Equiplanet

EQUINE PERFORMANCE NUTRITION

Reduction of muscle damage

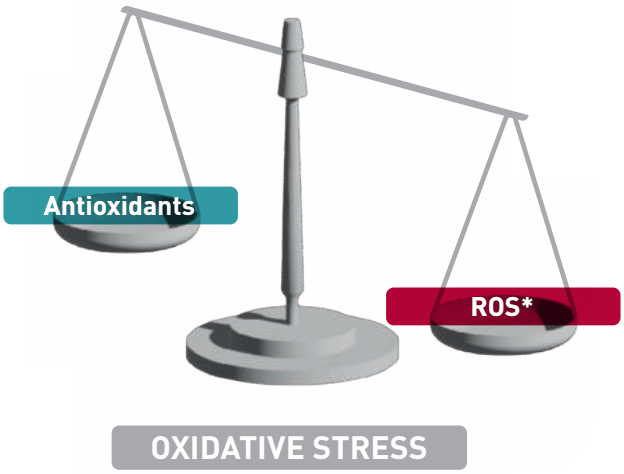
ALGAPHYT

Complementary feed for horses

Role of Omega-3 Fatty Acids from Schizochytrium in Sport Horses

Omega-3 fatty acids, particularly EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid), are well known for their anti-inflammatory properties and their role in modulating oxidative stress.
In sport horses, these compounds are increasingly being studied for **their benefits in muscle recovery, cell membrane integrity, and support of athletic condition.**

DHA from Schizochytrium represents a safe, sustainable, and effective source of mega-3 fatty acids for horses. Its supplementation, especially in combination with other antioxidants, provides tangible benefits for sport horses by improving recovery, enhancing muscle protection, and supporting oxidative balance.



ROS - Reactive Oxygen Species*

DHA from Schizochytrium represents a safe, sustainable, and effective source of omega-3 in horses. Its supplementation, especially in combination with other antioxidants, offers concrete benefits for the sport horse, improving recovery, muscle protection, and oxidative balance.

Mechanisms of Action and Benefits in Horses

– Improved fluidity and function of cell membranes (especially in red blood cells and muscle fibers)

– Anti-inflammatory action through modulation of eicosanoids and production of resolvins and protectins

– Reduction in post-exercise creatine kinase (CK), a marker of muscle damage

– Greater resistance to oxidative stress when combined with natural antioxidants (vitamins C, E, polyphenols)

– Potential improvement in athletic condition in horses undergoing long-duration or endurance exercise

PRACTICAL APPLICATIONS IN SPORT HORSES

Supplementation with DHA from Schizochytrium is beneficial for horses engaged in various athletic disciplines. It is particularly useful during periods of intense training or post-competition recovery to support muscle function and overall well-being.

Differences Between the Various Sources of Omega-3 Used in Horses

Aspect	DHA from Schizochytrium	Fish Oil	Vegetable Oils (flax, soy)
Omega-3 Composition	High direct DHA concentration (→35%)	Mix of EPA and DHA (variable)	Rich in ALA (alpha-linolenic acid), low or no DHA/EPA
Bioavailability	High and direct	High	Limited – requires endogenous conversion from ALA to DHA/EPA (inefficient in horses)
Taste and Palatability	Neutral, well tolerated	Often refused by horses due to smell/taste	Generally well accepted
Oxidative Stability	Better if stabilized	High risk of oxidation – requires antioxidants	Relatively stable
Environmental Contamination	None (product of controlled fermentation)	Risk of contamination with heavy metals or PCBs	None
Environmental Sustainability	High (non-animal origin, controlled production)	Low (depends on industrial fishing)	High
Documented Effects in Horses	Post-exercise CK reduction, improved antioxidant capacity (Stucchi et al., 2025; Hess et al., 2019)	Inflammation reduction, but limited data in horses	Indirect benefits, but no direct DHA/CK/hemolysis effectsi

Antioxidant capacity and athletic condition of endurance horses undergoing nutraceutical supplementation

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Journal of Equine Veterinary Science 146 (2025) 105364

Endurance is an equestrian discipline that relies primarily on aerobic metabolism.

Intense aerobic exercise generates reactive oxygen species (ROS), which can lead to oxidative stress and reduce athletic performance.

This study evaluated the effects of Algaphyt, a complementary feed containing natural antioxidants and omega-3 fatty acids, on blood antioxidant capacity and athletic condition in endurance horses.

Twelve endurance horses in full training were included in the study. All horses came from the same stable and followed the same training regimen, which consisted of aerobic exercise (walking, trotting, and light cantering) for two hours, three times a week.

Eleven Arabian horses completed the study: 6 treated subjects and 5 negative controls.

Randomization: treatment group (Algaphyt 100 g/day for 21 days) or control
Protocol at study start (T0) and after 21 days (T1):

1 - Pre-Exercise

Clinical examination and complete blood count

Baseline blood lactate

KRL test (whole blood and red blood cells)

2 - Exercise

15 minutes trotting, 60 minutes galloping at 20 km/h (30 minutes on the right rein, 30 on the left)

Monitoring of average and maximum heart rate

3 - Post-Exercise

Heart rate at 5, 10, 15, and 30 minutes

Blood lactate at 30 minutes

Creatine kinase at 30 minutes

KRL test (whole blood and red blood cells)

RESULTS

Variable	Treatment Group		Control Group	
	T0	T1	T0	T1
Avg HR (bpm)	128.0 ± 8.85	127.0 ± 7.87	128.6 ± 13.4	127.4 ± 8.59
Max HR (bpm)	144.2 ± 7.41	145.8 ± 8.13	146.4 ± 15.5	151.2 ± 6.54
HR at 5 min (bpm)	58.8 ± 6.97	59.7 ± 10.9	59.6 ± 5.03	52.0 ± 2.35
HR at 10 min	47.0 ± 6.51	52.0 ± 6.29	46.2 ± 4.38	50.4 ± 6.27
HR at 15 min	42.2 ± 5.35	46.7 ± 5.65	44.6 ± 3.98	47.0 ± 5.15
HR at 30 min	40.0 ± 6.78	41.0 ± 7.38	41.0 ± 1.58	42.8 ± 6.6

Heart rate: No significant differences in heart rate were observed between the two groups (6 treated horses, 5 controls).

Variable	Treatment Group		Control Group	
	T0	T1	T0	T1
Resting lactate (mmol/L)	0.85 ± 0.18	1.05 ± 0.37	0.76 ± 0.22	0.86 ± 0.28
Lactate at 30 min (mmol/L)	1.53 ± 0.44	1.38 ± 0.40	1.46 ± 0.64	1.46 ± 0.74
Delta Lactate (mmol/L)	**0.68 ± 0.38**	**0.33 ± 0.36**	0.70 ± 0.47	0.46 ± 0.53

Blood lactate: There was a decreasing trend (p = 0.09) in delta lactate values (post-exercise lactate – baseline) in the treatment group.

Variable	Treatment Group		Control Group	
	T0	T1	T0	T1
CK at 30 min (IU/L)	**330.8 ± 121.8**	**254.8 ± 63.5**	258.4 ± 27.2	271.2 ± 47.8

Serum creatine kinase post-exercise: Statistically significant reduction (p = 0.006) in CK levels at 30 minutes post-exercise in the treatment group.

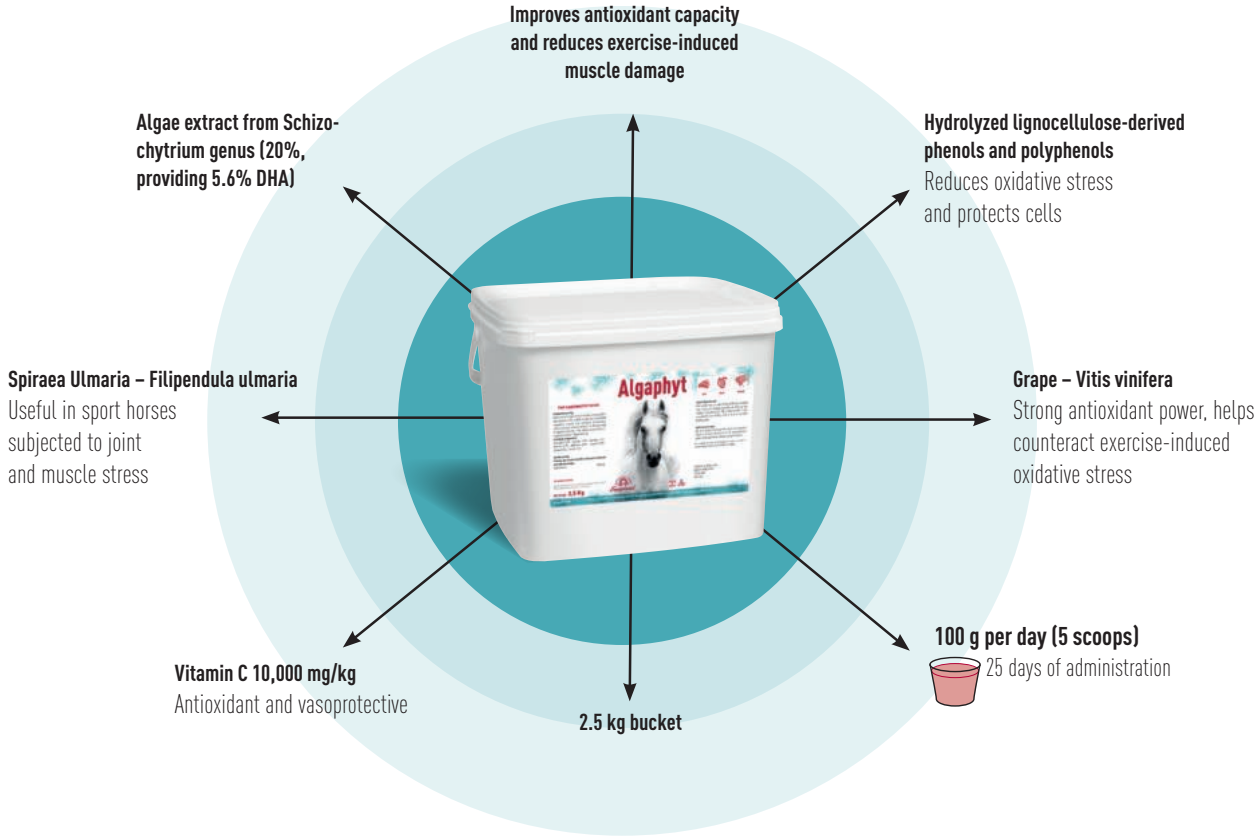
Variable	Treatment Group		Control Group	
	T0	T1	T0	T1
KRL whole blood, rest (min)	76.9 ± 12.20	79.0 ± 4.59	91.1 ± 7.03	85.9 ± 6.69
KRL RBC, rest (min)	**54.9 ± 7.30**	**58.4 ± 3.81**	64.1 ± 3.10	62.3 ± 3.95
KRL whole blood, post (min)	78.6 ± 13.0	82.5 ± 5.22	93.3 ± 8.0	87.7 ± 7.56
KRL RBC, post (min)	**53.8 ± 6.93**	**59.5 ± 5.35**	63.3 ± 4.27	62.8 ± 3.45

KRL Test*: Significant increase in erythrocyte antioxidant capacity both at rest and post-exercise in the treatment group.

*The KRL test is a biological test, recently validated in horses, that assesses blood antioxidant defenses and resistance to hemolysis induced by a thermocontrolled free radical attack.

Supplementation with Algaphyt, based on omega-3 fatty acids, plant-derived antioxidants, and vitamin C for 21 days, improved antioxidant capacity in endurance horses and reduced exercise-induced muscle damage.
The supplement may be a valuable addition to the nutritional management programs of sport horses undergoing intense training.

ALGAPHYT
Equine **performance** starts from **best quality nutrition**



ALGAPHYT is a complementary feed for horses, formulated with a high concentration of algae extract from the **Schizochytrium** genus, providing 5.6% **DHA** (docosahexaenoic acid), a polyunsaturated omega-3 fatty acid (22:6). DHA primarily exerts an anti-inflammatory action, especially when inflammation results from intense physical activity that leads to chronic alterations in the horse's musculoskeletal system. In particular, DHA is an essential component of cell membranes and plays a crucial role in maintaining their stability.

Algaphyt also contains plant extracts such as Vitis vinifera (grape), a natural source of polyphenols—bioactive compounds with well-known antioxidant, anti-inflammatory, and cardiovascular protective properties. It is used in sport horses to counteract oxidative stress caused by intense physical activity.

Spiraea ulmaria – Filipendula ulmaria, included in the formula, has a mild anti-inflammatory and analgesic effect due to its salicylic derivatives (such as salicin), similar to those found in white willow. These benefits are particularly helpful for sport horses exposed to joint and muscle stress.

Vitamin C acts as an antioxidant by neutralizing free radicals and protecting cellular structures from membrane lipid peroxidation, DNA damage, enzymatic protein alteration, and oxidative stress induced by repeated exertion. Vitamin C also has a significant vasoprotective action, as it enhances endothelial function by stimulating the synthesis of nitric oxide (NO), a regulator of vasodilation. It reduces capillary permeability and strengthens the structure of vascular collagen, contributing to the stability of blood vessels.

These effects are particularly beneficial in sport horses subjected to high cardiovascular demands, such as those involved in endurance, show jumping, eventing, racing, or trotting.

ALGAPHYT

MUSCLE SUPPORT

Complementary feed whose components help to reduce the effects of athletic over-exertion

Composition per Kg:
Alfalfa, extract of algae of the Schizochytrium genus (20% which provides 5.6% of DHA), phenols and concentrated polyphenols obtained from hydrolysed lignocellulose, calcium carbonate, products obtained from the processing of vegetables (red vine - Vitis vinifera, Spiraea Ulmaria - Filipendula ulmaria), Wheat feed flour.

Analytical components:
Crude protein 8.3%; Crude fats 12.3%; Crude fibre 14.1%; Crude Ash 24.7%; Methionine 0.09%; L-Lysine 0.25%; Sodium 0.03%; Calcium 7.5%.

Instructions for use: Mix into the feed in a ratio of 500 g/100 Kg of complete feed. Ensure the following quantities per head per day: Yearlings: 25 g; Horses 50 - 100 g. Administer the 10 days preceding the race at 100 g, keep at 50 g for the entire
training period.

Additives per Kg:
Vitamins, pro-vitamins and effect substances chemically well-defined analogue
3a300 Vitamin C 10.000 mg

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"This catalogue may not fully reflect the corresponding product labels, which are subject to change due to force majeure, regulatory updates and/or significant increases in the prices of components or their unavailability.

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