



YARROWIA ANIMAL<sup>®</sup>

equinox

# unique for horses

yeast formula

supports immunity | increases stamina | improves digestion

Currently available yeast-based products rely mainly on sugar-processing *Saccharomyces cerevisiae* yeast. *Yarrowia lipolytica* uses fat as sources of carbon and energy, hence guaranteeing a higher content of valuable, bioavailable nutrients.



Among nutrients of a particularly high value provided by *Yarrowia lipolytica* yeast in the **Yarrowia Equinox** formula are:

- a full range of exogenous amino acids
- bioactive selenium in valuable organic complexes with sulphuric amino acids: selenomethionine and selenocysteine
- essential microelements, with particularly high content of zinc, manganese and cobalt
- macroelements that regulate electrolyte balance: calcium, sodium, potassium and chloride
- unsaturated fatty acids, including linoleic acid with its valuable omega-3 bonds
- vitamin B complex
- cytrulline maleate, alpha ketoglutarate and kynurenic acid

In collaboration with The Natural Science University in Wroclaw, we have performed a research on the efficacy of supplementation with *Yarrowia lipolytica* in nutrition of farm and sport horses. Using advanced analytical methods we have evaluated differences in morphology and biochemical parameters of blood. We also analyzed horses' hair using electron scanning microscope. Results obtained for the experimental group compared to a control were encouraging:

- Blood cell counts improved, and,
- Morphological evaluation of hair showed a significant hair core to sheath ratio improvement, reduction of superficial corneous husk changes and absence of the hair axis twist in the perifollicular area.

Additionally, horses receiving *Y. lipolytica* supplements were in excellent condition, eager to work, and had a significantly lower level of muscular acidosis after exercise.

#### COMPOSITION

*Yarrowia lipolytica* yeast, calcium carbonate, dried apples and dried carrots

#### NUTRITIONAL ANALYSIS

Raw protein: ..... 35 - 42 %  
Raw fat: ..... 1,5 - 3 %  
Raw fiber : ..... 1,1 - 1,5 %  
Dry weight: ..... min. 95 %  
Moisture: ..... 3 - 5 %

#### MACROELEMENTS

Calcium: ..... 45,8 g/kg  
Magnesium: ..... 1,17 g/kg  
Phosphorus: ..... 16,1 g/kg  
Sodium: ..... 24,2 g/kg

#### MICROELEMENTS

Iron: ..... 70,1 mg/kg  
Copper: ..... 1,1 mg/kg  
Manganese: ..... 9,32 mg/kg  
Zinc: ..... 67,4 mg/kg  
Iodine: ..... 0,90 g/kg  
Selenium: ..... 50 mg/kg  
(incl. selenomethionine and selenocysteine)

#### VITAMINS\*

Vitamin E: ..... 17,8 mg/kg  
Vitamin B2: ..... 7,55 mg/kg  
Vitamin B9: ..... 1250 µg/kg  
Vitamin B12: ..... 36,5 µg/kg  
Niacin: ..... 215 mg/kg

#### AMINO ACIDS\*

Lysine: ..... 18,7 g/kg  
Methionine: ..... 3,7 g/kg  
Threonine: ..... 12,4 g/kg  
Cystine: ..... 2,3 g/kg  
Serine: ..... 11,8 g/kg  
Proline: ..... 10,9 g/kg  
Glycine: ..... 12,2 g/kg  
Alanine: ..... 20,3 g/kg  
Valine: ..... 13,6 g/kg  
Leucine: ..... 18,6 g/kg  
Thyrosine: ..... 7,0 g/kg  
Phenylalanine: ..... 12,3 g/kg  
Histidine: ..... 6,0 g/kg  
Arginine: ..... 13,5 g/kg  
Aspartic acid: ..... 25,7 g/kg  
Glutamic acid: ..... 31,4 g/kg

#### OTHER BIOACTIVE SUBSTANCES

Kynurenic acid: ..... 3,35 µg/kg  
Alpha ketoglutarate: ..... 21 g/kg  
Cytrulline maleate: ..... 25 g/kg

*\*Macro- and micro-element content may fluctuate within the +/- 10-20% range*

**Yarrowia Equinox is the only formula for horses based on unique Yarrowia lipolytica yeast. It improves numerous functions of the organism:**

- **strengthens immunity**

due to natural properties of our yeast, including the high niacin content, Yarrowia Equinox strengthens the immune system, thus increasing the resistance to various infections, particularly in horses susceptible to diseases, with compromised immunity, or during periods of increased risk of infection (autumn and winter and/or due to frequent travels)

- **improves digestion**

due to prebiotic properties of yeast, stimulating the growth of the beneficial intestinal microflora, Yarrowia Equinox reduces digestive problems and the risk of colic, diarrhoea, constipation and other consequences of improper feeding, change of diet or stress

- **increases strength and overall well-being**

high biological value of yeast proteins in Yarrowia Equinox (with all necessary exogenous amino acids), selenium and vitamin E, provides an increased strength and stamina for hardworking horses, and speeds up muscle regeneration. It also plays a significant role in development of muscular tissue in weaker and in young horses. There are also other bioactive substances that significantly support the above mentioned processes, e.g., cytrulline maleate. This compound facilitates the production of nitrogen oxide under physical stress, dilates blood vessels, increasing the supply of oxygen, creatine and other nutrients to muscle cells, reduces muscular pain and helps remove lactic acid and ammonia from muscles

- **strengthens hair and hoof horn**

Yarrowia Equinox has a beneficial effect on the quality of hoof horn and coat. Those effects are perfectly visible in strengthened structure of hooves and reduced cracking of its walls, and in strong and shiny hair. Horses that received Yarrowia Equinox formula as a part of their diet had much more flexible soles and anterior hoof walls, and improved mechanical properties of hair (no damage in foretop samples). Zinc and B group vitamin complex content, particularly vitamins B2 and B5, support hair and hoof horn growth, as well as healing processes in the skin (wound healing, lumps). Also, the content of amino acids that contain sulphur is important, as only that form of sulphur is assimilated by horses. Methionine and cystine participate in keratin production, influence hardness of hoof horn and maintenance of nice, smooth and shiny hair

- **regenerates cells**

high linoleic acid content with valuable omega-3 bonds supports the correct course of all processes mentioned above, and additionally supports regeneration of cells, especially within the nervous system

- **improves digestibility of the feed** and increases the appetite of horses

## Winners recommend Equinox!







**Skotan SA** is an R&D company focused on development and implementation of new, innovative technologies and their commercial use. Since 2007, the company has been collaborating with leading scientific centers in Poland, doing research on the utilization of *Yarrowia lipolytica* yeast. Working with The Natural Sciences University in Wrocław we have obtained an unique strain of yeast **Yarrowia lipolytica A-101**, which has several novel properties. At present, we are the only company in the world that uses the A-101 strain of *Y. lipolytica*. We have the manufacturing site for growing the yeast and our own research laboratories. Combined with an innovative method of drying, developed specially for Skotan SA, the method that allows the preservation of valuable properties of active ingredients (vitamins, amino acids and enzymes), and with additional engineering know-how, we can produce top quality *Y. lipolytica*-derived supplements for horses.

Skotan SA works according to the GMP, GHP and HACCP standards.



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