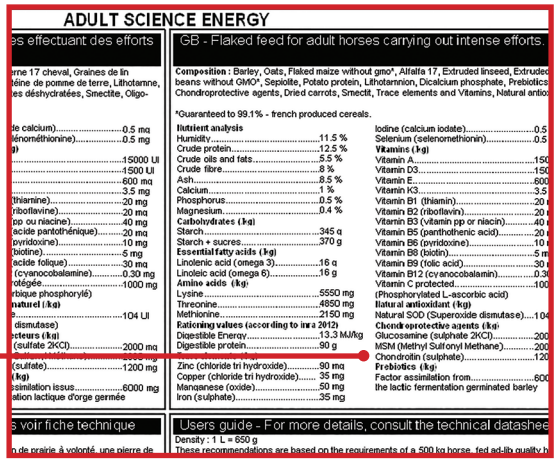
# SPECIFIC NUTRIMENTS


ADULT SCIENCE ENERGY

GB - Flaked feed for adult horses carrying out intense efforts.

Composition : Barley, Oats, Flaked maize without gmo*, Alfalfa 17, Extruded linseed, Extruded beans without GMO*, Sepiolite, Potato protein, Lithotamnion, Dicalcium phosphate, Prebiotics Chondroprotective agents, Dried carrots, Smectit, Trace elements and Vitamins, Natural antio

*Guaranteed to 99.1% - french produced cereals.

Nutrient analysis
Humidity 11.5 %
Crude protein 12.5 %
Crude oils and fats 5.5 %
Crude fibre 8 %
Ash 8.5 %
Calcium 1 %
Phosphorus 0.5 %
Magnesium 0.4 %
Carbohydrates (kg)
Starch 345 g
Starch + sucres 370 g
Essential fatty acids (kg)
Linolenic acid (omega 3) 16 g
Linoleic acid (omega 6) 16 g
Amino acids (kg)
Lysine 5550 mg
Threonine 4850 mg
Methionine 2150 mg
Rationing values (according to inra 2012)
Digestible Energy 13.3 MJ/kg
Digestible protein 90 g
Zinc (chloride tri hydroxide) 90 mg
Copper (chloride tri hydroxide) 35 mg
Manganese (oxide) 50 mg
Iron (sulphate) 35 mg
Iodine (calcium iodate) 0.5
Selenium (selenomethionin) 0.5
Vitamins (kg)
Vitamin A 150
Vitamin D3 150
Vitamin E 600
Vitamin K3 3.5
Vitamin B1 (thiamin) 20
Vitamin B2 (riboflavin) 20
Vitamin B3 (vitamin pp or niacin) 40
Vitamin B5 (panthothenic acid) 20
Vitamin B6 (pyridoxine) 10
Vitamin B8 (biotin) 5 m
Vitamin B9 (folic acid) 30
Vitamin B12 (cyanocobalamin) 0.3
Vitamin C protected 100
(Phosphorylated L-ascorbic acid)
Natural antioxidant (kg)
Natural SOD (Superoxide dismutase) 10
Chondroprotective agents (kg)
Glucosamine (sulphate 2KCl) 200
MSM (Methyl Sulfonyl Methane) 200
Chondroitin (sulphate) 120
Prebiotics (kg)
Factor assimilation from 600
the lactic fermentation germinated barley

voir fiche technique

Users guide - For more details, consult the technical datashee

Density : 1 L = 650 g

## ASSIMILATION FACTORS

### DEFINITION

Assimilation factors stem from the transformation of barley grains by germination and lactic ferments from 8 strains of micro-organisms (lactobacillus and lactic streptococcus).

### PROPERTIES

As a herbivore, the horse shelters a fibrolytic (= cellulolytic) flora in his large intestine which breaks down fibre into energy-giving nutrients. To maintain his digestive health and for effective digestion of fibre it is essential to respect the balance between the fibrolytic flora and the other types of flora.

**Assimilation factors act as prebiotics, that is to say they favour the development and activity of the intestinal bacteria beneficial to the health of the horse.**

Thus, when added daily at effective doses to the horses' ration, the microbial activity of deteriorating fibrous constituents in the large intestine is significantly increased. In the horse, this stimulation of cellulolytic activity contributes to a **better use of fibres and to maintaining the balance between the different floras**.

The benefits of this type of supplementing in breeding have been studied. It has been shown that assimilation factors allow:

- **Optimisation of the implantation and activity of the digestive flora in the foal**. Indeed, when bacterial assimilation factors are given to the broodmare around the time of foaling, during the first five days of life **the digestive micro-flora in the large intestine of the foal is active and established faster**. The precocity and quality of microbial colonisation in the digestive tract by the new-born animals' indigenous micro-flora, conditions the quality of the barrier effect of this flora against pathogenic micro-organisms.

- **Optimal foal growth and nutritional recuperation by the broodmare**. Clinical studies on the ground and under controlled
conditions confirm the beneficial effects of assimilation factors on **post-partum weight recovery by the broodmare and to weight gain in the foal under the mother**. This last point can be explained by improved milk production in the mare (quantity and/or quality).

More generally, assimilation factors are recommended for:
- Increasing feed digestibility **during periods of accrued energetic demand**: growth, lactation, stallions at stud, training, etc.

- Favouring **recuperation of body condition** during convalescence.

- Securing or restoring the balance between the different floras during **periods of stress**: weaning, turnout to grass, preparation for the sale ring, feeding transitions, competition, transport, etc.

- Favouring the implantation of the digestive micro-flora in the **foal during the neonatal period**.

### RECOMMENDATIONS

For a 500 kg horse, distributing **between 10,000 and 30,000 mg per day** of assimilation factors is recommended.

# SUPEROXYDE DISMUTASE

During moderate to intense muscular effort, consumption of oxygen significantly increases leading to energy being provided aerobically which allows the effort to be continued. **Equally this accrued use of oxygen leads to a large increase in the production of pro-oxidising free radicals**, firstly representing a direct threat to muscle cells, and then to the entire organism. Consequently, we can easily understand that **in horses carrying out intense efforts, it is judicious to increase anti-oxidant supplementation with the aim of neutralising these free radicals**.

## DEFINITION

Superoxide dismutase (SOD) is a fundamental enzyme in the struggle against oxidative stress and naturally produced by the organism. It is of interest having a **complimentary action to other commonly used antioxidants (selenium, vitamins E and C)**.

The SOD incorporated into our feeds is **100 % natural**: extracted from the flesh and juice of a particular variety of melon that is naturally rich in antioxidants (it also contains catalase). It is supplied **in a coated form** which confers stability during the manufacturing of feeds and which also protects it from gastric acidity.

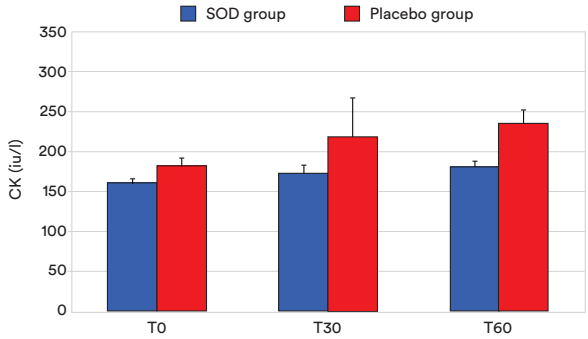
## PROPERTIES

The interest of supplementing with SOD in racehorses was notably proved by C. NOTIN and al. In the results of a scientific study published in 2010 and titled “Oral supplementation with SOD in Standardbred trotters in training: a double-blind placebo-controlled study”. The results suggested that **providing oral SOD may protect red blood cells from haemolysis (destruction) and limit the increase in muscle enzymes (creatine kinase, CK) in the blood** (cf. figures below).

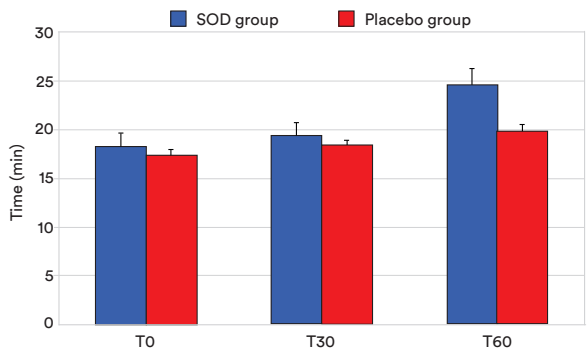
## RECOMMENDATIONS

For a 500 kg horse, distributing **between 260 and 520 IU per day** of SOD is recommended.

**Evolution of the resting plasma creatine kinase activity in the SOD group and placebo group before supplementation (T0) and 30 (T30) and 60 (T60) days after supplementation**
(source. C. NOTIN et al., 2010)




**Evolution of plasma resistance to haemolysis in the SOD group and placebo group before supplementation (T0) and 30 (T30) and 60 (T60) days after oral supplementation**
(source. C. NOTIN et al., 2010)



# CHONDROPROTECTIVE AGENTS

The three chondroprotective agents incorporated into our feeds count amongst the most frequently employed in human health. Their effectiveness has been scientifically validated by numerous clinical studies.

## DEFINITION

Chondroprotective agents are substances used with the aim of **protecting the cartilage** of articulations and are principally indicated in the **prevention and treatment of arthritis**.

## PROPERTIES

**Chondroitin** is a constituent of proteoglycans whose role is to maintain correct **hydration of cartilage and bones.** Furthermore, it directly protects cartilage cells from enzymatic reactions and free radicals.

**Glucosamine** is the precursor of many of the constituents of proteoglycans and of hyaluronic acid. In cartilage, hyaluronic acid is bound with proteoglycans and forms aggregates which assure good hydration of this tissue. In the synovial fluid of joints, hyaluronic acid takes a **role of lubricant and chondroprotective agent**.

**MSM** is also endowed with chondroprotective properties. In addition it is a **source of organic sulphur indispensable to the synthesis of collagen**, an abundant cartilage protein, that bestows hydration, resistance, elasticity and suppleness properties.

## RECOMMENDATIONS

| MG/100 KG LW/PER DAY | DAILY RECOMMENDATIONS |
|---|---|
| Chondroitin sulphate | 200 - 1,200 |
| Glucosamine sulphate 2KCl | 1,000 - 2,000 |
| MSM | 800 - 4,000 |

NB: It is recommended to use marine chondroitin sulphate (and not bovine, poultry or porcine).

# GLUTAMINE

## DEFINITION

Glutamine is one of the 20 natural amino acids.

## PROPERTIES

Glutamine represents an **important energy source for fast renewing cells**. It intervenes at many levels:

- **Protection and regeneration of the walls of the digestive system**. For example, it takes part in maintaining the integrity of the gastric mucosa and helps heal ulcerous lesions.
- Supports the **immune defences**.
- Installing a **beneficial digestive flora**.
- **Hepatic protection and regeneration**: improves detoxifications, and prevention of steatosis (excessive fat).

## RECOMMENDATIONS

For a 500 kg horse, distributing **between 10,000 and 15,000 mg per day** of glutamine is recommended.