

Glycine feed chelates

Glystar

chelates

Glystar 1:1 | Glystar Forte 2:1 Zn | Mn | Cu | Fe | Ca | Mg

ARKOP

We enhance nature
www.arkop.pl

Feed chelates are microelement organic compounds effectively supplementing deficiency of elements, ensuring correct development of the organism and improving animal health.

Glystar Zn, Glystar Mn, Glystar Cu, Glystar Fe

- Fully chelated microelements
- Highest bioavailability
- Perfect mixability
- Stability over a broad range of pH
- Proprietary modern technology
- High quality confirmed by global laboratories.

Effectiveness

Glystar and **Glystar Forte** chelates are absorbed by the organism in the way typical of amino acids (glycine). This largely expedites and facilitates assimilation of the microelements supplied and supports their delivery to the place where they are needed most. Glycine is an amino acid with the highest bioavailability.

Vitamin protection

In **Glystar** and **Glystar Forte** chelates the mineral particles have been neutralized thanks to which they do not cause deactivation of vitamin C, E and B group vitamins. Additionally, as a result of bonding these particles to glycine, the antagonisms between minerals added in the form of Glystar and Glystar Forte chelates disappear.

Ecology

Increased utilization of microelements reduces their excretion by animals as a result of which application of **Glystar** and **Glystar Forte** chelates has significant positive impact on the natural environment.

High availability

Glystar and **Glystar Forte** chelates are characterized by nearly 100% availability which ensures that the whole dose of the microelement supplied is effectively utilized.

The above features make it possible to reduce the dose of the microelement, simultaneously increasing its uptake by the animal's organism and thus significantly improving production results.

Consequences of deficiencies in animal organism

Zinc (Zn) deficiency – parakeratosis, mat hair, skin diseases, somatic cells in milk, hoof diseases, ovary atrophies leading to difficulties with impregnation and disorders of the ovulation cycles, leading to higher incidence of infectious diseases.

Manganese (Mn) deficiency – poor growth of young animals, poor immunological resistance, silent heats, miscarriages, fetus mummification, low mass of newborns, perosis – deformation of the Achilles tendon among poultry, low conformation, deformation of long bones among poultry. Hatch eggs – embryo development disorders. Changes in the formation of the skull and bones among poultry.

Copper (Cu) deficiency – limited hemoglobin synthesis, poor growth, death of embryos, spermatogenesis disorders, poor bone formation, skin depigmentation, weak formation of connective tissue (tendons).

Iron (Fe) deficiency – anemia among piglets and calves, decreased immunological resistance, decreased protection of tissues against free liberals, disorders of protein digestion with participation of pancreas enzymes.

Glystar | Glystar forte

chelates

Item	Glystar® Zn	Glystar® Mn	Glystar® Cu	Glystar® Fe
EU registration no.	E6	E5	E4	E1
Element	Zn–25%	Mn–22%	Cu–24%	Fe–18%
Glycine	29%	30%	29%	25%

Item	Glystar forte® Zn	Glystar forte® Mn	Glystar forte® Cu	Glystar forte® Fe
EU registration no.	E6	E5	E4	E1
Element	Zn–16%	Mn–16%	Cu–16%	Fe–16%
Glycine	36%	43%	37%	42%

And also:
Glystar Ca – feed material, registration number 11.1.11, Ca 20%
Glystar Mg – feed material, registration number 11.2.10, Mg 10%
Feed chelates are organic microelement compounds supplementing element deficiencies.

Effectiveness of Glystar and Glystar Forte chelates

Cattle

- Lower susceptibility to infections
- Reduced number of somatic cells in milk
- Better skin and hair condition
- Increased hoof hardness and elasticity
- Shorter calving intervals
- Increased fertility
- Regulated cation-anion balance in the rumen
- Reduced metabolic diseases

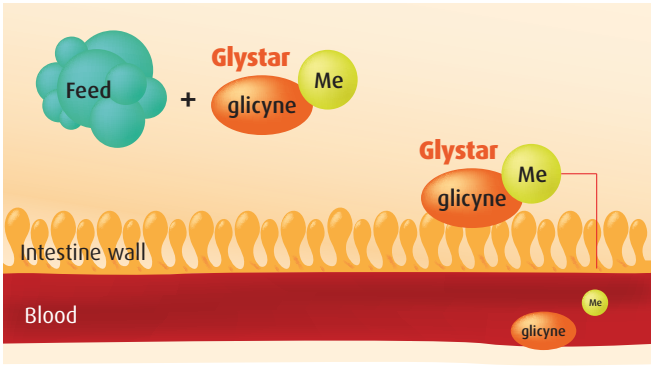
Pigs

- Decreased piglet mortality
- Lower susceptibility to infections and diseases
- Increased bone density and stability
- Improved meat quality
- Lower susceptibility to stress
- Limited cannibalism
- Increased sow fecundity and fertility

Poultry

- Improved egg laying rates
- Lower broiler death rates
- Harder egg shells
- Increased fertility
- Lower susceptibility to infections and diseases
- Reduced susceptibility to stress and cannibalism

How Glystar chelates are absorbed



Glycine – is an amino acid that is the easiest to absorb; it is a building block in the synthesis of erythrocytes, glucose and ceratine.

Glystar and **Glystar Forte** chelates easily permeate the intestine wall thanks to which they are efficiently utilized.

ARKOP

We have been building our experience in the animal nutrition industry since 1992. Our goal is to manufacture feed additives making it possible to derive the very best nature has to offer... For this reason, our extensive product range entails the latest developments in biotechnology, in particular top grade chelates (chelation level confirmed by authorized laboratories).

As a result of our close long-term cooperation with scientific institutes and universities, we have manufactured proven and effective products. We constantly monitor our production process and incorporate the requisite modifications in striving to continue improving our offer and aligning it to meet customer needs and expectations.

We apply and constantly develop our integrated food quality and safety management system **ISO 22000 (HACCP)** and **ISO 9001**. As a confirmation of adherence to the most stringent requirements in this area, we have obtained the integrated management system certificate – **PN-EN ISO 9001:2009** and **HACCP – PN-EN ISO 22000-2006**. We also have the European quality system certificate for feed additives and premixes **FAMI-QS**.

Caring for the right quality of our feed products, we have joined European producer organizations, TREAC and EMFEMA, thanks to which we keep track of prevailing requirements regarding feed additives and adapt our production to satisfy them. Consequently, we can ensure that application of our feed additives is safe for the health of animals and brings great animal rearing results. Currently we work with customers from across the world.

FAMIQS

PCBC PN-EN ISO 9001:2009 PN-EN ISO 22000:2006

IQNet CERTIFIED MANAGEMENT SYSTEM

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