organism, which are subsequently excreted from the animal organism.

By applying **HUMAC® Natur AFM Pufer** feed material to compound feed we beneficially affect the use of nutrients from the feed ration, and thus improving feed conversion and the overall economy of livestock farming.

Simultaneously we are supplying animals with minerals and trace elements in a chelated form, which are then easily useable by animal organism. We are also lowering emissions of harmful (greenhouse) gasses.



Results achieved with productive dairy cows

- increased milk production (by 1 – 1.5 litres)
- higher values of fat and protein in milk at simultaneous improvement of feed utilization
- reduced gynaecological problems, hooves and udder illnesses, and reduction of mastitis
- stabilization of physiological pH of the rumen
- a significant reduction of smell of excrements and urine (NH₃ emissions reduced by 64%)
- reduced occurrence of respiratory problems
- a substantial reduction of diarrhea
- lowered expenses on antibiotics and other medicine

Application method

HUMAC® Natur AFM Pufer is added to compound feed in small quantities for highly productive dairy cows during the entire lactation period.

HUMAC® Natur AFM Pufer is admixed to the feed, that then may be fed directly. **The feed material has no protection period.**

Dosage	
Productive dairy cows during the lactation period until the phase of standing on dry	150 – 200 g / day/piece

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

When applying the recommended quantity besides a balanced feed ration, it optimizes the physiological pH of the organism, **without the need for other buffering agents.**

Technical parameters	
Humic acids in dry matter	min. 40 %
Other substances in dry matter	
Fulvic acids	min. 5 %
MgO ₂	26.4 %
CaO	2.64 %
Fe ₂ O ₃	2.14 %
Calcium (Ca)	28 185 mg/kg
Magnesium (Mg)	3 400 mg/kg
Iron (Fe)	12 697 mg/kg
Copper (Cu)	10 mg/kg
Zinc (Zn)	27 mg/kg
Mangan (Mn)	95 mg/kg
Cobalt (Co)	0.83 mg/kg
Selenium (Se)	1.11 mg/kg
Vanadium (V)	28 mg/kg
Molybdenum (Mo)	1.80 mg/kg
all naturally occurring trace elements in a carboxymethylcellulose complex of organic matter	in µg/kg
Properties	
Particle size	up to 200 µm
Humidity	max. 15%

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 IN HUMAC® NATUR AFM PUFER FEED MATERIAL WITHIN ANIMAL NUTRITION

General effects description

- Stabilizes the pH of the rumen environment with its buffering effects and by absorption captures undesirable metabolites and toxic substances and eliminates them in the digestive system.
- Inhibits the formation of inflammation and supports immunity.
- Maintains an optimal physiological pH in the organism without the need of other buffering agents (at a balanced feed ration).
- Active substances - humic acids - are a natural component of animal feed. They are present in drinking water (such as in still waters, which animals are particularly fond of).
- Very positively affects the basic life functions of each organ and of the entire organism.
- Its buffering capacity keeps the organism in acid-base balance.
- Significantly impacts the maintenance of biological homeostasis of animal organisms.
- Effective prevention of rumen metabolic acidosis and alkalosis.
- Protects from intestinal mucosa - healthy intestines ensures healthy animals.
- Its contents and effects have antiphlogistic, absorptive, antitoxic and antibacterial features.
- Improves livestock production and profitability.
- Positively impacts the utilization of nutrients from the feed ration, and thus improves feed conversion.
- Improves herd serenity.
- Significantly lowers the use of antibiotics and other medicine.
- Binds microbial and fungal toxins, e.g. ammonia, PCB, dioxins, heavy metals etc., which are then excreted through faeces.
- Lowers animal morbidity and mortality.

Effects on the digestive system

- Effectively prevents diarrhea, dyspepsia and acute intoxication.
- 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.
- Reduces biosynthesis, resp. encourages the degradation of biogenic amines - histamine.

Effects on rumen function

- Positively affects the structure and development of microorganisms.
- Increases the level of rumen fermentation and nutrient utilization.
- Impacts the creation of elusive EFA (propionic, acetic and butyric acids) - quantity and composition of milk.
- Reduces the overproduction of NH_3 - toxic effect on the organism, mainly on liver.
- Significantly contributes to natural degradation of harmful substances and toxins (mycotoxins) within the rumen fermentation.

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 etc.
- Promotes the uptake and excretion of biogenic amines on a GIT level and prevents their absorption into the blood stream.
- Stabilizes the digestive tract pH and thus of the organism, blood.

- By adjusting the GIT environment it inhibits the growth of pathogens and promotes the growth and development of symbiotic, health-benefiting microorganisms.
- Binds endotoxins and exotoxins - prevents their negative impacts on the digestive tract and organs, and thus positively affects their secretory features.
- Impacts the activity and composition of intestinal and rumen microflora in favor of symbiotic microorganisms.
- 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, increased appetite.

Effects on reproduction

- Through regulation of serum urea levels positively affects dairy cows fertility, hinders toxic effect of urea on ovum and sperm after insemination.
- 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, mainly until the 12th week, until formation of placenta.
- By binding endotoxins and exotoxins it affects the reproductive performance and proper development of the fetus.

Effects on the liver

- Reduces the operational load of the liver at conversion of ammonia to urea, by its absorption on rumen level, mainly during increased absorption of ammonia and thus stabilizing the energetic metabolism and regeneration of liver tissues.
- Positively impacts regenerative skills of liver tissues and actively affects liver metabolism.
- Affects liver functions and partially protects it from diseases and disorders.

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.
- Through catalyzation processes interferes with metabolism of protein and carbohydrate microbes, which leads to inhibition of pathogenic microorganisms.
- Recovers electrolytic balance of damaged cells.

Effects on zoo-hygiene

- Improves contentment of stalled livestock.
- Improves the microclimate in the stall by reducing the content and concentration of emission gases (by 55%).
- 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.

