

Purina®

VETERINARY DOCUMENTS

Condition Sheets



EQUIPURINA.CA

All the information in this document
are available through equipurina.ca website
in your *Professional* section
(below *About Purina*)



VETERINARY MANUAL

FOREWORD

First, we would like to thank you for incorporating our veterinary manual into your daily practice. It is very important to us at Purina that we can partner with local veterinarians across Canada to ensure that our customers are utilizing the full potential of our equine products in order to meet the specific nutritional needs of their horse. Included in this manual you will find many valuable resources that will assist you when helping your clients decide the best nutritional and management recommendations for their specific situation.

The following page provides easy access to the contact information for our Purina Connect service which can help to answer any nutrition related questions, whether they are feeding Purina products or not. The condition sheets provide a valuable resource on specific disease etiologies, dietary and management recommendations, as well as the recommended Purina products to best suit a horse that exhibits those conditions. Product fact sheets are included for easy access when assessing which products will work best for your clients. This manual functions as a living document so it allows for pages to be updated as easily as opening a binder.

A great amount of time, effort and passion has been put into this manual to ensure we are providing veterinarians with the latest nutritional knowledge on our products and how to best optimize the diets of horses prone to the various conditions listed.

We look forward to working and growing together as we continually optimize and update our manual in the future.

Sincerely,

The Purina Equine Technical Team





CONTENTS

CONDITION SHEETS

Chronic Obstructive Pulmonary Disease (COPD) or Heaves	5
Deficiencies in Horses	7
Equine Colic	9
Equine Cushing's Disease or Pituitary Pars Intermedia Dysfunction (PPID)	11
Equine Gastric Ulcers	13
Equine Insulin Resistance	15
Equine Laminitis	17
Equine Metabolic Syndrome	19
Equine Protozoal Myeloencephalitis (EPM)	21
Excitable Behaviour in Horses	23
Hyperkalemic Periodic Paralysis	25
Malignant Hyperthermia	27
Neglected Horses, Weight Loss/Poor Condition	29
Osteochondritis Dissecans (OCD) or Developmental Orthopedic Disease (DOD)	31
Overweight Horses	33
Polysaccharide Storage Myopathy	35
Recurrent Exertional Rhabdomyolysis	37
Renal and Hepatic Disease	39
Underweight Horses	41

FACT SHEETS

FEEDS

Simplici-T Fibra	43
Simplici-T Original	45
Simplici-T Concept	47
Evolution Maternity	49
Evolution Juvenile	51
Evolution Elite	53
Evolution Senior	55
Omolene Maternity 300	57
Omolene Progression 200	59
Omolene Sport Plus	61
Veloci-T Force	63
Equilibrium Legend XT	65
Equilibrium XCEL HD	67
Equilibrium Trimax	69

Equilibrium Pro Plus	71
Equilibrium Equilizer	73
Equilibrium Optimal	75
SuperFibra Integri-T	77
SuperFibra Plus	79
SuperFibra Ultra	81
SuperFibra Classic	83
SuperFibra Nature Complement	85
Oatena	87
Oleo Special	89

SUPPLEMENTS

Pur-Athlete	91
BMZ	92
Horse Plus	93
Equi22	94
Equi-EEZ	95
EZ Balance	96
Horse-Shield	97
Digestive Balance	98

APPENDIX

Balancing a forage only diet	99
Prebiotics and probiotics: their impact and role on your horse's digestive health	101
Topline is key to horse well-being	103
Healthy hooves need good nutrition	105
Different feed textures... Why?	107
Changes in your horse's diet	109
Preventing joint injuries in the performance horse	111
Preventing Recurrent Exertional Rhabdomyolysis (RER)	113
Feeding the broodmare	115
Understanding Selenium	117
All about nutrition myths	119

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) OR HEAVES

ETIOLOGY

- Chronic Obstructive Pulmonary Disease (COPD) or “heaves” is a respiratory disease that can be the result of an allergic response that occurs following exposure of the lower airways to dust and moulds, particularly those that come from poorly cured hay. COPD occurs most frequently in horses kept in stables.

SYMPTOMS

- COPD is characterized by signs of chronic coughing, decreased exercise tolerance, difficulty breathing and abnormal lung sounds.
 - Difficulty in breathing can occur when susceptible horses are exposed to mouldy feeds or dusty conditions.

RISKS AND/OR COMPLICATIONS

- Common risk factors for the occurrence of clinical signs are exposure to poorly cured, mouldy or dusty feeds, confinement to a stable environment, inadequate stable ventilation, straw bedding and age (6 years or older).

MANAGEMENT RECOMMENDATIONS

- Remove the animal from the environment that appears to be causing the problem and reduce exposure to dust and moulds.
 - Horses suffering from acute signs of COPD experience substantial remission of clinical signs one to three weeks after being moved to a dust-free environment and fed cubed roughage or haylage (fermented hay).
- Keep susceptible horses in the open air. Many owners are reluctant to keep horses outside during cold weather but there is ample evidence to show that horses do very well in cold, dry climates when they are in good body condition and given adequate nutrition, a good windbreak and overhead shelter.
- Horses with COPD that are kept indoors require well-ventilated stalls bedded with shredded paper, peat or high-quality shavings.
- Do not have horses in the stalls when cleaning stalls if possible to reduce exposure to dust and ammonia.
- Increasing the frequency of meals (four to six meals per day) helps avoid boredom in animals, promotes the proper functioning of the digestive system and proper digestive health, keeps saliva production constant, prevents a reduction in the gastric pH and therefore protects the gastric mucous membranes.
- It is strongly recommended to have the animal examined by a veterinarian and have laboratory tests performed to detect and identify allergens. This combined approach of an adapted diet and environmental control may help reduce symptoms.

DIETARY RECOMMENDATIONS

- Minimize/eliminate dust and mold in the diet by utilizing feeds that reduce or eliminate the amount of hay in the diet, including complete feeds and feeds with beet pulp and soybean hulls as a source of highly digestible fibre.
- As required, feed only high-quality hay, hay cubes or chopped forage products.
 - Soak hay in water prior to feeding to minimize dust but avoid leaving hay soaking for more than a few hours in warm weather to reduce risk of mould.
 - Placing feed at ground level may also assist in draining inflammatory exudates collected in the trachea.

SUGGESTED PURINA PRODUCTS

FEED NOTES

- Minimize/eliminate dust and mold in the diet by utilizing feeds that reduce or eliminate the amount of hay in the diet, including complete feeds and feeds with beet pulp and soybean hulls as a source of highly digestible fibre.
- As may be required, feed high-quality hay soaked in water, hay cubes or chopped forage.

RECOMMENDED

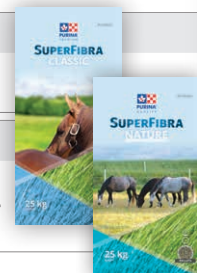
Select a cubed product (hay substitute or supplement) in combination with a feed labelled with the **SUPER FIBRE** and **OMEGA-3** icons to add fibre to the daily ration.

SUPERFIBRA CLASSIC

can replace up to 50% of the daily hay ration.

SUPERFIBRA NATURE

can replace up to 50% of the daily hay ration if served with the appropriate amount of complete supplement.



- Serve these feeds with at least 1.5–2.5% of the horse's body weight (on a dry matter basis) in long-stemmed forage (hay/pasture) per day.
- Prefer a product with a high digestible fibre content such as **INTEGRI-T** or **TRIMAX**.
- Use **PUR-ATHLETE** as a source of digestible fat and omega-3 (anti-inflammatory) and omega-9 for an extra calorie source as needed.
- **HORSE-SHIELD** may also be added to the diet to promote nutrient absorption and increase the digestibility of fibre in the ration.
- Add **HORSE PLUS** to the ration for extra vitamin B to support the equine metabolism.

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

DEFICIENCIES IN HORSES

ETIOLOGY

The main cause of deficiency is malnutrition or underfeeding. The horse is simply not getting enough or not at all of one or more nutrients, be it calories, protein, minerals or vitamins.

All horses that do not require feed, or receive less than the manufacturer's recommended amount, should receive at least one supplement of minerals and vitamins.

Other factors can also interact with nutrient absorption, such as excess of iron or sulfur in the water, which can block the absorption of trace elements.

Certain foods or plants can also decrease the absorption of nutrients, such as horsetail and eagle fern which cause vitamin B deficiency, or whole soy bean and its antitryptic effect.

SYMPTOMS

- Lack of energy, apathetic, little resistance to work
- Poor hoof quality (cracking hooves, soft sole, slow growth)
- Dull, unkempt coat, poor shedding, poor quality and grows hair
- Deficient muscle mass
- Low body condition scoring
- Predisposition to rhabdomyolysis
- Deficient immune system
- Reproduction issues (lack/decreased fertility, death of the foal due to white muscle disease, etc.), growth (bones' formation, contractures of tendons, OCD, etc.) and performance (lack of resistance, poor recovery after exercise, etc.).

DIETARY RECOMMENDATIONS

Serve quality hay in sufficient quantity, containing a good level of calories and protein and low in lignin in order to help the body condition and muscle mass.

- Hay cannot provide all the nutrients essential to the health and survival of the horse.
 - In Canada, it contains no selenium, low trace-elements and quickly loses its vitamin content after mowing
- To supplement hay, a feed will be served to increase the amount of calories and protein served as needed.
- A supplement will be served to increase the content of minerals, vitamins and / or protein
- Serving a well-balanced ration as needed throughout the year will prevent variations in its health status
- In addition to the amount of minerals and vitamins served, the ratios between the different minerals must be respected in order to avoid bad interactions.

For example, the Ca/P ratio should be around 2/1 for foals, and between 1/1 and 5/1 in adults, while the Zn/Cu ratio should be around 3/1.

- Serve quality hay in sufficient quantity, which means that the horse should receive a minimum of 1.5% of its weight per day in long fiber (at least ¾ " or 2 cm). On average, horses consume 2.5% of their weight per day.
- Have the hay analyzed, in order to know its content and balance the rest of the ration according to the result and the horse's needs.
- Serve calories, protein, minerals and vitamins depending on the horse's weight, body size, muscle mass, level of exercise and life stage (foal, broodmare, etc.)
- Offer a balanced ration throughout the year, and adjust it quickly if the requirements are changing
- Make any feed change gradually over a 7 to 10 days period.
- Offer source of salt (NaCl) daily as well as plenty of fresh and clean water at all times.
- Daily ration should be divided into 2 and preferably 3 separate feedings or more.
- Use a scale to weigh the feed so you know exactly how much the horse is being fed. Do not feed by volume.

DAILY REQUIREMENTS FOR A HORSE AT MAINTENANCE LEVEL (OR LIGHT EXERCISE)

MINIMUM REQUIREMENTS ACCORDING TO THE NRC GUIDE (2007)

Horse's weight	Selenium	Vitamin A	Vitamin D	Vitamin E	Zinc	Copper	Manganese
400 kg	0.8 mg	12 000 UI	2 640 UI	400 UI	320 mg	80 mg	320 mg
450 kg	0.9 mg	13 500 UI	2 970 UI	450 UI	360 mg	90 mg	360 mg
500 kg	1 mg	15 000 UI	3 300 UI	500 UI	400 mg	100 mg	400 mg
550 kg	1.1 mg	16 500 UI	3 630 UI	550 UI	440 mg	110 mg	440 mg
600 kg	1.2 mg	18 000 UI	3 960 UI	600 UI	480 mg	120 mg	480 mg

SUPERIOR REQUIREMENTS ACCORDING TO THE MOST RECENT RESEARCH

Horse's weight	Selenium	Vitamin A	Vitamin D	Vitamin E	Zinc	Copper	Manganese
400 kg	1.6 mg	12 000 UI	2 640 UI	440 UI	512 mg	128 mg	480 mg
450 kg	1.8 mg	13 500 UI	2 970 UI	495 UI	576 mg	144 mg	540 mg
500 kg	2 mg	15 000 UI	3 300 UI	550 UI	640 mg	160 mg	600 mg
550 kg	2.2 mg	16 500 UI	3 630 UI	605 UI	704 mg	176 mg	660 mg
600 kg	2.4 mg	18 000 UI	3 960 UI	660 UI	768 mg	192 mg	720 mg

In addition to the minimum or superior amounts of minerals and vitamins to be served, it is important to respect certain ratios as mentioned, especially in growing foals.

Indeed, a ratio of 2/1 must be respected for the Ca/P.

For adult horses, the ration can go from 1/1 to 5/1.

For Zn and Cu, the ratio should be as close to 3/1 as possible.

SUGGESTED PURINA PRODUCTS

Recommended:

In order to increase only minerals and vitamins, without changing the protein and calorie content:

**EZ BALANCE
EQUI-EEZ
EQUI-22**



Recommended:

In order to balance the ration in minerals, vitamins and protein:

EQUILIZER

when the hay contains approximately 12% protein or more;

OPTIMAL

when the hay contains around 12% protein or less, or if you want to increase muscle mass (topline)



Recommended:

In order to increase calories and protein, you can increase the amount of feed served if it is less than the manufacturer's recommendations, or add extra fat and protein:

PUR-ATHLETE



FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

EQUINE COLIC

ETIOLOGY

- There are many causes of colic (abdominal pain); many are related to feeding mismanagement (abrupt changes, feeding frequency, quantity or quality of feed).
- A leading cause of colic is related to exceeding the starch and sugar digestion and absorption capacity of the small intestine, allowing the undigested portion to pass into the hindgut where it is rapidly fermented.
 - Rapid fermentation of nonstructural carbohydrates leads to rapid and undesirable changes in the microbiota populations and environment in the hindgut (excessive gas production, drop in pH), and may result in colic and other systemic consequences.
- Immediately following a bout of dietary related colic or other lower gastrointestinal upset/disorder, horses may be limited in their ability to digest fibre due to undesirable shifts in the microbial populations in the cecum and colon.
- Ingestion of poorly digestible fibre can lead to an intestinal impaction, particularly if exercise and water consumption are inadequate.

MANAGEMENT RECOMMENDATIONS

- Horses should be turned out and/or exercised daily.
- Horses should be completely cooled out following exercise before being fed concentrates.
- Horses that bolt their feed should be fed small amounts more frequently and feeding devices may be needed to slow consumption.
- Horses should be fed individually or in small groups with consideration for social hierarchy to prevent dominant individuals from consuming other horses' rations.
- Test for hydration

DIETARY RECOMMENDATIONS

- Horses should have access to good quality hay or pasture at all times.
- Horses should have clean, fresh water available at all times, particularly in very hot or cold temperatures.
- Never feed concentrate (grain) meals of more than 0.5% of a horse's body weight in one feeding. Do not exceed 0.5% of body weight per meal of concentrates (serve 3 to 6 meals per day).
- Avoid sudden changes in pasture, hay, supplements and grain concentrates.
 - Dietary changes should be made gradually over a minimum of 7 to 14 days to allow time for the microbial populations in the gut to adapt.
- Do not feed spoiled or mouldy feeds.
- Close attention must be paid to both rapidly growing "lush" pasture grass or grass growing under stress conditions (frost/drought) as consumption of pasture with high levels of fructan under these growing conditions can lead to colic.
- Horses should always be fed A MINIMUM OF 1–1.5% of their body weight per day as forage. Utilize controlled starch and sugar, added fat and highly digestible fibre feeds to minimize risk of sugar and starch overload in the hind gut.
- Utilize feeds with pre- and probiotics, and organic trace minerals to enhance fibre digestion and the bioavailability of nutrients, particularly in cases where there's a history of colic.
- Free choice access to fresh water and salt should be available at all times.
- Add 1 to 3 ounces of salt daily

SUGGESTED PURINA PRODUCTS

FEED NOTES

- Control starch and sugar intake and provide added calories from fat and digestible fibre.
- Further minimize the risk of starch overload by feeding highly digestible starch from processed grains (pelleted or extruded), or utilize products with controlled, highly digestible starch, added fat, highly digestible fibre, organic trace minerals, prebiotics and probiotics to minimize risk of starch overload and support fibre digestion in the hind gut.

GENERAL HORSES

Recommended:

EVOLUTION ELITE
EVOLUTION SENIOR
EVOLUTION MATERNITY
EVOLUTION JUVENILE
SUPERFIBRA INTEGRI-T
EQUILIBRIUM TRIMAX
EQUILIBRIUM XCEL HD



Alternatives:

SUPERFIBRA ULTRA
SUPERFIBRA PLUS



Supplements:

PUR-ATHLETE

Consider a high caloric supplement to reduce the total amount of feed consumed by the horse. If the horse needs extra calories in its ration, consider a highly digestible high fat, high protein and low sugar supplement.



HORSE-SHIELD

To improve nutrient absorption, add a live yeast supplement to the ration.

NOTES: Various considerations should be kept in mind when deciding on a feed. Choose a feed in a form that is easy to digest and assimilate for the animal such as multiparticulate, extruded or pelleted feeds. When choosing a feed, priority should be given to those containing low to moderate levels of sugars and starch. It should also focus on feeds containing pre- and probiotics, including complete yeast cell membranes, yeast culture and a mixture of live bacteria. Look for feeds with a **minimum content of 15% fibre and, preferably, lower than 8% fat.**

For colic caused by impaction: reintroduce a **soaked high fibre feed.**

For gas colic: control the intake of sugars and starch as well as hyperacidity in the colon. The analysis of hay and pasture is recommended to determine the percentage of sugar and fructan levels.

Post-surgery: Choose **INTEGRI-T** for its caloric value and digestibility.

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

EQUINE CUSHING'S DISEASE OR PITUITARY PARS INTERMEDIA DYSFUNCTION (PPID)

ETIOLOGY

- Etiology of PPID includes hypertrophy, hyperplasia and adenoma formation of the pars intermedia lobe of the pituitary gland, which results in excessive adrenocorticotropic hormone (ACTH) secretion and subsequent increased secretion of cortisol from adrenal glands.
- High circulating levels of cortisol may result in insulin resistance and dysregulation of carbohydrate metabolism.
- With a compromised immune system, challenges with chronic inflammation and/or infection may occur: foot abscesses, dental infections, pneumonia, parasitism, and chronic laminitis, episodes.
- 70% of horses over 20 years of age may be affected.

SYMPTOMS

- Horses with Equine Cushing's Disease tend to be older and may display the following symptoms or conditions:
 - Regional adiposity (supraorbital fat pads, cresty neck, fat pockets at tailhead, prepuce or mammary gland)
 - Prone to or recurrent bouts of laminitis, hirsutism (long curly hair growth that does not shed out in the spring)
 - Inappetence
 - Weight loss
 - Potbellied appearance
 - Hyperhidrosis (excessive perspiration; may be due to hirsutism)
 - Polydipsia (excessive drinking)
 - Polyuria (excessive urination)
 - Chronic infections or delayed wound healing
- Some present as obese but others may be thin and debilitated.
- Decreased muscle mass and tone can give an appearance of weight loss but may actually mask excess body fat as evidenced by regional adiposity.

MANAGEMENT RECOMMENDATIONS

- Treatment with pergolide or cyproheptadine may be appropriate. Veterinarian diagnosis and prescription are required.
- Routine exercise and regular turnout are extremely important as both will help to improve insulin sensitivity and overall well-being.
- Horses that have excessive hair (hirsutism) may be body clipped to prevent overheating, wet or matted hair coats.
- Excellent management practices such as regular dental care, hoof care, grooming, parasite control, blanketing during cold weather, protection from inclement weather and a routine vaccination program are required for these horses.

DIETARY RECOMMENDATIONS

- Feed a balanced ration, the bulk of which should be a good quality grass or mixed hay with low nonstructural carbohydrate (NSC; starch + sugar) content. The remaining nutrient balance that forage alone cannot provide may be supplied with a controlled starch and sugar concentrate containing calories from highly digestible fibre, vegetable fat, high-quality protein, and balanced vitamins and minerals.
- If additional energy or calories are needed, they should come primarily from highly digestible fibre (soluble fibre), and fat, with limited calories coming from nonstructural carbohydrates.
- Having hay tested for nutrient content is recommended to ensure that total dietary (hay or forage + grain or supplement products) starch and sugar are not in excess for horses affected by PPID, and that any nutrient deficits (essential amino acids, fat, vitamins and minerals) can be filled via an appropriate concentrate.
- Horses should be kept off "lush" pastures, new pasture growth (leaves less than 6" high from the ground) and pasture that has been under stress (drought, frost). Depending on management or facility logistics, horses can be muzzled to limit grass intake. These animals can be fed hay and a protein, vitamin/mineral supplement if additional calories from fat and fibre are not necessary.
- Chromium and/or a source of omega-3 polyunsaturated acids (EPA/DHA) may be useful supplements as chromium potentiates the action of insulin and omega-3 polyunsaturated fatty acids support the immune system and balanced inflammatory responses.
- Magnesium deficiency may cause decreased insulin secretion, and many horses with PPID have low circulating levels of serum magnesium.
- Provide ad libitum access to salt and fresh, clean water.

SUGGESTED PURINA PRODUCTS

FEED NOTES

- Feed a low, controlled starch and sugar diet with highly digestible fibre and adequate magnesium. A supplemental chromium source may be added.

Recommended (if the horse is not insulin resistant or does not need to lose weight):

EVOLUTION SENIOR or SUPERFIBRA INTEGRI-T

are excellent choices because they have controlled levels of NSCs and are high in omega-3s.



Alternative (if weight control is needed):

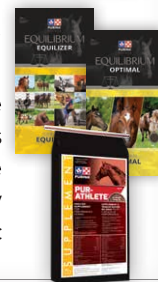
SUPERFIBRA PLUS SUPERFIBRA ULTRA SUPERFIBRA CLASSIC



Supplements:

If the horse needs to lose weight and/or is insulin resistant, **EQUILIBRIUM EQUILIZER** is recommended. If the hay or pasture is below 12% protein, **EQUILIBRIUM OPTIMAL** is proven to be a better option.

In both these cases, the addition of an omega-3 source is recommended. This can be served as a digestible oil or a processed product such as the **PUR-ATHLETE**. The amount given should be based on the horse's body condition score. If the horse is not given a complete feed and has a high body condition score, the Pur-Athlete supplement is not recommended. When the horse is fed a complete feed, Pur-Athlete may replace some or all of the complete feed ration and promote weight loss by lowering the overall caloric intake.



NOTES: When deciding on a feed or supplement, consideration should be given to the body condition of the animal, the necessary muscle mass gain, the stage of Cushing's disease, hyperinsulinemia and associated blood glucose levels, as well as other observed symptoms that require special attention. Monitoring the health of the animal and its evolution, as well as laboratory tests following dietary changes are highly recommended for its welfare. Subsequent dietary changes may be necessary.

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

EQUINE GASTRIC ULCERS

ETIOLOGY

- A high percentage of horses in training have been found to have ulcers, with horses in race training showing the highest prevalence.
- Additionally, incidence of ulceration in foals of all ages has also been documented, particularly in those around weaning age.
- The anatomy of the stomach predisposes the unprotected non-glandular squamous region of the stomach to ulceration resulting from repeated acid splash above the margo plicatus. This tissue, unlike that of the glandular portion of the stomach, does not have a mucus layer and does not secrete bicarbonate that serves as a buffer to acid produced in the stomach.
 - Ulcers have also been documented in the glandular portion of the stomach in conjunction with a failure of the protective mucosal bicarbonate layer, as well as in the duodenum of the small intestine.
- When saliva production is inadequate to buffer gastric acid and coat the squamous epithelium, gastric irritation and lesions may occur.

SYMPTOMS

- Gastric ulcers may contribute to chronic, recurrent colic, poor body condition, chronic diarrhea, sour attitude, exercise intolerance, poor performance and inappetance.

RISKS

- Horses that are housed in stalls, and/or undergo extended periods of time between meals, and/or are exposed to environmental stressors are more predisposed to gastric ulceration than horses kept at pasture and allowed to graze or eat forage throughout the day.
- Repeated use of nonsteroidal anti-inflammatory drugs and/or hypertonic electrolyte preparations may also contribute to the incidence of ulceration.

MANAGEMENT RECOMMENDATIONS

- Horses diagnosed with gastric and/or colonic ulcers should be under the care of a veterinarian, and treated to heal the ulcers through dietary, management and pharmaceutical interventions. Omeprazole is the only approved pharmaceutical for use in preventing and healing gastric ulcers in horses.
 - Continuous mastication encourages production of saliva that contains natural buffers, helping to protect the tissues in the stomach from further damage.
- It is helpful if horses suffering from ulcers can be turned out, preferably 24 hours daily and allowed to graze or consume forage throughout the day.
- Avoiding sudden changes in routine or diet can also help reduce the incidence of gastric ulceration in horses.

DIETARY RECOMMENDATIONS

- If access to pasture is not possible or contraindicated, it is imperative that horses with ulcers have access to excellent quality legume, grass or mixed hay.
 - The high calcium content of legume hay is useful as a dietary buffer and tends to be very palatable, therefore encouraging continuous intake.
- Once the ulcers are healed, it may be helpful to feed a daily buffer/antacid.
- Increasing the feeding frequency (four to six small meals per day) is also helpful in keeping saliva production constant and preventing a decrease in gastric pH, therefore protecting the mucosal lining.
- Horses with or predisposed to ulcers should not consume large grain meals with high starch and sugar content, as they tend to promote increased acid and volatile fatty acid production.
- Grain concentrates formulated with controlled starch and sugar technology as well as highly digestible sources of fibre should be used and fed in small meals evenly spaced throughout the day.
- Always provide access to good quality forage and free choice access to salt and clean water.

SUGGESTED PURINA PRODUCTS

FEED NOTES

- Important: The first step in care is to heal the ulcers.
- Increase saliva production to buffer gastric acids.
- Turn out on pasture or provide access to excellent quality legume, grass or mixed hay.
- Legume hay is preferred due to higher calcium which can aid as a buffer.

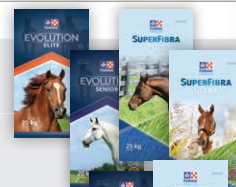
Recommended:

EQUILIBRIUM TRIMAX
EQUILIBRIUM LEGEND XT
EQUILIBRIUM XCEL HD
SUPERFIBRA INTEGRIT



Alternatives:

EVOLUTION ELITE
EVOLUTION SENIOR
SUPERFIBRA PLUS
SUPERFIBRA ULTRA



Broodmares:

EVOLUTION MATERNITY
SUPERFIBRA NATURE (see note)



Use **SUPERFIBRA NATURE** or **SUPERFIBRA CLASSIC** as a forage supplement to increase the fibre in the ration. Fibre will increase saliva production and gastric activity, thereby reducing the risk of ulcers.

Use **HORSE-SHIELD** to improve nutrient absorption (for example, simple sugars to reduce gas produced by their low absorption rate). Additionally, live yeast helps increase fibre digestibility and helps create an optimal environment in the equine digestive system.

NOTES : The selected Purina feeds should contain at least 15% fibre. High fat feeds are recommended, especially if they contain a balanced omega-3 to omega-6 ratio. **The NSC content** of each Purina feed is included in its fact sheet. This additional information is of particular interest when selecting a feed to help in the treatment, control or prevention of a specific equine pathology.

Choose a feed in a form that is easy to digest and assimilate for the animal such as multiparticle, extruded or pelleted feeds. Select feeds that contain a minimum of 15% fibre. The total ration should not exceed 8% fat (be careful not to confuse this percentage with the fat level on the label of the product).

Selection should also focus primarily on feeds containing pre- and probiotics, including complete yeast cell membranes, yeast culture and a mixture of live bacteria. Alternate feeds can also be considered according to the above-mentioned criteria and contain probiotics in the form of yeast culture.

Nutritional management should be assessed and changed if necessary by increasing the frequency of meals per day and by feeding hay a minimum of 30 minutes before concentrates. It should also be recommended to use a slow feeder hay net to slow consumption and increase salivation, or to offer hay free choice to allow for continual consumption.

SuperFibra Nature is an interesting complement to the above-mentioned feeds because of its high fibre and calcium-rich alfalfa content which have a buffering effect on gastric acid.

The monitoring of the animal's medical condition as well as dietary recommendations are essential to improve the animal's health. Results following changes and treatment may vary from one animal to the next and additional changes may be necessary.

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

EQUINE INSULIN RESISTANCE

ETIOLOGY

- IR can be described as a reduced sensitivity or failure of cells to respond properly to physiologically “normal” levels of insulin. This may result in decreased insulin action, compensatory increases in insulin production by the pancreas, decreased glucose uptake by cells, decreased glucose production by the liver, and increased fat mobilization.
- Several interrelated mechanisms that impact endocrine signalling pathways are thought to contribute to development of insulin resistance:
 - Elevated release of adipocyte-derived pro-inflammatory signalling molecules which impair insulin signalling
 - Hypercortisolism (high circulating levels of cortisol, which stimulates macrophages to release adipokines into circulation as well as expand regional adipose repositories)
 - Release of free fatty acids from regional adipose repositories into circulation, contributing to adipokine production and hepatic IR
- In addition to nutritional interventions, an appropriate exercise regimen can play a key role in improving insulin sensitivity.
- Horses routinely consuming calories in excess of their maintenance and exercise requirements will result in increase in body condition and weight gain.
- For horses that are obese but not IR, the level of calorie intake is more important than the source of those calories.
- For horses that are obese and IR, the source of calories has a huge impact on the horse’s health and is equally important as the daily caloric intake (e.g. calories from fat and fibre vs. nonstructural carbohydrates).

RISKS AND/OR COMPLICATIONS

- Obese horses are at increased risk of stress on the heart and lungs, greater risk of laminitis or founder and increased risk of developmental orthopedic (bone and joint) problems in young, growing horses.
- Overweight horses are subject to more strain on feet, joints and limbs, predisposing obese horses to or worsening symptoms of arthritis.
- Overweight horses also experience less efficient dissipation of body heat
- Fat buildup around key organs may interfere with endocrine regulation of normal body functions, contributing to lower reproductive efficiency, lethargy, and aberrant glucose and insulin metabolism.
- Some overweight horses may have metabolic disorders such as Cushing’s Disease (PPID), hypothyroidism, or muscle disorder(s).
 - This should be carefully investigated by a veterinarian as nutritional and medical interventions may be necessary to manage these disorders.

MANAGEMENT RECOMMENDATIONS

- The best way to keep horses from becoming overweight is to control intake with an appropriate exercise program. Horses on lush pasture should be fitted with a grazing muzzle or placed in a dry lot and fed grass hay.

DIETARY RECOMMENDATIONS

- Many obese horses cannot tolerate high levels of starch and sugar in the diet and should be maintained on rations that are low in calories and contain higher levels of digestible fibre.
- Horses in training that are “easy keepers” should be fed lower calorie feeds, but in sufficient amounts to meet dry matter and all other nutrient requirements.
- Grass hay is recommended over legume hay due to lower calorie content.
- It is important to know exactly how much feed is being fed. Therefore, a scale should be used to determine the weight of a given meal or daily ration of hay and concentrate to avoid over or underfeeding.
- Monitor weight gains or losses using a weight scale, weight tape or Body Condition Scoring System—and adjust feeding rate as necessary.
- Providing a reduced calorie, good quality balanced diet with appropriate amino acids, vitamins and minerals is essential to supporting appropriate weight loss, while maintaining lean tissue mass. Feeding rates should be determined according to the target or ideal body weight and body condition score, as opposed to the current (obese) body condition. All changes should be made gradually.
- Overweight horses that are insulin resistant may benefit from the supplementation of magnesium and chromium in the diet, which could improve sensitivity to insulin. Note: Chromium is not yet approved as an ingredient in horse feeds, but is available in some supplements.
- Always provide good quality grass hay, and free choice access to salt and water.

SUGGESTED PURINA PRODUCTS:

FEED NOTES:

- Maximize fats and digestible fibre for safe energy/calories; control starch/sugar intake while enhancing pre-cecal digestion to help avoid the effects of high blood sugar and starch overload.
- Vitamin E, zinc, magnesium and chromium can be helpful in managing carbohydrate-related disorders.

Recommended:

SUPERFIBRA INTEGRI-T

Alternatives:

SUPERFIBRA PLUS SUPERFIBRA ULTRA

Supplement:

HORSE-SHIELD

can be used to improve nutrient absorption and promote an ideal pre-cecal environment (optimize the pH) in the horse.

HORSE PLUS

can be used to supplement B vitamins. Some studies have shown the benefits of vitamin B supplementation for patients with insulin resistance. Since some B vitamins are involved in the metabolism of energy, supplementation is beneficial for optimizing sugar absorption and the utilization of sugar for energy production.



If the horse needs to lose weight and/or is insulin resistant: **EQUILIBRIUM EQUILIZER** is recommended. However, if the hay or pasture is below 12% protein, **EQUILIBRIUM OPTIMAL** is a better option.

In both these cases, the addition of an omega-3 source is recommended. The horse's diet should include a complete supplement providing all necessary vitamins, minerals and protein. If the horse needs extra calories (e.g. a horse at work), a source of digestible fibre may be added.

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a “Minimum” and a “Purina Superior”. The “Minimum” meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The “Purina Superior” is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply “Minimum” is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the “Purina Superior” level is paramount to ensure an optimal level of performance and immunity.

EQUINE LAMINITIS

ETIOLOGY

- Obesity and insulin resistance (equine metabolic syndrome) are the two most common predispositions for laminitis in horses and ponies.
- Circumstances that have been identified as high risk for developing acute laminitis include:
 - Overloading the hindgut with starch, sugar and fructans, which ferment rapidly (grain overload or pasture associated laminitis)
 - Retention of fetal membranes
 - Gastroenteritis
 - Mechanical injury which can be further exacerbated by increased weight bearing due to obesity
- Starch, sugar and rapidly fermentable carbohydrates that reach the hindgut are rapidly fermented, resulting in an increase in lactic acid production.
- Acidosis causes the death of many beneficial bacteria, releasing endotoxins, exotoxins and vasoactive amines, which in turn results in microvascular dysfunction (hypertension), which may compromise blood flow to peripheral tissues.
- Additionally, in conjunction with an IR state, chronic mild hyperglycemia can also influence vascular endothelial tissue, contributing to vascular dysfunction.
- Soft tissue in the hoof capsule is highly susceptible to damage resulting from microcirculatory dysregulation.
- Older horses that are overweight may be insulin resistant or suffer from PPID.
- Horses with either condition must have their weight and intake at every meal strictly monitored.

SYMPTOMS

- Many horses with chronic laminitis are overweight, cresty-necked and have additional areas of fat deposition.

MANAGEMENT RECOMMENDATIONS

- If lush pasture is available, horses with laminitis or prone to laminitis should be fitted with a grazing muzzle to prevent excess consumption of forage that contains high levels of fructans (plant sugars). If a muzzle is not an option, placing the horse in a dry lot is preferable to lush pasture.
- Strict weight control and appropriate exercise as can be tolerated is beneficial to the laminitic horse.
- Hoof trimming and/or corrective shoeing every three to four weeks is imperative, particularly in horses that have suffered rotation of the coffin bone. Horses with laminitis fare best when left turned out round the clock once the acute phase has passed.

DIETARY RECOMMENDATIONS

- Horses prone to laminitis or suffering from the disease should be fed total diets with controlled levels of starch and sugar.
- Horses with laminitis should be fed rations well fortified with vitamins/minerals and essential amino acids to help with repair of the hoof wall and supporting structures.
- Horses that have suffered from laminitis should not be fed diets rich in starch and sugar, as sensitivity to increases in blood sugar and insulin may be present in these horses.
- Some horses may benefit from supplemental magnesium and chromium, both of which assist in increasing sensitivity to insulin.
- Always provide a low NSC good quality grass forage, free choice access to salt and clean, fresh water.

SUGGESTED PURINA PRODUCTS:

FEED NOTES:

- Ensure appropriate levels of vitamins, minerals and quality amino acids for hoof reconstruction; control starch and sugar intake due to insulin insensitivity and provide highly digestible fibre.
- It is important to determine if the condition is caused by Cushing's disease or insulin resistance. If this is the case, please refer to the condition fact sheet.

During the recovery period and if the horse is obese, **EQUILIBRIUM EQUILIZER** is recommended. If the hay or pasture is below 12% protein, **EQUILIBRIUM OPTIMAL** is proven to be a better option. In both cases, supplementing with **BMZ** is recommended.

Once recovery is complete, the following feeds are recommended for their fibre content and omega-3 and -6 ratios.

Recommended:

SUPERFIBRA INTEGRI-T
 ou **SUPERFIBRA CLASSIC**
 (with another source of omega-3s)



Alternatives:

SUPERFIBRA PLUS
SUPERFIBRA ULTRA
EVOLUTION SENIOR
EVOLUTION ELITE



NOTE: an obese horse can continue with **EQUILIBRIUM EQUILIZER** or **OPTIMAL** at the Purina Superior level.

A supplement fortified in biotin, methionine and zinc, which are all involved in the growth and integrity of the horse's hoof, is highly recommended. Purina's **BMZ** supplement can be used to promote hoof integrity.

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

EQUINE METABOLIC SYNDROME

ETIOLOGY

- Insulin resistance is the cornerstone clinical abnormality that underlies the mechanisms responsible for equine metabolic syndrome.
 - It is a leading risk factor for the development of laminitis in horses and ponies.
- Horses and ponies that are characterized with EMS tend to be highly sensitive to the consumption rate of nonstructural carbohydrates (starches, soluble sugars, and fructans).

SYMPTOMS

- Other abnormalities that characterize this syndrome include history of laminitis or predisposition to the disease, presence of abnormal growth rings on the hooves, and generalized obesity or regional adiposity (cresty neck, adipose pockets at tailhead, in prepuce or near the mammary gland, and near the shoulders).
 - These animals are often referred to as “easy keepers.”
 - It should be noted that not all obese animals are insulin resistant, and not all insulin resistant animals are obese.
- EMS-affected horses/ponies may also exhibit elevated inflammatory mediators in circulation and adipose tissue, proclivity for arterial hypertension, infertility in mares, hypertriglyceridemia and hyperleptinemia.

MANAGEMENT RECOMMENDATIONS

- The best way to keep horses from becoming overweight is to control intake combined with an appropriate exercise program.
- Horses on lush pasture should be fitted with a grazing muzzle or placed in a dry lot and fed grass hay.
- Monitor weight gains or losses using a weight scale, weight tape or body condition scoring system—and adjust feeding rate as necessary.

DIETARY RECOMMENDATIONS

- Many obese horses cannot tolerate high levels of starch and sugar in the diet and should be maintained on rations that are low in calories and contain higher levels of digestible fibre.
- Horses in training that are “easy keepers” should be fed lower calorie feeds, but in sufficient amounts to meet dry matter and all other nutrient requirements.
- Grass hay is recommended over legume hay due to the lower calorie content.
- Providing a reduced calorie, good quality balanced diet with appropriate amino acids, vitamins and minerals is essential to supporting appropriate weight loss, while maintaining lean tissue mass.
- Feeding rates should be determined according to the target or ideal body weight and body condition score, as opposed to the current (obese) body condition. All changes should be made gradually.
- Overweight horses that are insulin resistant may benefit from the supplementation of magnesium and chromium in the diet, which may improve sensitivity to insulin.
 - Note: Chromium is not yet approved as an ingredient in horse feeds, but is available in some supplements.
- Always provide good quality grass hay, and free choice access to salt and water.
- It is important to know exactly how much feed is being fed. Therefore, a scale should be used to determine the weight of a given meal or daily ration of hay and concentrate to avoid over or underfeeding.

SUGGESTED PURINA PRODUCTS:

FEED NOTES:

- Maximize the use of fats and digestible fibre as sources of safe energy/calories; control starch and sugar intake while enhancing pre-cecal digestion to help avoid the effects of high blood sugar and starch overload.
- Magnesium, vitamin E, zinc and chromium can be helpful in managing insulin resistance and equine metabolic syndrome.
- Because EMS is a syndrome, follow the recommendations for the two primary diseases: Cushing’s disease and insulin resistance (overweight).

Recommended:

Feed a complete vitamin and mineral supplement with low calorie input:

EQUILIBRIUM EQUILIZER



Alternative:

If an extra source of calories is needed (horse at work):

SUPERFIBRA INTEGRI-T

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a “Minimum” and a “Purina Superior”. The “Minimum” meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The “Purina Superior” is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply “Minimum” is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the “Purina Superior” level is paramount to ensure an optimal level of performance and immunity.

EQUINE PROTOZOAL MYELOENCEPHALITIS (EPM)

ETIOLOGY

- Equine Protozoal Myeloencephalitis is a common neurological disease. In the late 1980s, the organism was identified as *Sarcocystis neurona* and an antibody test was developed.
 - *Sarcocystis falcutula* has also been identified as a potential cause of the condition.
- *Sarcocystis neurona* is now known to be present throughout the Western Hemisphere. The opossum has been determined to be a host within the cycle, with birds acting as intermediaries for the parasite. The incubation period for the disease is unknown.
- Diagnosis of EPM is based upon finding antibodies or, more recently, a DNA detection test from either blood or cerebrospinal fluid.

SYMPTOMS

- EPM affects different neurons throughout the nervous system and can result in dragging or spastic gaits.
 - One side of the body may be affected, but not the other.
 - If it affects the cranial nerves, the horse may have problems eating or drinking, have facial twisting, or undergo changes in the position of the eyes and ears.
- Severely affected horses may become recumbent and have seizures.

MANAGEMENT RECOMMENDATIONS

- Exercise should continue to prevent atrophy so long as the horse is not a threat to itself or its handlers/riders.
- Turn out horses recovering from EPM alone or with a nonaggressive horse, weather permitting.

DIETARY RECOMMENDATIONS

- Controlled starch and sugar, high (soluble) fibre and added fat are indicated since there is an increased incidence of digestive disturbances (diarrhea) as a side effect of treatment.
- Supplemental folic acid and vitamin E have been found to aid in nerve healing and should be included in the daily regimen.
- High-quality, highly palatable forage should be fed to help support maintenance of body condition and prevent excessive weight loss.
- High-quality protein (essential limiting amino acids) is required to help rebuild damaged nerve and muscle tissue.

SUGGESTED PURINA PRODUCTS:

FEED NOTES:

- A low starch and sugar, high fibre and added fat diet is indicated.
- Provide for high-quality proteins (amino acids), folic acid and vitamin E to help rebuild nerve and muscle tissue.
- Consider the use of a vitamin B supplement containing folic acid and cobalamine. These nutrients have been shown to influence the recovery of the equine nervous system and the quality of nerve impulses in horses.

Recommended:

EQUILIBRIUM TRIMAX
EVOLUTION ELITE
EVOLUTION SENIOR
SUPERFIBRA INTEGRI-T



These choices fully meet dietary recommendations for this condition and are strongly recommended. Their 5:1 omega-6 to omega-3 ratio is a strong aid in the management of this condition. These feeds also contain **HORSE PLUS**.

Look for feeds containing Horse Plus or add this supplement to the ration to maximize folic acid, vitamin E and vitamin C intake.

If the daily ration does not meet the Purina Superior recommendations, the addition of **EQUILIBRIUM EQUILIZER** or **OPTIMAL** is indicated to balance the vitamins and minerals. Optimal is preferred to improve the horse's protein intake.

For this condition, it is critical to follow the Purina Superior recommendations (that are higher than the NRC recommendations).

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

EXCITABLE BEHAVIOUR IN HORSES

ETIOLOGY

- Horses that are overfed and underworked, particularly when stalled, may exhibit excitable behaviour.
- A large part of the problem can be attributed to the diet and feeding behaviour of the stabled horse.
 - Instead of grazing for 16 to 18 hours per day, the stabled horse may spend as little as 1 to 2 hours per day engaged in feeding activity.
- Long intervals between meals where the horse is confined and idle have been associated with the occurrence of behavioural problems and may also contribute to the formation of gastric and colonic ulcers.
- Many horses in training are traditionally fed large quantities of grain relative to forage components of their ration, in an effort to meet increased caloric requirements, as grains are typically more energy dense than forages.
 - Feeding large amounts of grain in a single meal can lead to starch and sugar overload in the hindgut and can result in serious gastrointestinal disturbances (excessive gas production, acidosis) and metabolic disorders such as colic, laminitis and insulin resistance.
- Grain meal feeding is linked to an increase in serotonin, a brain neurotransmitter that modulates mood, activity and alertness.
 - High serotonin levels observed after eating meals high in starch have been implicated in expressions of behaviour described as sugar “highs” or “hot” seen in some horses following a grain meal high in starch.

SYMPTOMS

- Horses exhibit stereotypic behaviours such as stall walking and weaving, as well as vices such as cribbing and wood chewing, as a means to relieve stress.

DIETARY RECOMMENDATIONS

- To support athletic performance and glycogen repletion after an intense exercise bout, providing highly palatable, energy-dense concentrates with controlled starch and sugar in addition to good quality forage is a viable solution.
- As with any change in a horse’s diet, additions or increases in dietary concentrates should be done gradually, and large daily rations should be broken up into multiple evenly spaced meals, and the size of any given meal should never exceed 0.5% of the horse’s body weight.
- Ingredients like vegetable oils and soluble fibres, most notably beet pulp, and soybean hulls do not contain high levels of starch and sugar and can be blended into the ration to help increase its digestible energy/caloric intake without increasing the risk of starch and sugar overload.
- Fats and fibres do not result in large increases in blood glucose. Therefore, rations where the total dietary (hay or forage + grain or supplement products) DE comes predominantly from fat and digestible fibre help decrease the occurrence and degree of excitable behaviours associated with the diet, and grain concentrates in particular.

SUGGESTED PURINA PRODUCTS:

FEED NOTES:

- Minimize starch and sugar intake by utilizing fats and soluble fibre as safe sources of calories/energy that do not produce a high glycemic response.
- The addition of Horse Plus (B1 complex) helps regulate energy levels and promotes concentration.
- A horse with a nutritional deficiency or receiving a diet that is not well balanced (below recommended levels) is often more easily excitable.
- **VERY IMPORTANT:** Check the horse's level of hydration. Inadequate hydration is often the cause of excitability.

Recommended:

**SUPERFIBRA PLUS
SUPERFIBRA ULTRA
SUPERFIBRA INTEGRI-T
EQUILIBRIUM TRIMAX**



Alternatives:

**EVOLUTION SENIOR
EVOLUTION ELITE
EVOLUTION MATERNITY**



Alternate choice:

SUPERFIBRA CLASSIC



Add 30 to 60 grams of salt to the daily ration depending on the horse's hydration.

Supplement: The addition of **HORSE PLUS**, a fortified vitamin B supplement is recommended for this condition as it promotes focus and the metabolism of energy.

NOTES: A veterinary exam is recommended for anxious or excitable horses to eliminate possible medical conditions that could cause such behaviour.

These preliminary measures will help choose the appropriate feed from Purina's line of products.

When choosing a feed, consideration should be given to the horse's temperament and use (sport, pleasure, riding school, etc.) as well as the horse's body condition.

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

HYPERKALEMIC PERIODIC PARALYSIS

ETIOLOGY

- Hyperkalemic periodic paralysis (HYPP) is an inherited (autosomal dominant trait) muscle disease. It is caused by a genetic defect that disrupts a protein that forms the sodium ion channel, a tiny gateway in the membrane of muscle cells.
 - The genetic defect disrupts the channel's normal opening and closing such that uncontrolled sodium influxes occur. These influxes in turn change the voltage current of muscle cells, causing uncontrolled muscle twitching or profound muscle weakness.
 - High levels of potassium in the blood usually are present when the disruptions in the sodium ion channel occur. At the same time, potassium leaks out of the cell, affecting the voltage current after contraction. The potassium remains in the extra-cellular fluid, preventing the muscle cell from relaxing.
- The condition is found in Quarter Horses, or other breeds like Paints and Appaloosas, where Impressive AQHA #0767246 is found in the pedigree.
- Note: Acetazolamide is now approved by AQHA as a therapeutic medication, subject to specific rules.

SYMPTOMS

- HYPP is characterized by muscle weakness, sporadic tremors and twitching (fasciculation), difficulty chewing and swallowing, collapse/recumbency, paralysis, and death in severe cases.

FOR MILD EPISODES

- Exercise the horse, either by walking or longeing. Exercise stimulates adrenalin, which helps replace potassium inside the cells.
 - Use caution because the horse could stumble and fall while sustaining muscle tremors.
- Supplement diet with grain (oats, dry corn-oats-barley [COB] or light corn syrup) as a source of glucose. Glucose stimulates the release of insulin and promotes potassium uptake by cells.

FOR SEVERE ATTACKS

- Instruct horse owners to seek immediate veterinary attention.

MANAGEMENT RECOMMENDATIONS

- A DNA test should be used to confirm the status so that appropriate treatment can be administered.
- The horse should be turned out as much as possible and/or placed on a regular exercise program.
- Do not train or work the horse during peak post-prandial plasma K⁺ concentration times (usually about 2–5 hours after a large meal).
- Other factors such as sleep, resting after exercise, physical stress, weaning, transport, surgery, anaesthesia, fasting, and dietary changes have been associated with HYPP symptoms.

DIETARY RECOMMENDATIONS

- A horse suspected of being N/H or H/H should be on a low potassium diet (less than 1% in total diet and no more than 30 g potassium in any given meal). More realistically, we aim for 1.1% in total diet (with a range of 0.6 to 1.5%) or 138 grams of potassium per day, without exceeding 33 grams per meal to avoid an overload.
- In most horse diets, forage is the major dietary source of potassium.
- Feed grass hay but NOT orchard grass hay, which is high in potassium. Focus on 2nd and 3rd cuts and avoid 1st cut hay as it has a tendency to be richer in potassium, especially in cases of cold and humid springs. Avoid feeding legume hays (alfalfa and clover).
- It is recommended to have forage tested for actual potassium content. Soaking the hay may be beneficial to leach out some of the potassium when dealing with higher potassium hays.
- Do not feed electrolytes containing potassium.
- Avoid feeding high levels of cane molasses, soybean meal or bran mashes as these may contain high levels of potassium.
- Small, frequent meals should be provided at equal intervals throughout the day to help maintain more consistent potassium levels. At the very least, serve three meals a day with 8 hours between meals (this means 6 AM, 2 PM, and 10 PM). Slow hay feeders will help to spread out the daily forage intake. Non-molasses beet pulp can be used as a hay replacer when limited to high potassium hays.
- Avoid fasting or long intervals between meals as this can precipitate clinical symptoms.
- Horses fed a greater than 1.1% potassium diet over time (14 days) appear to adapt and have less severe symptoms after meals. Change diet components slowly, especially when the new diet consists of a higher potassium hay. Take at least 14 days to make the change.

SUGGESTED PURINA PRODUCTS

FEED NOTES

- Control circulating levels of potassium by limiting potassium intake.
- Increased nonstructural carbohydrate intake will stimulate insulin release which promotes potassium uptake by cells.

Recommended:

EQUILIBRIUM PRO PLUS
(0.85% potassium)

Alternatives:

Hulless oats with **EZ-BALANCE** (1%)
SIMPLICI-T CONCEPT

Supplement:

Consider using **PUR-ATHLETE**
as a high-calorie source



FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

MALIGNANT HYPERTHERMIA

ETIOLOGY

- Malignant hyperthermia (MH) is a genetic disorder (autosomal dominant trait) and may occur in conjunction with type 1 PSSM.
- MH occurs in Quarter Horse bloodlines (with a high frequency in two specific lines, including the Impressive line), and horses are generally mature before exhibiting clinical signs.

SYMPTOMS

- Clinical symptoms include elevated body temperature (may be life-threatening) along with an episode of tying up or under anesthesia, metabolic failure, and death following a bout of tying up, particularly in horses with type 1 PSSM in addition to MH.

FOLLOWING A SEVERE EPISODE

- Turn the horse out for 2 weeks.
- Longe once daily for 3 to 5 minutes at a walk and trot. Gradually increase by 2 minutes per day.
- If stiffness is observed, stand the horse for 1 to 2 minutes and then resume walking to see if the stiffness persists.
- If stiffness persists, stop; if not, resume walking for 2 minutes and then resume trotting.
- When the horse can trot for 15 minutes, provide a 5-minute break at a walk and gradually increase walking and trotting after this.
- Once the horse has reached 30 minutes of trotting on a longe line (with a break at 15 minutes), then begin to ride for 20 to 30 minutes and gradually increase duration or intensity of exercise.
- It should take at least three weeks of exercise before the horse is ridden.
- Keeping horses aerobically fit increases oxidative metabolism and is the best prevention, in concert with an appropriate diet, for further episodes.

MANAGEMENT RECOMMENDATIONS

- Consumption of high levels of fructans (plant sugars) can exacerbate clinical symptoms; therefore, horses should be kept off "lush" pastures, new pasture growth (leaves less than 6" high from the ground) and pasture that has been under stress (drought, frost). Depending on management or facility logistics, horses can be muzzled or turned out in a dry lot to limit grass intake and facilitate voluntary exercise.
- In addition to nutritional intervention, an appropriate turnout and regular exercise program are essential to successful management of horses with PSSM.
- Minimize stress and provide regular routine with exercise, turnout and feeding.
- Turn out in large areas, preferably with other horses.
- Exercise therapy consists of daily turnout and as little stall rest as possible. Exercise should be introduced gradually, starting with 3 to 5 min of walk/trot on a longe line or under saddle, working up to 15 min. If no increases in creatine kinase (CK) are evident, the submaximal workload can be gradually increased.
- When the horse can be worked for 30 minutes without difficulty, active riding can be initiated.

DIETARY RECOMMENDATIONS

- Nutritional and management recommendations for Malignant Hyperthermia mirror those for horses with PSSM.
- The majority of the diet should be provided by a consistent supply of high-quality forage such as grass or grass/legume mix hays with controlled starch and sugar content. Hay analysis is strongly recommended as nutrient content of forage cannot be determined otherwise.
- Maintaining a balanced diet while minimizing total dietary (hay or forage + grain or supplement products) starch and sugar intake and maximizing fat and fibre intake is recommended. This can be achieved by providing a majority of the daily calories from fat and digestible fibre and limiting energy sourced from nonstructural carbohydrates. A low calorie protein, vitamin and mineral ration balancer may be used to ensure all nutrient requirements are met without introducing excess energy.
- Fat supplements of vegetable oil, rice bran or corn oil can be used. The rate of 1 lb of fat/1000 lb horse can be accomplished with 2 cups of oil mixed with a soluble fibre such as alfalfa cubes or non-molassed beet pulp. These recommendations must be modified depending on the individual caloric needs of the horse.
- For horses that are obese, minimizing the caloric density of their ration is needed to facilitate weight loss, which can be difficult with high levels of dietary fat. For these horses, rather than providing high levels of supplemental fat to their diet, fasting prior to exercise (~6 hrs) helps promote increases in plasma-free fatty acids and may help alleviate challenges with energy metabolism in these horses.
- Dietary supplementation with vitamin E (600 to 2000 IU/day) may be beneficial.
- Due to insulin hypersensitivity, chromium supplementation to PSSM horses is contraindicated.
- Affected horses also exhibit a sensitivity to potassium.
- Changes in diet should be made gradually, over a minimum of two weeks, to allow for adaptation and reduce the risk of digestive upset.
- Salt should be available free choice. Minerals may be offered.
- Minimize stress and provide a routine with exercise, turnout and feeding.

SUGGESTED PURINA PRODUCTS:

FEED NOTES:

- Feed a low, controlled starch and sugar diet with a majority of the digestible energy coming from fat and digestible fibre.
- Supplemental vitamin E may be beneficial.
- Due to possible insulin hypersensitivity, chromium supplementation is contraindicated.

UNDERWEIGHT HORSES

Recommended:

SUPERFIBRA INTEGRI-T

with an added source of omega-3.

SUPERFIBRA CLASSIC

with an added source of fat and omega-3.



Depending on the quantity of feed offered, **EQUILIBRIUM EQUILIZER** or **OPTIMAL** is recommended to fortify the ration to meet the Purina Superior recommendations.

A supplement such as **EQUI22** can replace Equilizer or Optimal to reduce calcium and phosphorus levels in the ration. Since the use and absorption of potassium are indirectly related to calcium, Equi22 may be a better choice to reduce the risk of seizures while supplementing essential nutrients.

TYPICAL/OVERWEIGHT HORSES

Recommended:

EQUILIBRIUM EQUILIZER **EQUILIBRIUM OPTIMAL** or **EQUI22**



It is recommended to add two cups of oil to the daily ration to promote insulin response.

Preferably use an oil high in omega-3 or a vegetable oil with added ground flaxseed. These can also be replaced by small amounts of **PUR-ATHLETE** (less than one cup per day).

Forage analysis is recommended to determine sugar (fructan) levels. Soaking hay before serving is also recommended to reduce its carbohydrate content (since they are water soluble).

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

NEGLECTED HORSES, WEIGHT LOSS/POOR CONDITION

UNDERSTAND THE HORSE'S CONDITION

The first step when recuperating a neglected horse, should be to have a veterinarian conduct a complete physical exam of the horse to check for immediate concerns, debilitating diseases and poor dentition and overall health. Take a blood sample to check for chronic infections, liver or kidney dysfunction. This will reveal if there is a serious disease that requires more advanced care and treatment. If no abnormalities are found, the failing horse may be suffering

from malabsorption or other alterations in digestion. Horses over 20 years old may have reduced apparent digestibility of proteins, fibre and phosphorus.

You will also want to determine the body condition score (BCS) of the horse using the Henneke scale. This is an important indicator of the rehabilitation steps needed and will help you understand the severity of its weight loss. The horse can also be weighed to help determine its condition.

HEALTHY AGED HORSE

For healthy older horses that are losing weight, "senior" feeds which provide 12–14% protein, with restricted calcium (<1%) and slightly increased in phosphorous (0.3 - 0.5%) are the type of feeds to aim for (Evolution Senior). Crude fibre content of the feed should be above 7% and preferably 10% especially if the feed is designed to be fed without hay.

Processed feeds in a more digestible form (extruded, pelleted and multi-particle) containing yeast culture and added fat (5 to 10%) will maximize digestibility without increasing the risk

of colic (Evolution Senior). If the horse does not drink well, feeding water-soaked feeds (1–2 gallons of water per feeding with 1 to 2 oz of salt) may encourage water intake.

Serve a top-quality hay, preferably a straight grass or grass/alfalfa mix. Avoid straight alfalfa, the calcium content may exacerbate failing kidney condition. Avoid poor quality or high fibre hay.

MALNOURISHED HORSES

Horses with a BCS of 3 or higher can normally be brought to the target BCS of 5 in about six to eight weeks. These horses should be fed a balanced diet of at least 2% of their body weight in four or five feedings per day. A diet should be constituted of a minimum of 50% good quality hay and a maximum of 50% concentrate feed. The amount of feed can be gradually increased to 1-1.25% of body weight with hay offered free choice and grain being fed two or three times a day (with a maximum. 5% body weight per feeding).

Complete feeds, such as Evolution Senior, are well suited to feed neglected horses due to their controlled starch, high digestibility and easy-to-chew attributes. Additionally, neglected horses are often salt-starved. Therefore, salt should be introduced gradually at one to two ounces per day and increased until it can be given free choice. At all times, fresh, clean water should be available.

STARVED HORSES

Horses with a BCS of 1 or 2 have experienced actual starvation. These situations typically happen over 60 to 90 days without feed or more often three to four months with very poor water and forage. Horses in these situations are often hypoglycemic and hyperkalemic due to muscle mass and fat loss. If the horse is able to get up and has lost less than 45–50% of its body weight, it can normally be rehabilitated. If it has lost 45–50% of its body weight and is not able to get up, be aware that the chances of successful rehabilitation may be reduced significantly.

ALFALFA HAY OPTION OR 50% HAY REPLACER (SUPERFIBRA CLASSIC AND SUPERFIBRA NATURE)

Quality alfalfa hay is a good base for a high-protein, low-starch diet. Frequent, small amounts of quality alfalfa hay should be fed, with the amount of alfalfa slowly increasing for each meal. The number of feedings should decrease gradually over 10 days, and after 10 to 14 days, the horse can be fed free choice. If the horse's dental condition is poor, alfalfa cubes or pellets or SuperFibra Nature may be used and soaked prior to feeding.

SENIOR HORSE FEED OPTION

Senior horse feeds with a controlled starch design, added amino acids, prebiotics and probiotics, balanced trace minerals and vitamins are a good option to give a neglected horse the nutrients it needs. The feed should be introduced at a rate of 0.5% body weight in several small feedings per day. Over a 10- to 14-day period, the amount of feed should

slowly increase per meal while the number of feedings gradually decreases. By the end of this period, the horse should be at a normal feeding rate according to feeding directions. The feed can also be soaked in warm water for up to 15 minutes to form a mash for horses with poor teeth.

NECESSARY ADDITIONAL CARE TO AID RECOVERY

➤ Deworming

➤ Vaccinations

➤ Hoof Care

RECOMMENDED PURINA PRODUCTS

FEED NOTES:

- All feeds should be introduced slowly and a proper transition over 1–3 weeks should be made.
- Prioritize highly concentrated feed in order to provide the horse with a high-calorie diet while leaving more room for hay in the total diet.

Recommended:

EVOLUTION MATERNITY
EVOLUTION SENIOR
EVOLUTION ELITE
SUPERFIBRA INTEGRI-T
EQUILIBRIUM TRIMAX
EQUILIBRIUM LEGEND XT
EQUILIBRIUM XCEL HD



SUPERFIBRA CLASSIC
 or **SUPERFIBRA NATURE**



may be used in part as a hay substitute.

Feed according to the Purina Superior recommendations. If the upper Purina guideline is not followed, consider adding a complete supplement such as **EQUILIZER** and the following specific supplements:

PUR-ATHLETE,
 a highly digestible source of fat and protein

HORSE PLUS,
 supports equine metabolism

HORSE-SHIELD,
 helps the digestion and absorption of nutrients.



If the Purina Superior guidelines are followed, the use of a supplement is not recommended.

NOTES: The selection and choice of possible Purina feeds when controlling and treating weight loss, associated or not with an underlying equine pathology, should be guided by a veterinary exam and blood test results. The symptoms and problems identified may be closely linked with weight loss or difficulty maintaining a proper healthy weight. It is important that the weight gain is done gradually and that it is monitored by a veterinarian to ensure consistency.

The choice should also take into account the animal's life stage, its activity level, its medical history, as well as the discipline it is performing in.

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

OSTEOCHONDRITIS DISSECANS (OCD) OR DEVELOPMENTAL ORTHOPEDIC DISEASE (DOD)

ETIOLOGY

- Osteochondritis dissecans (OCD) is a condition in young, rapidly growing horses that is classified as part of a group of conditions called Developmental Orthopedic Disease (DOD). It affects the bone and cartilage in joints during development.
- OCDs can occur in most all joints, but they occur most often in the hock, stifle and fetlock joints.
- Lesions develop in the cartilage and bone of joints in growing horses. OCD is when the lesion separates from the underlying bone.

OCD IS USUALLY CAUSED BY A COMBINATION OF SEVERAL FACTORS, INCLUDING:

1. Rapid growth and large body size
2. Nutrition: Diets that are high in energy or have an imbalance in trace minerals
3. Genetics: OCD may be partially inherited
4. Hormonal imbalances: Insulin and thyroid hormones
5. Trauma and exercise: Trauma (including routine exercise) is often involved in the formation and loosening of the OCD flap

SYMPTOMS

- Symptoms have been observed in 5 to 25% of horses across all breeds.
- Swelling in the joint, particularly in a young horse, is often the most common symptom of OCD that is initially observed. Signs of OCD have been observed in horses as young as 5 months of age but signs may not be seen until they begin work.
- The severity and location of OCD will determine the degree of lameness. Many horses suffering from OCD will be sound at a walk but show signs of lameness at a faster pace.

RISKS AND/OR COMPLICATIONS

- Veterinarian examination is recommended with any joint swelling or lameness in order to diagnose OCD and to rule out other causes. Your veterinarian may complete the following diagnostics:
 - Physical Exam
 - Lameness Exam
 - Radiographs

MANAGEMENT RECOMMENDATIONS

- It is important to maintain regular but not excessive levels of exercise for normal foals, weanlings and yearlings to aid in normal development and growth.
- When a horse has been diagnosed or is suspected to have OCD it is important to ensure they are given stall rest to prevent further damage to the inflamed or abnormal joint.

DIETARY RECOMMENDATIONS

- It is important to ensure that both the weanling/yearling and the pregnant/lactating mare are receiving a properly balanced diet with the required levels of vitamins and minerals to aid in preventing the development of OCD.
- A ration balancer can be used to ensure a balance of minerals including micros and macros -
- Excessive mineral supplementation can be as critical a problem as being deficient so a correct mineral ratio is needed. For example, the zinc: copper and calcium: phosphorous ratios.
- A diet low in NSC is necessary to ensure a feed that produces a low glycemic response.
- A feed that incorporates fat and fibre as an energy source is important to help minimize the amount of sugar and starch in the diet thereby reducing the chances of OCD.
- It is recommended to have your hay tested to ensure there is an accurate balance of nutrients in the grain ration to compliment the hay analysis.

SUGGESTED PURINA PRODUCTS

FEED NOTES:

- Minimize starch and sugar intake by utilizing fats and soluble fibre as safe sources of calories/energy that do not produce a high glycemic response
- A foal/yearling with a nutritional deficiency or receiving a diet that is not well balanced (incorrect ratios or below recommended levels) can be more prone to OCD
- A calorie blend designed to help minimize DODs by controlling insulin response
- Supplementation with a Ration Balancer can provide a higher level of fortification and balanced diet
- The addition of Horse Plus to support proper immune function and overall health
- Balanced amino acids with added lysine and methionine for improved muscle and joint development
- Pre and probiotics to promote healthy gut bacteria and protect against harmful bacteria
- Added Omegas for cognitive development and anti-inflammatory properties
- Always aim for an ideal body condition

Recommended for Broodmares:

**EVOLUTION MATERNITY
OMOLENE MATERNITY 300**



Recommended for Foal/Weanling and Yearlings:

**EVOLUTION JUVENILE
OMOLENE MATERNITY 300**



Ration Balancer:

EQUILIBRIUM OPTIMAL

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

OVERWEIGHT HORSES

Obesity in horses can lead to laminitis, colic, insulin resistance, overheating and numerous other health conditions.

Care must be taken with obese horses to:

- Provide quality nutrition in controlled portions to ensure overall health while reducing caloric intake
- Reduce weight at a slow to moderate pace to avoid causing other problems
- Increase fitness at a cautious pace to avoid injury

Providing owners with the proper weight management tools can help ensure the success of a weight-loss program for obese horses.

MANAGEMENT RECOMMENDATIONS

- Be patient. Slow and steady is the correct approach for reducing body weight and will help avoid stress and digestive upsets.
 - Increase exercise levels gradually as the horse becomes more fit. Don't overdo it.
 - Feed horses separately to better control and monitor feed intake.
 - Monitor weight gains or losses using a weight scale, weight tape or body condition scoring system—and adjust feeding rate as necessary.
 - Maximum targeted weight loss is 1 kg/100 kg BW/week (e.g. for an 1,100 lb horse: 1.5 lb/day).
 - Owners should work with veterinarians to develop a total health care program including vaccinations, deworming and dental care.
-

DIETARY RECOMMENDATIONS

- Many overweight horses cannot tolerate high levels of starch and sugar in the diet and should be maintained on rations that are low in calories and contain higher levels of digestible fibre. Horses in training that are “easy keepers” should be fed lower calorie feeds, but in sufficient amounts to meet dry matter and all other nutrient requirements.
- Ideally, never feed less than 1.5% of BW in long-stemmed fibre per day.
- Grass hay is recommended over legume hay due to lower calorie content.
- Always provide good quality grass hay, and free choice access to salt.
- Fresh clean water should be available at all times. Horses that have been exercised should be cooled out and rehydrated properly before being fed and before having access to unlimited water.
- It is important to know exactly how much feed is being fed. Therefore, a scale should be used to determine the weight of a given meal or daily ration of hay and concentrate to avoid excessive over- or underfeeding.
- Providing a reduced calorie, good quality balanced diet with appropriate amino acids, vitamins and minerals is essential to supporting appropriate weight loss, while maintaining lean tissue mass. Feeding rates should be determined according to the target or ideal body weight and body condition score, as opposed to the current (obese) body condition. All changes should be made gradually.

SUGGESTED PURINA PRODUCTS

OVERWEIGHT HORSES

If the hay has a protein content greater than 12% (on a dry matter basis), feed **EQUILIBRIUM EQUILIZER**. If less than 12% (DM), use **EQUILIBRIUM OPTIMAL**.

Provide 1.5% of BW in long-stemmed fibre (hay).



NORMAL BODY CONDITION

Recommended:

Use **SUPERFIBRA INTEGRI-T** when ideal body condition is reached.



Alternatives:

SUPERFIBRA CLASSIC
SUPERFIBRA PLUS
SUPERFIBRA ULTRA



Supplements:

Use **HORSE-SHIELD** to enhance pre-cecal environment and optimize pH.



FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a “Minimum” and a “Purina Superior”. The “Minimum” meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The “Purina Superior” is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply “Minimum” is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the “Purina Superior” level is paramount to ensure an optimal level of performance and immunity.

POLYSACCHARIDE STORAGE MYOPATHY

ETIOLOGY

- Polysaccharide storage myopathy (PSSM) is a genetic disease characterized as a glycogenosis or glycogen storage disease, of which there are two forms: type 1 or “classic” PSSM, and type 2.
- Type 1 PSSM is an autosomal dominant trait (only one copy of the gene is needed for horses to be affected) where a mutation in the glycogen synthase-1 (GYS1) gene is present.
 - Mechanisms resulting in type 2 PSSM have yet to be identified.
- Affected horses demonstrate excessive levels of abnormal amylase-resistant glycogen or polysaccharide (lesser degree of branching vs. normal glycogen) in skeletal muscle, as well as a hypersensitivity to the effects of insulin.
- Blood work may indicate elevated creatine kinase (CK) and aspartate aminotransferase (AST) activities in serum as well.
- Rest for a few days prior to exercise and/or sudden changes in diet, particularly increases in dietary nonstructural carbohydrates (NSC), are common triggering factors.

SYMPTOMS

- Clinical signs may include:
 - Atrophy in the shoulders and hindquarters (muscle wasting)
 - Painful stiff muscles
 - Reluctance to move or exercise intolerance
 - Gait abnormality
 - Weakness
 - Trembling after exercise
 - Sweating
 - A camped-out stance and hind limb stiffness
 - Difficulty rising
 - A reluctance to pick up feet
 - Lifting or stomping hind limbs
 - Cranky or sour attitude
 - Episodes of mild colic after exercise
- Symptoms typically begin around 2 to 3 years of age.
- Many PSSM horses are obese or described as “easy keepers.”

FOLLOWING A SEVERE EPISODE

- Turn the horse out for 2 weeks.
- Longe once daily for 3 to 5 minutes at a walk and trot. Gradually increase by 2 minutes per day.
 - If stiffness is observed, stand the horse for 1 to 2 minutes and then resume walking to see if the stiffness persists.
- If stiffness persists, stop; if not, resume walking for 2 minutes and then resume trotting.
- When the horse can trot for 15 minutes, provide a 5-minute break at a walk and gradually increase walking and trotting after this.
- Once the horse has reached 30 minutes of trotting on a longe line (with a break at 15 minutes), then begin to ride for 20 to 30 minutes and gradually increase duration or intensity of exercise.
- It should take at least three weeks of exercise before the horse is ridden.
- Keeping horses aerobically fit increases oxidative metabolism and is the best prevention, in concert with an appropriate diet, for further episodes.

MANAGEMENT RECOMMENDATIONS

- In addition to nutritional intervention, an appropriate turnout and regular exercise program are essential to successful management of horses with PSSM.
- Minimize stress and provide a regular routine with exercise, turnout and feeding.
- Turn out in large areas, preferably with other horses.
- Exercise therapy consists of daily turnout and as little stall rest as possible. Exercise should be introduced gradually, starting with 3 to 5 min of walk/trot on a longe line or under saddle, working up to 15 min. If no increases in creatine kinase (CK) are evident, the submaximal workload can be gradually increased.
- When the horse can be worked for 30 minutes without difficulty, active riding can be initiated.

DIETARY RECOMMENDATIONS

- Nutritional recommendations for PSSM mirror those for horses with Malignant Hyperthermia.
- The majority of the diet should be provided by a consistent supply of high-quality forage such as grass or grass/legume mix hays with controlled starch and sugar content.
 - Hay analysis is strongly recommended as nutrient content of forage cannot be determined otherwise.
- Maintaining a balanced diet while minimizing total dietary (hay or forage + grain or supplement products) starch and sugar intake and maximizing fat and fibre intake is recommended.
 - This can be achieved by providing a majority of the daily calories from fat and digestible fibre and limiting energy sourced from nonstructural carbohydrates. A low calorie protein, vitamin and mineral ration balancer may be used to ensure all nutrient requirements are met without introducing excess energy.
- Fat supplements of vegetable oil, soybean oil or ground or extruded flaxseed can be used. One pound of fat/1000 lb horse can be accomplished with 2 cups of oil mixed with a soluble fibre such as alfalfa cubes or non-molassed beet pulp. These recommendations must be modified depending on the individual caloric needs of the horse.
- For horses that are obese, minimizing the caloric density of their ration is needed to facilitate weight loss, which can be difficult with high levels of dietary fat. For these horses, rather than providing high levels of supplemental fat to their diet, fasting prior to exercise (~6 hrs) helps promote increases in plasma-free fatty acids and may help alleviate challenges with energy metabolism in these horses.
- Dietary supplementation with vitamin E (600 to 2000 IU/day) may be beneficial.
- Due to insulin hypersensitivity, chromium supplementation to PSSM horses is contraindicated.
- Consumption of high levels of fructans (plant sugars) can exacerbate clinical symptoms; therefore, horses should be kept off "lush" pastures, new pasture growth (leaves less than 6" high from the ground) and pasture that has been under stress (drought, frost).
 - Depending on management or facility logistics, horses can be muzzled or turned out in a dry lot to limit grass intake and facilitate voluntary exercise.
- Changes in diet should be made gradually, over a minimum of two weeks, to allow for adaptation and reduce the risk of digestive upset.
- Salt should be available free choice. Minerals may be offered.
- Nutritional recommendations for PSSM mirror those for horses with Malignant Hyperthermia.

SUGGESTED PURINA PRODUCTS:

FEED NOTES:

- Feed a low, controlled starch and sugar diet with a majority of the digestible energy coming from fat and digestible fibre.
- Supplemental vitamin E may be beneficial.
- Due to insulin hypersensitivity with PSSM horses, chromium supplementation is contraindicated.

UNDERWEIGHT HORSES

Recommended:

SUPERFIBRA INTEGRI-T

with an added source of omega-3.

SUPERFIBRA CLASSIC

with an added source of fat and omega-3.

Depending on the quantity of feed offered, the addition of

EQUILIBRIUM EQUILIZER

or **EQUILIBRIUM OPTIMAL**

is recommended to fortify the ratio

Supplement:

PUR-ATHLETE,

provides, a highly digestible source of fat and protein.



TYPICAL/OVERWEIGHT HORSES

Recommended:

EQUILIBRIUM EQUILIZER / EQUILIBRIUM OPTIMAL

It is recommended to add two cups of oil to the daily ration to promote insulin response. Preferably use an oil high in omega-3 or a vegetable oil with added ground flaxseed. Forage analysis (hay or pasture) is recommended to determine sugar (fructan) levels.

To make a rational choice when selecting a Purina feed to manage this equine pathology, it is essential to assess the **NSC content** of the feeds. The NSC content of each Purina feed is on its fact sheet which provides additional information of particular interest when selecting a feed to aid in the treatment, control or prevention of an equine pathology.

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

RECURRENT EXERTIONAL RHABDOMYOLYSIS

ETIOLOGY

- Recurrent exertional rhabdomyolysis (RER) is a genetic disease (autosomal dominant heritable trait) seen in several breeds, namely Thoroughbreds, Arabians, and Standardbreds, and tends to be more common in high-strung or nervous fillies.
- RER is characterized by chronic or recurrent bouts of “tying up” in fit horses, usually during submaximal training, and can also be triggered by stress or excitement.
 - RER is distinct from sporadic exertional rhabdomyolysis, which occurs when horses are exercised in excess of their fitness level and can be exacerbated or brought on by extreme environmental conditions (high heat and humidity), and/or electrolyte and energy imbalances.
- Clinical signs of RER or “tying up” include stiff painful muscles, lameness, sweating, shortened stride and exercise intolerance following onset of an exercise bout.
- Dysfunction of the sarcoplasmic reticulum surrounding skeletal muscle, which leads to abnormal calcium storage and release and subsequent prolonged muscle contraction and necrosis, is thought to be the underlying mechanism.

MANAGEMENT RECOMMENDATIONS

- Daily low stress exercise is essential, whether in the form of turnout, longeing or riding.
- Stall rest is not recommended following an episode of tying up. Complete stall rest is counterproductive and may increase the likelihood that the horse will resume tying up episodes when put back into training.
 - The initial muscle pain usually subsides within 24 hours of acute RER, and daily turnout in a small paddock can be provided at this time.
 - Subsequently, a gradual return to performance is recommended once serum creatine kinase and aspartate aminotransferase levels are within the normal reference ranges.
- Administration of dantrolene by a veterinarian ~ 1 hour prior to exercise may help with calcium regulation.
- Prevention of further episodes of RER in susceptible horses should include standardized daily routines and an environment that minimizes stress.

DIETARY RECOMMENDATIONS

- Added fat and fibre rations with controlled starch and sugar content, supplied primarily with good quality grass or grass/legume mix hay are most suitable for horses with RER.
- The diet should be fortified to include a balanced amino acid, vitamin and mineral content that complements the appropriate energy intake (energy requirements tend to be high for these horses).
- An added fat and digestible fibre ration while limiting dietary starches and sugar provides a safe and calm source of calories to support body condition and performance.
- Dietary supplementation with vitamin E (600 to 2000 IU/day) may be beneficial.
- Provide free choice access to salt and fresh, clean water at all times.

SUGGESTED PURINA PRODUCTS

FEED NOTES:

- Control starch levels and provide high fat and digestible fibre to maintain weight and calorie intake levels.
- Ensure balanced vitamin/mineral levels (added vitamin E and selenium) and electrolytes.
- Hydration plays a key role and should be monitored, especially during periods of intense activity and/or high temperatures.
- The addition of **HORSE PLUS** may help in controlling stress.
- Supplementation with **PUR-ATHLETE** can provide high levels of digestible fats.
- Always aim for an ideal body condition.

INCIDENTS DUE TO INSUFFICIENT TRAINING OR OCCASIONAL EXERTIONAL RHABDOMYOLYSIS

Prevention is not associated with nutrition, but an increase in antioxidants and better hydration may help.

RECURRENT EXERTIONAL RHABDOMYOLYSIS (RER)

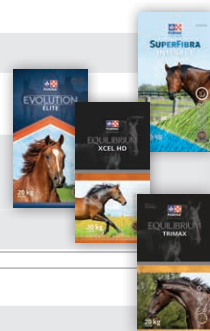
Stress and excitability are often implicated in the causation and should be taken into account. NSC levels must be controlled.

Recommended:

SUPERFIBRA INTEGRI-T

is a good choice, but for exercising and sport horses, choose

EQUILIBRIUM TRIMAX, EVOLUTION ELITE or EQUILIBRIUM XCEL HD



For high performance horses:

EQUILIBRIUM TRIMAX,

fed according to Purina Superior recommendations, is preferred because of its high fat and calorie content and low NSC levels.

If not, other options may include:

SUPERFIBRA ULTRA SUPERFIBRA PLUS

These options should also be fed at superior fortification levels.



FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

RENAL AND HEPATIC DISEASE

ETIOLOGY

- Renal disease is not very common in horses. Hepatic disease is slightly more common.
- Renal disease is usually brought about secondary to toxicities that cause necrosis to the kidneys. This can include:
 - Nephrotoxic drugs such as the aminoglycoside antibiotics, sulfonamides or non-steroidal anti-inflammatory drugs
 - Heavy metal poisoning such as lead, arsenic and mercury
 - Myoglobin accumulation from muscle breakdown in horses with recurrent exertional rhabdomyolysis or in those that sustain large muscle injuries and those that accumulate hemoglobin from blood destruction as with the ingestion of toxic plants such as dried or wilted red maple leaves
- Renal disease can also be caused by a lack of blood supply to the kidneys such as may occur with endotoxemia associated with colic or following sepsis.
- Renal or cystic calculi can cause renal failure.
 - Horses normally excrete excess dietary calcium in their urine instead of the feces as most other species do.
 - If kidney disease is present, renal and bladder calculi are more likely to occur, as well as an increase in blood calcium, which can be lethal.
 - Horses that graze sorghum species many times suffer from kidney and bladder problems.
- Chronic hepatic disease may be caused by ingestion of toxic substances. These may include plants such as Senecio and Kleingrass.
 - Mycotoxins, such as aflatoxin and fumonisin are also hepatotoxic.
- Some diseases, such as equine rhinopneumonitis, and obstructions of the biliary system can also cause liver disease.
- Hyperlipemia with fatty infiltration of the liver is seen commonly in ponies and is associated with obesity.

SYMPTOMS

- Clinical signs of renal and hepatic disease include:
 - Weight loss
 - Loss of appetite
 - Lethargy
 - Drinking more water
 - Jaundice (from hepatic failure)
 - Hepatoencephalopathy (from hepatic disease) due to decrease plasma concentration of branched-chain amino acids and aromatic amino acids as well as ammonia increase.

DIETARY RECOMMENDATIONS

HEPATIC DISEASE

- Horses with hepatic disease must be fed easily digested soluble carbohydrate sources and should be offered multiple feedings to maintain blood glucose levels homeostasis and reduce mobilization of body glycogen and fat. Added fat diets are not indicated.
- Legume hay should be avoided in the diet of horses suffering from hepatic disease because of high levels of aromatic amino acids.
- Horses with hepatic disease should be offered a diet with a protein source that has a high branched - chain to aromatic amino acid ratio.

- Horses with hepatic disease that are inappetant should be tempted with a variety of feedstuffs until their appetite returns. In horses with HE or for longer-term management, dietary modification to provide a diet without excessive protein and in which the ratio of BCAA:AAA is optimized should be fed. This will minimize AAA entry into the brain (where they can contribute to HE by acting as precursors for the inhibitory neurotransmitter serotonin as well as for false neurotransmitters). This ratio has been taken into consideration when developing our feeds and supplements.
- Horses with hepatic failure should be supplemented with oral B-complex vitamins and ascorbic acid as the liver is the site for vitamin C and niacin synthesis (Horse Plus).
- Feed grass forage rather than alfalfa with a vitamin/mineral supplement only to avoid feeding excess protein, calcium and phosphorus for both disorders.

- A feed containing beet pulp, corn, oats can form the mainstay of these diets. Simplici-T Fibra is a well-balanced feed for horses with hepatic failure.

KIDNEY DISEASE

- Horses with renal disease should be maintained on a strict diet to limit calcium, protein (8 to 10%) and phosphorus.
- Feeding legume hay (high in calcium) or excess protein does not cause kidney disease in horses that are healthy, but is not recommended for horses with renal or hepatic disease. Preferably use a good quality grass hay.
- Avoid feeds with beet pulp (high in calcium) and wheat bran (high in phosphorus) due to their high protein, calcium and/or phosphorus content.
- Use caution with salt supplementation as some horses may overeat salt with either of these conditions. It may be preferable to add one to two ounces of salt to concentrate ration daily.

SUGGESTED PURINA PRODUCTS

FEED NOTES

- Limit high intake of protein, calcium and phosphorus for both diseases
- Avoid high-fat diets
- Control salt intake
- Provide highly digestible soluble carbohydrates for hepatic disease.
- Supplement with oral B-complex vitamins and ascorbic acid for hepatic failure.
- Feed with grass forage and avoid legumes, beet pulp and wheat bran due to high protein, calcium and/or phosphorous content.

Recommended:

SIMPLICI-T FIBRA and **EQUILIBRIUM EQUILIZER**

for liver disease
with added **HORSE PLUS**.

SIMPLICI-T FIBRA

for kidney disease.

SUPERFIBRA NATURE

is also suitable



Supplement:

Consider using **EQUI22**
as a vitamin and mineral source
without added calcium or phosphorus.



NOTES: The selection of these Purina feeds meets the nutritional guidelines for the management of these equine diseases. These feeds are low in protein, fat, calcium and phosphorus. The addition of Horse Plus in these formulations provides the maximum requirements of B-complex vitamins, vitamin C (ascorbic acid), and vitamin E.

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

UNDERWEIGHT HORSES

ETIOLOGY

- Horses that are losing weight during competition are not receiving enough calories, or they may be overly stressed or unsound (experiencing pain or discomfort).
- Horses with gastric ulcers tend to not want to eat due to pain.
 - Treatment for ulcers should be initiated immediately upon diagnosis to support efforts toward weight gain. Refer to segment on gastric ulcers.
- Geriatric horses may be prone to muscle catabolism and therefore require higher amounts of quality protein in their diets.
- Young, growing horses have high energy requirements but care must be taken to balance nutrients (dry matter) and energy to avoid under or over growth that could impair the integrity of tissue development.
- Parasite infection can lead to weight loss and therefore under the guidance of a veterinarian horses should undergo regular fecal analyses for parasite load and be maintained on a regular deworming program accordingly.
- Reducing stress, providing dental care, providing deworming and increasing the quality and quantity of nutrients provided are the best recommendations for horses that need to gain weight and muscle mass.
- Nervous horses tend to fare better when fed feeds with controlled starch and sugar.
- Lactating broodmares have the highest energy requirements of all classes of horses and must consume approximately 3+% of their body weight daily to produce milk and maintain condition.
 - Extra care should be taken to avoid starch and sugar overload in the lactating mare.
- Reducing stress and increasing calorie intake are the best ways to help an underweight horse regain weight.
- Horses that lose weight for no apparent reason should be evaluated for other possible clinical conditions.

DIETARY RECOMMENDATIONS

- Increasing feeding frequency is one of the safest ways to increase feed consumption and calorie intake without increasing risk of starch and sugar overload in the hindgut.
- Never feed more than 0.5% of BW at one time.
- Feeds with added fat and soluble fibre work best for putting weight on thin horses.
- Horses that need to gain weight should be fed products that contain excellent quality protein and guaranteed amino acid levels.
- The best-quality forage should be obtained for feeding thin horses as it is most palatable and has the highest energy content.
- Pre- and probiotics, enzymes and other feed additives that enhance digestion are useful in adding weight to thin horses.
- Ideally, with the exception of maybe a young foal, never provide more feed than forage (hay).
- Make any changes over a minimum of 7–10 days.

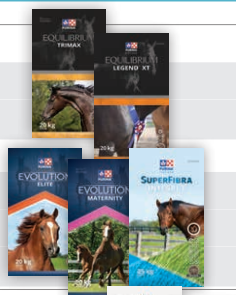
SUGGESTED PURINA PRODUCTS:

Recommended:

EQUILIBRIUM TRIMAX
EQUILIBRIUM LEGEND XT

or

EVOLUTION ELITE
EVOLUTION MATERNITY
SUPERFIBRA INTEGRI-T



Options:

SUPERFIBRA CLASSIC
or **SUPERFIBRA NATURE**

may be used as a hay supplement.

If using SuperFibra Classic, adjust the quantity of supplements accordingly.



Alternatives:

OMOLENE SPORT PLUS
OMOLENE PROGRESSION 200
OMOLENE MATERNITY 300
EVOLUTION SENIOR
EQUILIBRIUM XCEL HD



Supplement:

When attempting to put on weight, a fat and protein supplement can be used to replace part of the diet (caloric source).

PUR-ATHLETE

can improve fitness while providing a concentrated source of highly digestible fat and protein.



NOTES: When controlling and treating weight loss, associated or not with an underlying equine pathology, the choice of Purina feeds should be guided by a veterinary examination and blood test results. The symptoms and problems identified may be closely linked with weight loss or difficulty maintaining a proper healthy weight. It is important that the weight gain is done gradually and that it is monitored by a veterinarian to ensure consistency.

The selection of possible Purina feeds in the control and treatment of weight loss, associated or not with an underlying equine pathology, should also take into account the animal's life stage, its activity level, its medical history, as well as the area of performance.

Time to accomplish gain	Daily DE above maintenance (Mcal/d)	% increase in DE above maintenance	Daily additional amount of feed
60 days	5.3 to 6.7 Mcal	32 to 41%	1.75 to 2.25 kg
90 days	3.6 to 4.4 Mcal	22 to 27%	1.2 to 1.5 kg
120 days	2.7 to 3.3 Mcal	16 to 21%	0.9 to 1.1 kg
150 days	2.1 to 2.7 Mcal	13 to 16%	0.7 to 0.9 kg
180 days	1.8 to 2.2 Mcal	11 to 14%	0.6 to 0.75 kg

FEED RATE PROTOCOL NOTICE

This feeding protocol described here pertains only to Cargill Limited Horse Feeds. There is not established feeding protocol that all feed companies must follow. Purina provides two feeding rates on their tag a "Minimum" and a "Purina Superior". The "Minimum" meets the levels established by the NRC Nutrient Requirements of Horses (2007), which will prevent all classic nutritional deficiencies. The "Purina Superior" is a greater level of fortification that promotes an optimal level of performance and immunity. By no means does that imply "Minimum" is subpar, and for the non-competitive horse, that stays home year round and has no health issues there is probably no need to exceed this level. However, if you are feeding a true equine athlete, with all the immune stresses associated with that level of competition, then the "Purina Superior" level is paramount to ensure an optimal level of performance and immunity.

Simplici-t Fibra

#35110
Quality



Guaranteed Analysis

Protein	13.00%
Fat	5.00%
Fibre	20.00%
Calcium	0.70%
Phosphorus	0.50%
Sodium	0.60%
Vitamin A	6500 I.U./kg
Vitamin D3	1200 I.U./kg
Vitamin E	150 I.U./kg
Selenium	0.30 mg/kg

Directions for use

Simplici-T Fibra is recommended for the maintenance or active pleasure horse. Feed at 0.5 to 1.5 kg per 100 kg of body weight. Feed according to amount of work performed, forage quality and the horse's body condition. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Provide free choice salt. Daily ration should be divided into 2 preferably 3 separate feedings.

Complete feed for performance or pleasure horses

Pelleted feed for the maintenance or pleasure horse, ideal for boarding stables and riding schools.

Simplici-T Fibra is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Calorie sources are primarily derived from fibre and vegetable fat	<ul style="list-style-type: none"> Reduces the amount of starch in the diet and helps prevent excitability issues.
Pelleted feed	<ul style="list-style-type: none"> Prevents sorting for more constant nutrition. Facilitates storage in winter and summer.
Convenient and versatile	<ul style="list-style-type: none"> Suitable for many types of horses. Ideal for the maintenance horse, the pleasure horse and the active horse.
Available at a competitive price	<ul style="list-style-type: none"> Excellent value.

Ingredients

Fibre	Soya Hulls
Protein/Amino Acids	
Starch	Ground Corn
Fat	Soya Oil
Prebiotic	
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Calcium Iodate, Cobalt Carbonate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Selenium
Multi-Attributes	Wheat shorts
Flavour/Binder	

* Ingredients are not in order of their inclusion rate.

1. Purina recommends that you have your hay analyzed and balance your ration accordingly.
2. If your horse rapidly consumes this feed and/or if hydration status of your horse is questionable, we recommend adding water to this feed or using other measures to ensure an appropriate rate of intake.
3. Do not provide more than 0.5% of body weight of this feed at one time.
4. Provide a source of fresh, clean water at all times.
5. Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

**SIMPLICI-T
Fibra**



Simplici-t Original

#35120
Quality



Guaranteed Analysis

Protein	13.00%
Fat	3.50%
Fibre	15.00%
Calcium	0.70%
Phosphorus	0.50%
Sodium	0.60%
Vitamin A	6500 I.U./kg
Vitamin D3	1200 I.U./kg
Vitamin E	150 I.U./kg
Selenium	0.30 mg/kg

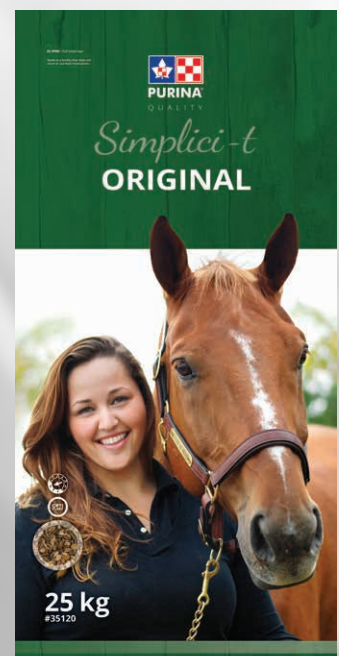
Directions for use

Simplici-T Original is recommended for the maintenance or active pleasure horse. Feed at 0.5 to 1.5 kg per 100 kg of body weight. Feed according to amount of work performed, forage quality and the horse's body condition. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Provide free choice salt. Daily ration should be divided into 2 preferably 3 separate feedings.

Complete feed for performance or pleasure horses

A textured feed for the maintenance or pleasure horse, it is ideal for boarding stables and riding schools.

Simplici-T Original is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Uses high quality ingredients	<ul style="list-style-type: none"> Highly palatable feed.
Contains Opti-Flakes – extruded corn	<ul style="list-style-type: none"> Highly digestible in small intestine. Helps minimize gut upset (colic) by preventing starch overload in the hindgut. Totally eliminating the negative aspect associated with whole and cracked corn. Optimally “cooked”. Reminiscent of the good old days of ‘cooking’ grains. Palatable. No preservatives.
Convenient and versatile	<ul style="list-style-type: none"> Suitable for many types of horses. Ideal for the maintenance horse, the pleasure horse and the active horse.
Available at a competitive price	<ul style="list-style-type: none"> Excellent value.

Ingredients

Fibre	
Protein/Amino Acids	
Starch	Extruded Corn, Whole Grain Oats, Flaked Barley
Fat	Soy Oil
Prebiotic	
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Choline Chloride
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Cobalt Carbonate, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Selenium
Multi-Attributes	Wheat shorts
Flavour/Binder	Molasses

* Ingredients are not in order of their inclusion rate.

1. Purina recommends that you have your hay analyzed and balance your ration accordingly.
2. Do not provide more than 0.5% of body weight of this feed at one time.
3. Provide a source of fresh, clean water at all times.
4. Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

SIMPLICI-T
Original



#35120 Quality

08-2024

Simplici-t Concept

#35130
Quality



Guaranteed Analysis

Protein	12.00%
Fat	2.00%
Fibre	15.00%
Calcium	0.70%
Phosphorus	0.50%
Sodium	0.40%
Vitamin A	6500 I.U./kg
Vitamin D3	1200 I.U./kg
Vitamin E	150 I.U./kg
Selenium	0.30 mg/kg

Directions for use

Simplici-T Concept is recommended for the lightly active pleasure horse. Feed at 1/2 to 1 kg per 100 kg of body weight. Feed according to amount of work performed, forage quality and the horse's body condition. Feed in conjunction with hay and/or pasture, at a minimum of 1% body weight on a dry matter basis. Provide free choice salt and fresh clean water at all times. If there are any further questions please contact your feed dealer.

Complete feed for performance or pleasure horses

Versatile pelleted feed for working adult horses and breeding horses. Ideal for boarding stables and recreational stables, from occasional breeding to active pleasure riding.

Simplici-T Concept is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Pelleted feed	<ul style="list-style-type: none"> Improves starch digestibility. Facilitates storage in winter and summer.
Contains balanced and added amino acids including methionine	<ul style="list-style-type: none"> Provides building blocks for improved muscle and joint development and milk production.
Convenient and versatile	<ul style="list-style-type: none"> Suitable for many types of horses. Provides essential nutrients for growth and milk production. Ideal for the pleasure horse.

Ingredients

Fibre	Soya Hulls
Protein/Amino Acids	DL-Methionine
Starch	Ground Corn
Fat	
Prebiotic	
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Calcium Iodate, Cobalt Carbonate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Selenium
Multi-Attributes	Wheat shorts
Flavour/Binder	

* Ingredients are not in order of their inclusion rate.

1. These recommendations are based on feeding a forage equal or greater than 15% protein.
2. Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. In general, Optimal (35720) will better balance the ration of broodmares and foals than Equilizer (35710).
3. Do not provide more than 0.5% of body weight of this feed at one time.
4. Provide a source of fresh, clean water at all times.
5. Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

**SIMPLICI-T
Concept**



EVOLUTION

#35210
Platinum



Guaranteed Analysis

Protein	16.50%
Fat	7.00%
Fibre	15.00%
Calcium	1.35%
Phosphorus	0.75%
Sodium	0.45%
Vitamin A	10000 I.U./kg
Vitamin D3	2200 I.U./kg
Vitamin E	300 I.U./kg
Selenium	0.40 mg/kg

Directions for use

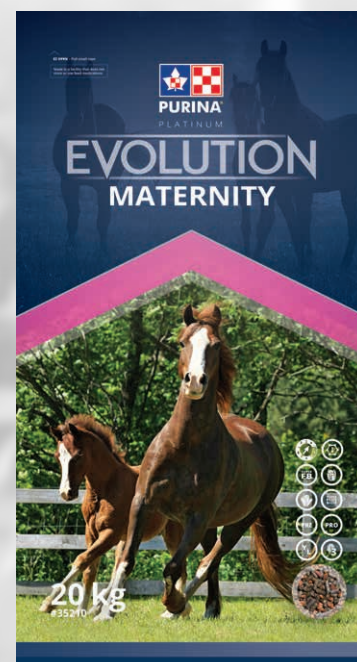
Evolution Maternity is recommended for the gestating, lactating mare and nursing foal. Feed in conjunction with water and a minimum of 1.5% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the Purina Superior recommendation, provide 275 grams of Purina Optimal (35720). Depending on hay analysis, Equilizer (35710) may be better suited as the optional top-dress supplement.

Daily amount of Evolution Maternity kg / 100 kg of body weight

	Minimum	Purina Superior
Broodmares		
Gestation	0.73	1.00
Lactation	0.91	1.25
Foals		
4 - 6 Months	1.00	1.25
7-18 Months	0.91	1.25

Evolution Maternity is a low glycemic, multiparticle feed (contains pelleted and extruded components) for late gestation and lactating mares and for nursing and growing foals. Evolution Maternity utilizes the latest nutritional research on the requirements vital for optimal milk production and sound growth.

Evolution Maternity is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains reduced starch and higher fat and fibre content (commonly referred to as low glycemic)	<ul style="list-style-type: none"> Delivers sensible calories (energy) for optimal growth and milk production. A calorie blend designed to help minimize DODs (Developmental Orthopedic Diseases) by controlling insulin response in mare and foal. Helps minimize gut upset (colic) by preventing starch overload in the hindgut. Proven to effectively lessen glycemic and insulin response.
Contains a high pectin fibre source (beet pulp)	<ul style="list-style-type: none"> A highly fermentable fibre source providing needed calories for milk production and growth. Helps maintain a healthier hindgut pH and microbial population.
Contains Athlete™, Purina's unique extruded high fat supplement with flaxseed (an excellent source of omega-3) with a 5:1 balanced omega-6 to omega-3 ratio	<ul style="list-style-type: none"> Higher digestibility and calorie (energy) availability. Improves hair coat and skin condition. Supports immune function and anti-inflammatory properties. Omega-3 fatty acids shown to enhance insulin efficiency thus reducing insulin resistance. Important for proper cognitive development. Promotes improved fertility in mares.
Contains Horse Plus, Purina's exclusive blend of 11 vitamins, consisting of a full complement of 8 B-vitamins (including biotine), vitamin C, E and K	<ul style="list-style-type: none"> Helps support proper immune function and overall health. Essential for proper utilization or energy for growth and milk production. Helps enhance fertility.
Contains prebiotics and probiotics	<ul style="list-style-type: none"> Helps promote good gut bacteria and protect against harmful bacteria for improved gut health. Supports antibodies (IgG, IgA, IgM) production in colostrum.
Contains balanced amino acids with added lysine	<ul style="list-style-type: none"> Provides building blocks for improved muscle and joint development and milk production.
Contains organic copper, zinc, manganese and selenium	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bioavailability to improve immune response and bone development and decrease the risk of DODs. Supports the transplacental transfer of selenium during late gestation.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains an elevated level of selenium (0.4 mg/kg)	<ul style="list-style-type: none"> Important antioxidants. Preventing foal selenium deficiencies.

Ingredients

Fibre	Soya Hulls, Beet Pulp, Dehydrated Alfalfa Meal
Protein/Amino Acids	DL-Methionine, Soya Bean Meal, L-Lysine
Starch	Ground Corn
Fat	Flaxseed, Soya Oil
Prebiotic	Yeast
Probiotic	Mixture of Live Bacteria
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Mono Dicalcium Phosphate, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Copper, Organic Manganese, Organic Zinc, Organic Selenium, Magnesium Oxide, Cobalt Carbonate
Multi-Attributes	Wheat shorts, Athlete**
Flavour/Binder	Molasses

* Ingredients are not in order of their inclusion rate.

**Athlete™, refers to the extruded component in this product which differs from the Purina Pur-Athlete extruded supplement. Athlete is not available for sale. An ingredient list for Athlete is available upon request.

- Purina recommends analyzing your hay and balancing the ration accordingly.
- Feed clean and dust free hay in sufficient amount daily. Feeding poor quality hay or feeding inadequate amounts could cause colic and other digestive upsets.
- Daily ration should be divided into 2 and preferably 3 separate feedings or more.
- Use a scale to weigh your feed so you know exactly how much your horse is being fed. Do not feed by volume.
- Purina recommends providing a maximum of 0.5% of body weight of this feed at one time.
- These recommendations are intended as a guide. They should be adjusted to variables of management, environment and individual needs. Consult your Purina Equine Consultant if necessary.
- Follow sound management practices along with optimal preventive veterinary medicine.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

EVOLUTION
Maternity



EVOLUTION

#35220
Platinum



Juvenile



Guaranteed Analysis

Protein	15.00%
Fat	7.00%
Fibre	15.00%
Calcium	1.25%
Phosphorus	0.65%
Sodium	0.45%
Vitamin A	11300 I.U./kg
Vitamin D3	2330 I.U./kg
Vitamin E	300 I.U./kg
Selenium	0.45 mg/kg

Directions for use

Evolution Juvenile is recommended for weanlings, yearlings and two-year olds. Feed in conjunction with water and a minimum of 1.5% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the Purina Superior recommendation, provide 300 grams of Purina Optimal (35720) Depending on hay analysis, Equilizer (35710) may be better suited as the optional top-dress supplement.

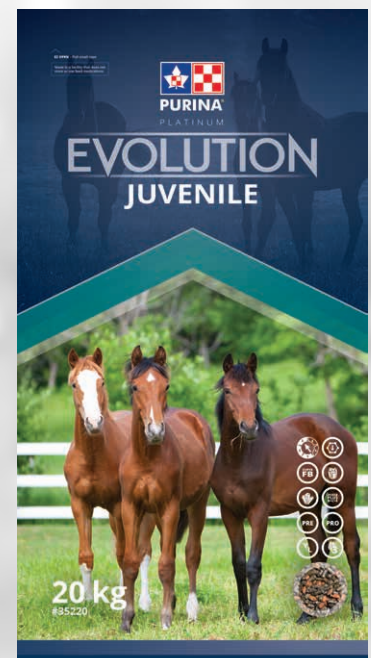
Daily amount of Evolution Juvenile

kg / 100 kg of body weight

	Minimum	Purina Superior
Foals		
4 - 6 Months	0.95	1.11
7 - 24 Months	0.75	1.11

Evolution Juvenile is a low glycemic, multiparticle feed (contains pelleted and extruded components) to meet the unique needs of growing horses. Evolution Juvenile utilizes the latest research on the requirements vital to stimulate sound and balanced growth.

Evolution Juvenile is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains reduced starch and higher fat and fibre content (commonly referred to as low glycemic)	<ul style="list-style-type: none"> Delivers sensible calories (energy) for growth and development. A calorie blend designed to help minimize DODs (Developmental Orthopedic Diseases) by controlling insulin response. Helps minimize gut upset (colic) by preventing starch overload in the hindgut. Proven to effectively lessen glycemic and insulin response.
Contains a high pectin fibre source (beet pulp)	<ul style="list-style-type: none"> A highly fermentable fibre source providing needed calories for growth and development. Helps maintain a healthier hindgut pH and microbial population.
Contains Athlete™, Purina's unique extruded high fat supplement with flaxseed (an excellent source of omega-3) with a 5:1 balanced omega-6 to omega-3 ratio	<ul style="list-style-type: none"> Higher digestibility and calorie (energy) availability. Improves hair coat and skin condition. Supports immune function and anti-inflammatory properties. Important for proper cognitive development. Omega-3 fatty acids shown to enhance insulin efficiency thus reducing insulin resistance.
Contains Horse Plus, Purina's exclusive blend of 11 vitamins, consisting of a full complement of 8 B-vitamins (including biotine), vitamin C, E and K	<ul style="list-style-type: none"> Helps support proper immune function and overall health. Essential for proper utilization of energy for growth.
Contains balanced amino acids with added lysine and methionine	<ul style="list-style-type: none"> Provides building blocks for improved muscle and joint development.
Contains organic copper, zinc, manganese and selenium	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bioavailability to improve immune response and bone development and decrease the risk of DODs.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains prebiotics and probiotics	<ul style="list-style-type: none"> Helps promote good gut bacteria and protect against harmful bacteria for improved gut health.
Contains a high level of vitamin E (275 IU/kg) and selenium (0.45 mg/kg)	<ul style="list-style-type: none"> Important antioxidants to support overall health and immune functions.

Ingredients

Fibre	Beet Pulp, Dehydrated Alfalfa Meal
Protein/Amino Acids	DL-Methionine, Soya Bean Meal, L-Lysine, L-Threonine
Starch	Ground Wheat, Ground Corn
Fat	Flaxseed, Soya Oil
Prebiotic	Yeast
Probiotic	Mixture of Live Bacteria
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Mono Dicalcium Phosphate, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Copper, Organic Manganese, Organic Zinc, Organic Selenium, Cobalt Carbonate
Multi-Attributes	Wheat shorts, Athlete**
Flavour/Binder	Molasses

* Ingredients are not in order of their inclusion rate.

**Athlete™, refers to the extruded component in this product which differs from the Purina Pur-Athlete extruded supplement. Athlete is not available for sale. An ingredient list for Athlete is available upon request.

- Purina recommends analyzing your hay and balancing the ration accordingly.
- Feed clean and dust free hay in sufficient amount daily. Feeding poor quality hay or feeding inadequate amounts could cause colic and other digestive upsets.
- Daily ration should be divided into 2 and preferably 3 separate feedings or more.
- Use a scale to weigh your feed so you know exactly how much your horse is being fed. Do not feed by volume.
- Purina recommends providing a maximum of 0.5% of body weight of this feed at one time.
- These recommendations are intended as a guide. They should be adjusted to variables of management, environment and individual needs. Consult your Purina Equine Consultant if necessary.
- Follow sound management practices along with optimal preventive veterinary medicine.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

EVOLUTION
Juvenile



#35220 Platinum

08-2024

EVOLUTION

#35230
Platinum



Elite



Guaranteed Analysis

Protein	13.00%
Fat	8.00%
Fibre	15.00%
Calcium	0.60%
Phosphorus	0.50%
Sodium	0.60%
Vitamin A	7600 I.U./kg
Vitamin D3	1310 I.U./kg
Vitamin E	300 I.U./kg
Selenium	0.40 mg/kg

Directions for use

Evolution Elite is recommended for performance horses, young training horses, broodmares and stallions. Feed in conjunction with water and a minimum of 1.5% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the Purina Superior recommendation, provide 225 grams of Purina Equilizer (35710) Depending on hay analysis, Optimal (35720) may be better suited as the optional top-dress supplement.

Daily amount of Evolution Elite kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.50	0.75
Performance		
Light Exercise	0.73	1.00
Moderate Exercise	0.82	1.13
Intense Exercise	0.91	1.25
Stallions		
Non Breeding	0.50	1.00
Breeding	0.73	1.00
Broodmares		
Early / Mid Gestation	0.79	1.00

Evolution Elite is a low glycemic, multiparticle feed (contains pelleted and extruded components) for equine athletes, breeding stallions, early gestating mares and hard-keeping maintenance horses. Evolution Elite Sport utilizes the latest research on the requirements vital for optimal performance and gut health while minimizing attitude problems.

Evolution Elite is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains reduced starch and higher fat and fibre content (commonly referred to as low glycemic)	<ul style="list-style-type: none"> Delivers sensible calories (energy) needed for performance. Helps minimize excitability. Proven to effectively lessen glycemic and insulin response. Helps minimize gut upset (colic) by preventing starch overload in the hindgut.
Contains a high pectin fibre source (beet pulp)	<ul style="list-style-type: none"> A highly fermentable fibre source providing needed calories for performance. Helps maintain a healthier hindgut pH and microbial population.
Contains Athlete™, Purina's unique extruded high fat supplement with flaxseed (an excellent source of omega-3) with a 5:1 balanced omega-6 to omega-3 ratio	<ul style="list-style-type: none"> Higher digestibility and calorie (energy) availability. Improves hair coat and skin condition. Supports immune function and anti-inflammatory properties. Helps maintain proper cognitive ability. Omega-3 fatty acids shown to enhance insulin efficiency thus reducing insulin resistance. Improves fertility and sperm quality.
Contains Horse Plus, Purina's exclusive blend of 11 vitamins, consisting of a full complement of 8 B-vitamins (including biotine), vitamin C, E and K	<ul style="list-style-type: none"> Essential blood-building nutrients. Supports immune function and overall health. Essential for proper utilization of energy for exercise. Improves fertility and sperm quality. Helps protect against exercise induced stress.
Contains balanced amino acids with added lysine and methionine	<ul style="list-style-type: none"> To maintain proper muscle tone and joint function.
Contains organic copper, zinc, manganese and selenium	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bioavailability to improve immune response. Supports immune function and overall health.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains prebiotics and probiotics	<ul style="list-style-type: none"> Helps promote good gut bacteria and protect against harmful bacteria for improved gut health.
Contains an elevated level of selenium (0.4 mg/kg)	<ul style="list-style-type: none"> Important antioxidant. Helps supports immune functions and overall health. Helps protect against exercise induced stress.

Ingredients

Fibre	Soya Hulls, Beet Pulp, Dehydrated Alfalfa Meal
Protein/Amino Acids	DL-Methionine, Soya Bean Meal
Starch	Ground Corn, Ground Wheat
Fat	Flaxseed, Soya Oil
Prebiotic	Yeast
Probiotic	Mixture of Live Bacteria
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Magnesium Oxide, Calcium Carbonate, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Copper, Organic Manganese, Organic Zinc, Organic Selenium, Cobalt Carbonate
Multi-Attributes	Wheat shorts, Athlete**
Flavour/Binder	Molasses

* Ingredients are not in order of their inclusion rate.

**Athlete™, refers to the extruded component in this product which differs from the Purina Pur-Athlete extruded supplement. Athlete is not available for sale. An ingredient list for Athlete is available upon request.

- Purina recommends analyzing your hay and balancing the ration accordingly.
- Feed clean and dust free hay in sufficient amount daily. Feeding poor quality hay or feeding inadequate amounts could cause colic and other digestive upsets.
- Daily ration should be divided into 2 and preferably 3 separate feedings or more.
- Use a scale to weigh your feed so you know exactly how much your horse is being fed. Do not feed by volume.
- Purina recommends providing a maximum of 0.5% of body weight of this feed at one time.
- These recommendations are intended as a guide. They should be adjusted to variables of management, environment and individual needs. Consult your Purina Equine Consultant if necessary.
- Follow sound management practices along with optimal preventive veterinary medicine.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

**EVOLUTION
Elite**



#35230 Platinum

08-2024

EVOLUTION

#35240
Platinum



Guaranteed Analysis

Protein	14.00%
Fat	6.00%
Fibre	16.00%
Calcium	0.60%
Phosphorus	0.50%
Sodium	0.40%
Vitamin A	7600 I.U./kg
Vitamin D3	1310 I.U./kg
Vitamin E	300 I.U./kg
Selenium	0.40 mg/kg

Directions for use

Evolution Senior is recommended for older horses (> 15 years). Feed in conjunction with water and a minimum of 1.5% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the Purina Superior recommendation, provide 225 grams of Purina Equilizer (35710) Depending on hay analysis, Optimal (35720) may be better suited as the optional top-dress supplement.

Daily amount of Evolution Senior kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.50	0.75
Performance		
Light Exercise	0.73	1.00
Moderate Exercise	0.82	1.13
Stallions		
Non Breeding	0.50	1.00
Breeding	0.73	1.00

Evolution Senior is a low glycemic, multiparticle feed (contains pelleted and extruded components) for senior horses (>15 years of age and another indication of aging). Evolution Senior utilizes the latest research on the vital requirements for mature horses with strong emphasis on immunity and overall health.

Evolution Senior is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains reduced starch and higher fat and fibre content (commonly referred to as low glycemic)	<ul style="list-style-type: none"> Delivers much needed sensible calories (energy) for senior horses. Helps minimize gut upset (colic) by preventing starch overload in the hindgut. Proven to effectively lessen glycemic and insulin response.
Contains a high pectin fibre source (beet pulp)	<ul style="list-style-type: none"> A highly fermentable fibre source that provides needed calories to maintain body condition. Helps maintain a healthier pH and microbial population in the typically declining senior hindgut.
Contains Athlete™, Purina's unique extruded high fat supplement with flaxseed (an excellent source of omega-3) for an optimal balanced fatty acid profile of 5:1, omega-6 to omega-3	<ul style="list-style-type: none"> Higher digestibility and calorie (energy) availability. Improves hair coat and skin condition. Supports proper immune function and anti-inflammatory properties so vital to senior horses. Promotes membrane integrity and cell viability. Omega-3 fatty acids shown to enhance insulin efficiency thus reducing insulin resistance. Helps support cognitive ability.
Contains Horse Plus, Purina's exclusive blend of 11 vitamins, consisting of a full complement of 8 B-vitamins (including biotine), vitamin C, E and K	<ul style="list-style-type: none"> Essential blood-building nutrients. Supports immune function and overall health. Essential for proper energy utilization.
Contains balanced amino acids with added methionine	<ul style="list-style-type: none"> To help maintain proper muscle tone and joint function.
Contains organic copper, zinc, manganese and selenium	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bioavailability to improve immune response.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains prebiotics and probiotics	<ul style="list-style-type: none"> Helps promote good gut bacteria and protect against harmful bacteria for improved gut health.
Contains an elevated level of vitamin E (220 IU/kg) and selenium (0.4 mg/kg)	<ul style="list-style-type: none"> Two important antioxidants.

Ingredients

Fibre	Dehydrated Alfalfa Meal, Soya Hulls, Beet Pulp
Protein/Amino Acids	DL-Methionine, Soya Bean Meal
Starch	Ground Corn
Fat	Flaxseed, Soya Oil
Prebiotic	Yeast
Probiotic	Mixture of Live Bacteria
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Magnesium Oxide, Calcium Carbonate, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Copper, Organic Manganese, Organic Zinc, Organic Selenium, Cobalt Carbonate
Multi-Attributes	Wheat shorts, Athlete**
Flavour/Binder	Molasses

* Ingredients are not in order of their inclusion rate.

**Athlete™, refers to the extruded component in this product which differs from the Purina Pur-Athlete extruded supplement. Athlete is not available for sale. An ingredient list for Athlete is available upon request.

- Purina recommends analyzing your hay and balancing the ration accordingly.
- Feed clean and dust free hay in sufficient amount daily. Feeding poor quality hay or feeding inadequate amounts could cause colic and other digestive upsets.
- Daily ration should be divided into 2 and preferably 3 separate feedings or more.
- Use a scale to weigh your feed so you know exactly how much your horse is being fed. Do not feed by volume.
- Purina recommends providing a maximum of 0.5% of body weight of this feed at one time.
- These recommendations are intended as a guide. They should be adjusted to variables of management, environment and individual needs. Consult your Purina Equine Consultant if necessary.
- Follow sound management practices along with optimal preventive veterinary medicine.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

**EVOLUTION
Senior**



#35240 Platinum

08-2024

OMOLENE

#35310
Platinum



Maternity 300



Guaranteed Analysis

Protein	16.50%	Sodium	0.45%
Fat	6.00%	Vitamin A	10 000 I.U./kg
Fibre	8.00%	Vitamin D3	2200 I.U./kg
Calcium	1.35%	Vitamin E	300 I.U./kg
Phosphorus	0.75%	Selenium	0.40 mg/kg

Directions for use

Omolene Maternity 300 is recommended for the gestating, lactating mare and nursing and growing foal. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the recommendation, provide 275 grams of Purina Optimal (35720). Provide free-choice salt. Daily ration should be divided into 2 and preferably 3 separate feedings daily.

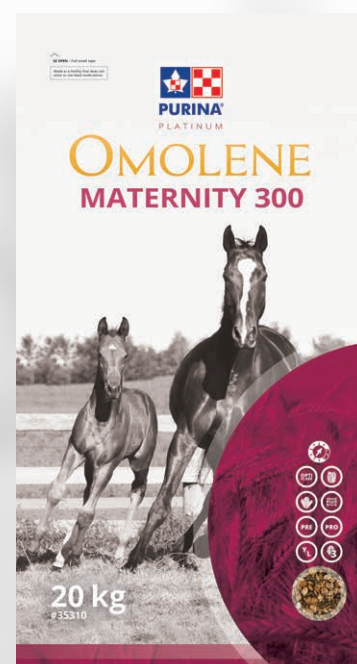
Daily amount of Omolene Maternity 300

kg / 100 kg of body weight

	Minimum	Purina Superior
Broodmares		
Gestation	0.73	1.00
Lactation	0.91	1.25
Foals		
4 - 6 Months	1.00	1.25
7-18 Months	0.91	1.25

Omolene Maternity 300 is a time-honored, palatable and highly digestible textured feed for broodmares, nursing and growing foals. Today's Omolene Maternity 300 utilizes modern technological capabilities and scientific research on the nutritional requirements vital for optimal growth and milk production to provide a traditional feed with heat-processed grains.

Omolene Maternity 300 is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains 6% fat from vegetable sources	<ul style="list-style-type: none"> Highly digestible and energy/calorie dense. Less feed required for optimal growth and milk production. Helps regulate glycemic and insulin response.
Contains flaxseed (an excellent source of omega-3) for an optimal fatty acid profile of 5:1, omega-6 to omega-3	<ul style="list-style-type: none"> Supports immune function and anti-inflammatory properties. Important for proper cognitive development. Improves fertility in mares. Improves hair coat and skin condition.
Contains Opti-Flakes - extruded corn	<ul style="list-style-type: none"> Optimally "cooked". Highly digestible in small intestine. Helps minimize gut upset (colic) by preventing starch overload in the hindgut. Totally eliminating the negative aspect associated with whole and cracked corn. Palatable. No preservatives.
Contains Horse Plus™, Purina's exclusive blend of 11 vitamins, consisting of a full complement of 8 B-vitamins (including biotin), vitamin C, E and K	<ul style="list-style-type: none"> Helps support proper immune function and overall health. Essential for proper utilization of energy for growth and milk production. Helps enhance fertility.
Contains elevated and added amino acids including methionine	<ul style="list-style-type: none"> Provides building blocks for improved muscle and joint development and milk production.
Contains organic copper, zinc, manganese and also selenium	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bioavailability to improve immune response, bone development and decrease the risk of DODs (Developmental Orthopedic Diseases). Supports the transplacental transfer of selenium during late gestation.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains prebiotics and probiotics	<ul style="list-style-type: none"> Helps promote good gut bacteria and protect against harmful bacteria for improved gut health. Supports antibodies (IgG, IgA, IgM) production in colostrums.
Contains an elevated level of selenium (0.4 mg/kg)	<ul style="list-style-type: none"> Important antioxidant. Helps supports immune functions and overall health. Preventing foal selenium deficiencies.

Ingredients

Fibre	
Protein/Amino Acids	DL-Methionine, Soya Bean Meal, L-Lysine
Starch	Extruded Corn, Flaked Barley, Whole Grain Oats, Ground Wheat, Ground Corn
Fat	Flaxseed, Soya Oil
Prebiotic	Yeast
Probiotic	Mixture of Live Bacteria
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Magnesium Oxide, Mono Dicalcium Phosphate, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Copper, Organic Manganese, Organic Zinc, Organic Selenium, Cobalt Carbonate
Multi-Attributes	Wheat shorts
Flavour/Binder	Molasses

* Ingredients are not in order of their inclusion rate.

- Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. Also, depending on the hay, Equilizer (35710) may be better suited as a supplement than Optimal (35720)
- Do not provide more than 0.5% of body weight of this feed at one time.
- Provide a source of fresh, clean water at all times.
- Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

OMOLENE
Maternity 300



OMOLENE

#35320
Platinum



Progression 200



Guaranteed Analysis

Protein	14.00%	Sodium	0.55%
Fat	7.00%	Vitamin A	8450 I.U./kg
Fibre	10.00%	Vitamin D3	1500 I.U./kg
Calcium	0.90%	Vitamin E	300 I.U./kg
Phosphorus	0.50%	Selenium	0.40 mg/kg

Directions for use

Omolene Progression 200 is recommended for performance horses, breeding stallions, early gestating mares and yearlings. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the recommendation, provide 225 grams of Purina Equilizer (35710). Provide free-choice salt. Daily ration should be divided into 2 and preferably 3 separate feedings daily.

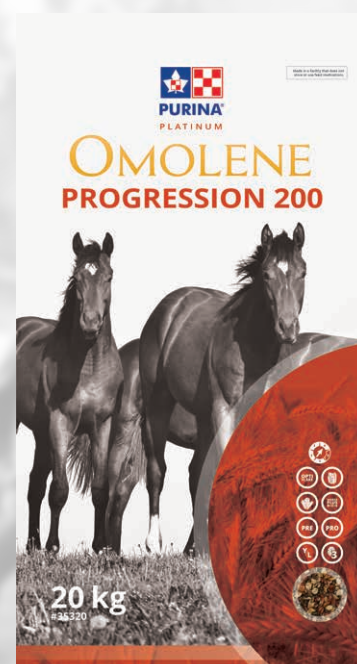
Daily amount of Omolene Progression 200

kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.50	0.75
Performance		
Light Exercise	0.65	1.00
Moderate Exercise	0.73	1.13
Intense Exercise	0.82	1.25
Stallions		
Non Breeding	0.50	1.00
Breeding	0.65	1.00
Broodmares		
Early / Mid Gestation	0.71	1.00
Foals		
13 to 18 Months	1.07	1.25
19 Months and +	0.92	1.25

Omolene Progression 200 is a time-honored, palatable and highly digestible textured feed for performance horses, gestating mares, stallions and yearlings. Today's Omolene Progression 200 utilizes modern technological capabilities and scientific research on the nutritional requirements vital for performance, growth and fertility to provide a traditional feed with heat-processed grains.

Omolene Progression 200 is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains 7% fat from vegetable sources	<ul style="list-style-type: none"> Highly digestible and energy/calorie dense. Less feed required to maintain body condition. Helps regulate glycemic and insulin response. Clean burning fuel, does not produce lactic acid and spares glycogen levels for enhanced athletic performance.
Contains Athlete™, Purina's unique extruded high fat supplement with flaxseed (an excellent source of omega-3) for an optimal fatty acid profile of 5:1 omega-6 to omega-3	<ul style="list-style-type: none"> Higher digestibility and calorie (energy) availability. Improves hair coat and skin condition. Supports immune functions, anti-inflammatory properties and ulcer healing. Helps maintain and develop proper cognitive ability. Improves fertility and sperm quality.
Contains Opti-Flakes - extruded corn	<ul style="list-style-type: none"> Optimally "cooked". Highly digestible in small intestine. Helps minimize gut upset (colic) by preventing starch overload in the hindgut. Totally eliminating the negative aspect associated with whole and cracked corn. Palatable. No preservatives.
Contains Horse Plus™, Purina's exclusive blend of 11 vitamins, consisting of a full complement of 8 B-vitamins (including biotin), vitamin C, E and K	<ul style="list-style-type: none"> Essential blood-building nutrients. Supports immune function and overall health. Essential for proper utilization of energy for exercise and growth. Helps protect against stress. Helps enhance fertility and sperm quality.
Contains elevated and added amino acids including methionine	<ul style="list-style-type: none"> Provides building blocks for improved muscle development, joint health and proper growth.
Contains organic copper, zinc, manganese and also selenium	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bio-availability for heightened performance and immunity.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains prebiotics and probiotics	<ul style="list-style-type: none"> Helps promote good gut bacteria and protect against harmful bacteria for improved gut health. Supports antibodies (IgG, IgA, IgM) production in colostrum.
Contains an elevated level of vitamin E (245 IU/kg.) and selenium (0.4 mg/kg)	<ul style="list-style-type: none"> Effective antioxidants. Helps repair the oxidative stress of exercise. Helps supports immune functions and overall health.

Ingredients

Fibre	
Protein/Amino Acids	DL-Methionine, Soya Bean Meal, L-Lysine
Starch	Extruded Corn, Flaked Barley, Whole Grain Oats, Ground Wheat
Fat	Flaxseed, Soya Oil
Prebiotic	Yeast
Probiotic	Mixture of Live Bacteria
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Magnesium Oxide, Mono Dicalcium Phosphate, Calcium Iodate, Copper Sulphate, Ferrrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Copper, Organic Manganese, Organic Zinc, Organic Selenium, Cobalt Carbonate
Multi-Attributes	Wheat shorts, Athlete**
Flavour/Binder	Molasses

* Ingredients are not in order of their inclusion rate.

**Athlete™, refers to the extruded component in this product which differs from the Purina Pur-Athlete extruded supplement. Athlete is not available for sale. An ingredient list for Athlete is available upon request.

1. Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. Also, depending on the hay, Optimal (35720) may be better suited as a supplement than Equilizer (35710).
2. Do not provide more than 0.5% of body weight of this feed at one time.
3. Provide a source of fresh, clean water at all times.
4. Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

OMOLENE
Progression 200



#35320 Platinum

08-2024

OMOLENE Sport Plus

#35330
Platinum



Guaranteed Analysis

Protein	13.00%	Sodium	0.55%
Fat	8.00%	Vitamin A	8450 I.U./kg
Fibre	15.00%	Vitamin D3	1500 I.U./kg
Calcium	0.90%	Vitamin E	300 I.U./kg
Phosphorus	0.50%	Selenium	0.40 mg/kg

Directions for use

Omolene Sport Plus is recommended for equine athletes, racehorses, breeding stallions, early gestating mares and yearlings. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the recommendation, provide 225 grams of Purina Equilizer (35710). Provide free-choice salt. Daily ration should be divided into 2 and preferably 3 separate feedings daily.

Daily amount of Omolene Sport Plus

kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.50	0.75
Performance		
Light Exercise	0.65	1.00
Moderate Exercise	0.73	1.13
Intense Exercise	0.82	1.25
Stallions		
Non Breeding	0.50	1.00
Breeding	0.65	1.00
Broodmares		
Early / Mid Gestation	0.71	1.00
Foals		
13 to 18 Months	1.07	1.25
19 Months and +	0.92	1.25

Complete feed for the equine athlete and race horses

Omolene Sport Plus is a textured feed with added beet pulp for hard working equine athletes and racehorses. Omolene Sport Plus utilizes modern technological capabilities and scientific research on the nutritional requirements vital for performance to provide a palatable textured feed without cracked or steam-flaked corn.

Omolene Sport Plus is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains 8% fat from vegetable sources	<ul style="list-style-type: none"> Highly digestible and energy/calorie dense. Less feed required to maintain body condition. Clean burning fuel, does not produce lactic acid and spares glycogen levels for enhanced athletic performance.
Contains reduced starch and higher fat and fibre content	<ul style="list-style-type: none"> Provides a moderate level of starch. Helps minimize excitability. Proven to effectively regulate glycemic and insulin response. Helps minimize gut upset (colic) by preventing starch overload in the hindgut.
Contains Athlete™, Purina's unique extruded high fat supplement with flaxseed (an excellent source of omega-3) for an optimal fatty acid profile of 5:1 omega-6 to omega-3	<ul style="list-style-type: none"> Improves hair coat and skin condition. Supports immune functions, anti-inflammatory properties and ulcer healing. Omega-3 fatty acids shown to help enhance insulin efficiency thus reducing insulin resistance. Promotes membrane integrity and cell viability (including red blood cells). Helps maintain proper cognitive ability.
Contains beet pulp, a high pectin fibre source	<ul style="list-style-type: none"> A highly fermentable fibre source providing needed calories for performance. Helps maintain a healthier hindgut pH and microbial population.
Contains Horse Plus™, Purina's exclusive blend of 11 vitamins, consisting of a full complement of 8 B-vitamins (including biotin), vitamin C, E and K	<ul style="list-style-type: none"> Essential blood-building nutrients. Supports immune function and overall health. Essential for proper utilization of energy for optimal performance. Helps protect against exercise induced stress. Helps enhance fertility and sperm quality.
Contains elevated and added amino acids including methionine	<ul style="list-style-type: none"> Provides building blocks for improved muscle development and joint health.
Contains organic copper, zinc, manganese and also selenium	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bio-availability for heightened performance and immunity.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains prebiotics and probiotics	<ul style="list-style-type: none"> Helps promote good gut bacteria and protect against harmful bacteria for improved gut health.
Contains an elevated level of vitamin E (245 IU/kg) and selenium (0.4 mg/kg)	<ul style="list-style-type: none"> Effective antioxidants. Helps repair the oxidative stress of exercise. Helps supports immune functions and overall health.

Ingredients

Fibre	Beet Pulp, Dehydrated Alfalfa Meal
Protein/Amino Acids	DL-Methionine, Soya Bean Meal, L-Lysine
Starch	Ground Corn, Flaked Barley, Whole Grain Oats
Fat	Flaxseed, Soya Oil
Prebiotic	Yeast
Probiotic	Mixture of Live Bacteria
Vitamins	Choline Chloride, Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Magnesium Oxide, Mono Dicalcium Phosphate, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Copper, Organic Manganese, Organic Zinc, Organic Selenium, Cobalt Carbonate
Multi-Attributes	Wheat shorts, Athlete**
Flavour/Binder	Molasses, Pellet Binding Agent

* Ingredients are not in order of their inclusion rate.

**Athlete™, refers to the extruded component in this product which differs from the Purina Pur-Athlete extruded supplement. Athlete is not available for sale. An ingredient list for Athlete is available upon request.

- Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. Also, depending on the hay, Optimal (35720) may be better suited as a supplement than Equilizer (35710).
- If your horse rapidly consumes this feed and/or if hydration status of your horse is questionable, we recommend adding water to this feed or using other measures to ensure an appropriate rate of intake.
- Do not provide more than 0.5% of body weight of this feed at one time.
- Provide a source of fresh, clean water at all times.
- Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

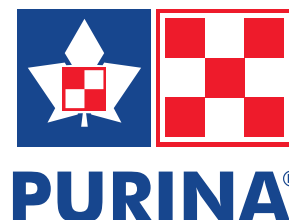
Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

OMOLENE
Sport Plus



VELOCI-T Force

#35430
Premium



Guaranteed Analysis

Protein	13.00%	Sodium	0.55%
Fat	6.00%	Vitamin A	8450 I.U./kg
Fibre	15.00%	Vitamin D3	1500 I.U./kg
Calcium	0.90%	Vitamin E	300 I.U./kg
Phosphorus	0.50%	Selenium	0.40 mg/kg

Directions for use

Veloci-T Force is recommended for equine athletes, racehorses, breeding stallions, early gestating mares and yearlings. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the recommendation, provide 225 grams of Purina Equilizer (35710). Provide free-choice salt. Daily ration should be divided into 2 and preferably 3 separate feedings daily.

Daily amount of Veloci-T Force

kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.50	0.75
Performance		
Light Exercise	0.65	1.00
Moderate Exercise	0.73	1.13
Intense Exercise	0.82	1.25
Stallions		
Non Breeding	0.50	1.00
Breeding	0.65	1.00
Broodmares		
Early / Mid Gestation	0.71	1.00
Foals		
13 to 18 Months	1.07	1.25
19 Months and +	0.92	1.25

Complete feed for equine athlete and race horses

Veloci-T Force is a textured feed with added shredded beet pulp for hard working equine athletes and racehorses. Veloci-T Force utilizes modern technological capabilities and scientific research on the nutritional requirements vital for performance to provide a palatable textured feed without cracked or steam-flaked corn.

Veloci-T Force is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains 6% fat from vegetable sources	<ul style="list-style-type: none"> Highly digestible and energy/calorie dense. Less feed required to maintain body condition. Clean burning fuel, does not produce lactic acid and spares glycogen levels for enhanced athletic performance.
Contains reduced starch and higher fat and fibre content	<ul style="list-style-type: none"> Provides a moderate level of starch. Helps minimize gut upset (colic) by preventing starch overload in the hindgut.
Contains Athlete™, Purina's unique extruded high fat supplement with flaxseed (an excellent source of omega-3)	<ul style="list-style-type: none"> Improves hair coat and skin condition. Supports immune functions, anti-inflammatory properties and ulcer healing. Omega-3 fatty acids shown to help enhance insulin efficiency thus reducing insulin resistance. Promotes membrane integrity and cell viability (including red blood cells). Helps maintain proper cognitive ability.
Contains shredded beet pulp, a high pectin fibre source	<ul style="list-style-type: none"> A highly fermentable fibre source providing needed calories for performance. Helps maintain a healthier hindgut pH and microbial population.
Contains Horse Plus™, Purina's exclusive blend of 11 vitamins, consisting of a full complement of 8 B-vitamins (including biotin), vitamin C, E and K	<ul style="list-style-type: none"> Essential blood-building nutrients. Supports immune function and overall health. Essential for proper utilization of energy for optimal performance. Helps protect against exercise induced stress. Helps enhance fertility and sperm quality.
Contains elevated and added amino acids including methionine	<ul style="list-style-type: none"> Provides building blocks for improved muscle development and joint health.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains an elevated level of vitamin E (245 IU/kg) and selenium (0.4 mg/kg)	<ul style="list-style-type: none"> Effective antioxidants. Helps repair the oxidative stress of exercise. Helps supports immune functions and overall health.

Ingredients

Fibre	Shredded Beet Pulp
Protein/Amino Acids	DL-Methionine, Soya Bean Meal, L-Lysine
Starch	Flaked Barley, Whole Grain Oats
Fat	Soya Oil
Prebiotic	Yeast
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Magnesium Oxide, Mono Dicalcium Phosphate, Calcium Iodate, Cobalt Carbonate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Selenium
Multi-Attributes	Wheat shorts, Athlete**
Flavour/Binder	Molasses

* Ingredients are not in order of their inclusion rate.

**Athlete™, refers to the extruded component in this product which differs from the Purina Pur-Athlete extruded supplement. Athlete is not available for sale. An ingredient list for Athlete is available upon request.

- Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. Also, depending on the hay, Optimal (35720) may be better suited as a supplement than Equilizer (35710).
- If your horse rapidly consumes this feed and/or if hydration status of your horse is questionable, we recommend adding water to this feed or using other measures to ensure an appropriate rate of intake.
- Do not provide more than 0.5% of body weight of this feed at one time.
- Provide a source of fresh, clean water at all times.
- Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

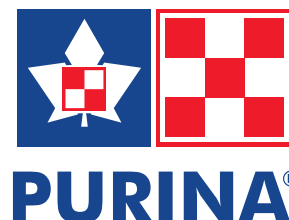
**VELOCI-T
Force**



#35430 Premium

08-2024

EQUILIBRIUM Legend XT



Guaranteed Analysis

Protein	14.00%	Sodium	0.55%
Fat	10.00%	Vitamin A	10,000 I.U./kg
Fibre	10.00%	Vitamin D3	2200 I.U./kg
Calcium	1.35%	Vitamin E	300 I.U./kg
Phosphorus	0.75%	Selenium	0.40 mg/kg

Directions for use

EQUILIBRIUM LEGEND XT is recommended for equine athletes, racehorses, broodmares, foals and breeding stallions. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior Recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the recommendation for equine athletes, racehorses, and breeding stallions feed 225 grams of Purina Equilizer (35710), and for every kilogram under the recommendation for broodmares and foals feed 275 grams of Optimal (35720). Provide free-choice salt. Daily ration should be divided into 2 and preferably 3 separate feedings daily.

Daily amount of Equilibrium Legend XT

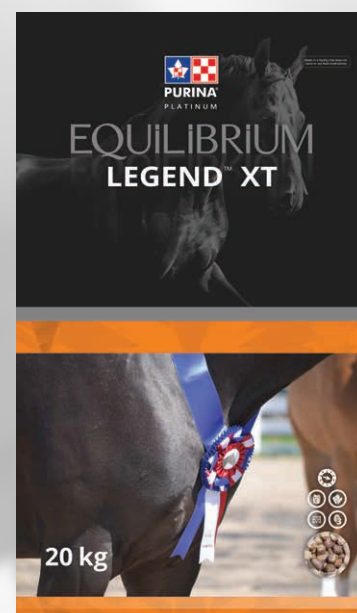
kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.50	0.75
Performance		
Light Exercise	0.64	1.00
Moderate Exercise	0.72	1.13
Intense Exercise	0.80	1.25
Stallions		
Non Breeding	0.50	1.00
Breeding	0.64	1.00
Broodmares		
Gestation	0.73	1.00
Lactation	0.91	1.25
Foals		
4 to 6 Months	1.01	1.25
7 to 18 Months	0.91	1.25
19 Months and +	0.92	1.25

Extruded complete feed with calorie dense nutrition for broodmares, foals, growing horses, breeding stallions, equine athlete and race horses.

Equilibrium Legend XT utilizes state of the art food processing technology (extrusion) to maximize digestibility supporting horses. In every kibble, the horse will have the latest scientific research on nutritional requirements to produce a horse feed vital for optimal performance and health.

Equilibrium Legend XT is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
An extruded feed	<ul style="list-style-type: none"> An optimal cooking process that gelatinizes starch for increased small intestine digestion. Helps minimize colic by preventing starch overload in the hindgut. Good stability in different climates - feed room without temperature control. Consistent nutrient levels in every kibble - Important in group feeding. Slows feed intake. Ideal for horses that bolt their feed.
Contains 10% fat from vegetable sources	<ul style="list-style-type: none"> Highly digestible and energy/calorie dense. Less feed required to maintain body condition. Supports performance and weight management. Delays gastric emptying which aids in ulcer prevention. Clean burning fuel, does not produce lactic acid. Spare glycogen levels for enhanced athletic performance.
Contains flaxseed (an excellent source of omega-3) for an optimally balanced fatty acid profile of 5:1, omega-6 to omega-3	<ul style="list-style-type: none"> Helps maintain proper cognitive ability. Improves hair coat and skin condition. Supports immune functions, anti-inflammatory properties and ulcer healing. Promotes membrane integrity and cell (including red blood cells) viability.
Contains Horse Plus™, Purina's exclusive blend of vitamins, consisting of a full complement of the 8 B-vitamins (including biotin), vitamin C, E and K	<ul style="list-style-type: none"> Essential blood-building nutrients. Supports immune function and overall health. Essential for proper utilization of energy for exercise. Helps protect against exercise induced stress.
Contains elevated and added amino acids including methionine	<ul style="list-style-type: none"> Provides building blocks for improved muscle tone and joint health.
Contains organic copper, zinc, manganese and selenium	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bioavailability to improve immune response and overall health. Supports healthy growth and development of growing horses.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains an elevated level of vitamin E (250 IU/kg.) and selenium (0.4 mg/kg)	<ul style="list-style-type: none"> Important antioxidants. Helps supports immune functions and overall health. Selenium also plays a role in the control of thyroid hormones metabolism. Helps protect against exercise induced stress.

Ingredients

Fibre	Soya Hulls
Protein/Amino Acids	DL-Methionine, L-Lysine, Soya Bean Meal
Starch	Extruded Corn and Ground Wheat
Fat	Flaxseed, Soya Oil
Prebiotic	Yeast
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid, Choline Chloride
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Magnesium Oxide, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Copper, Organic Manganese, Organic Zinc, Organic Selenium, Cobalt Carbonate, Mono Dicalcium phosphate
Multi-Attributes	Wheat shorts
Flavour/Binder	Flavoring, Molasses

* Ingredients are not in order of their inclusion rate.

- Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. Also, depending on the hay, Optimal may be better suited as a supplement than Equilizer.
- Do not provide more than 0.5% of body weight of this feed at one time.
- Provide a source of fresh, clean water at all times.
- Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

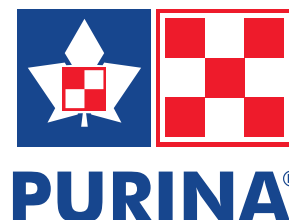
EQUILIBRIUM
Legend XT



EQUILIBRIUM[®]

XCEL HD

#35530
Platinum



Guaranteed Analysis

Protein	13.00%	Sodium	0.60%
Fat	12.00%	Vitamin A	11 050 I.U./kg
Fibre	15.00%	Vitamin D3	1655 I.U./kg
Calcium	0.75%	Vitamin E	300 I.U./kg
Phosphorus	0.60%	Selenium	0.40 mg/kg

Directions for use

Equilibrium[®] XCEL HD is recommended for equine athletes, racehorses, and hard keepers. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the recommendation, provide 225 grams of Purina Equilizer (35710). Provide free-choice salt. Daily ration should be divided into 2 and preferably 3 separate feedings daily.

Daily amount of Equilibrium[®] XCEL HD

kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.50	0.75
Performance		
Light Exercise	0.53	1.00
Moderate Exercise	0.60	1.13
Intense Exercise	0.67	1.25
Stallions		
Non Breeding	0.50	1.00
Breeding	0.53	1.00

Equilibrium[®] XCEL HD is a high caloric, low NSC (sugar and starch), multiparticle feed (contains pelleted and extruded components as well as shredded beet pulp) for equine athletes and hard keepers.

Equilibrium[®] XCEL HD is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains a reduced sugar/starch and higher fat and fibre content (commonly referred to as low glycemic).	<ul style="list-style-type: none"> Delivers sensible calories (energy) needed for performance. Helps minimize excitability. Ideal for horses that “tie-up”. Proven to effectively regulate glycemic and insulin response. Helps minimize gut upset (colic) by preventing starch overload in the hindgut.
Contains 12% fat from vegetable sources	<ul style="list-style-type: none"> Highly digestible and energy/calorie dense. Less feed required to maintain body condition. Helps regulate glycemic and insulin response. Delays gastric emptying which aids in ulcer prevention. Clean burning fuel, does not produce lactic acid and spares glycogen levels for enhanced athletic performance.
Contains shredded beet pulp, a high pectin fibre source.	<ul style="list-style-type: none"> A highly fermentable fibre source providing needed calories for performance. Helps maintain a healthier hindgut pH and microbial population.
Contains Athlete™, Purina’s unique extruded high fat supplement with flaxseed (an excellent source of omega-3) with a 5:1 balanced omega-6 to omega-3 ratio	<ul style="list-style-type: none"> Improves hair coat and skin condition. Supports immune functions, anti-inflammatory properties and ulcer healing. Promotes membrane integrity and cell (including red blood cells) viability. Omega-3 fatty acids shown to help enhance insulin efficiency thus reducing insulin resistance. Helps support cognitive ability.
Contains Horse Plus™, Purina’s exclusive blend of vitamins, consisting of a full complement of the 8 B-vitamins (including biotin), vitamin C, E and K	<ul style="list-style-type: none"> Essential blood-building nutrients. Supports immune function and overall health. Essential for proper utilization of energy for exercise. Vitamin K supports blood clotting. Helps protect against exercise induced stress.
Contains elevated and added amino acids including methionine	<ul style="list-style-type: none"> To maintain proper muscle tone and joint and hoof health.
Contains organic copper, zinc, manganese and selenium	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bioavailability to improve immune response. Supports immune function and overall health.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains prebiotics and probiotics	<ul style="list-style-type: none"> Helps promote good gut bacteria and protect against harmful bacteria for improved gut health.
Contains an elevated level of vitamin E (300 IU/kg) and selenium (0.4 mg/kg)	<ul style="list-style-type: none"> Two important antioxidants which help support immune functions and overall health. Selenium also plays a role in the control of thyroid hormones metabolism. Helps protect against exercise induced stress.

Ingredients

Fibre	Shredded Beet Pulp, Soya Hulls, Dehydrated Alfalfa
Protein/Amino Acids	DL-Methionine, Soya Bean Meal, L-Lysine
Starch	Ground Wheat
Fat	Flaxseed, Soya Oil
Prebiotic	Yeast
Probiotic	Mixture of Live Bacteria
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Mono Dicalcium Phosphate, Magnesium Oxide, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Copper, Organic Manganese, Organic Zinc, Organic Selenium, Cobalt Carbonate
Multi-Attributes	Wheat shorts, Athlete**
Flavour/Binder	Flavoring, Molasses

* Ingredients are not in order of their inclusion rate.

**Athlete™, refers to the extruded component in this product which differs from the Purina Pur-Athlete extruded supplement. Athlete is not available for sale. An ingredient list for Athlete is available upon request.

- Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. Also, depending on the hay, Optimal (35720) may be better suited as a supplement than Equilizer (35710).
- If your horse rapidly consumes this feed and/or if hydration status of your horse is questionable, we recommend adding water to this feed or using other measures to ensure an appropriate rate of intake.
- Do not provide more than 0.5% of body weight of this feed at one time.
- Provide a source of fresh, clean water at all times.
- Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

EQUILIBRIUM®
XCEL HD



#35530 Platinum

08-2024

EQUILIBRIUM Trimax

#35540
Platinum



Guaranteed Analysis

Protein	12.00%	Sodium	0.60%
Fat	12.00%	Vitamin A	11 050 I.U./kg
Fibre	15.00%	Vitamin D3	1655 I.U./kg
Calcium	0.75%	Vitamin E	300 I.U./kg
Phosphorus	0.60%	Selenium	0.40 mg/kg

Directions for use

Equilibrium Trimax is recommended for equine athletes, racehorses, and hard keepers. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the recommendation, provide 225 grams of Purina Equilizer (35710). Provide free-choice salt. Daily ration should be divided into 2 and preferably 3 separate feedings daily.

Daily amount of Equilibrium Trimax

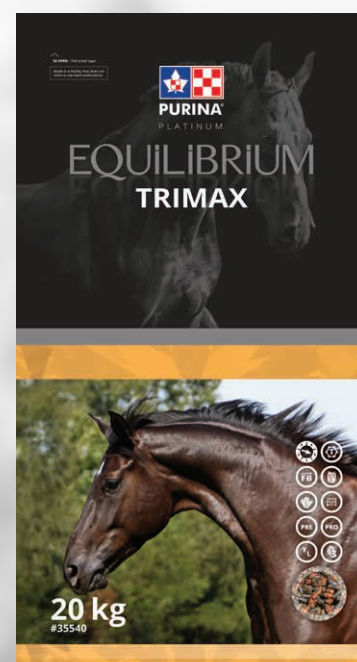
kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.50	0.75
Performance		
Light Exercise	0.53	1.00
Moderate Exercise	0.60	1.13
Intense Exercise	0.67	1.25
Stallions		
Non Breeding	0.50	1.00
Breeding	0.53	1.00

Multiparticle complete feed rich in calories for equine athlete and race horses

Equilibrium Trimax is a high caloric, low glycemic, multiparticle feed (contains pelleted and extruded components) for equine athletes and hard-keepers. Equilibrium Trimax utilizes the latest research on the nutritional requirements for optimal performance and gut health while minimizing tying-up.

Equilibrium Trimax is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains reduced starch and higher fat and fibre content (commonly referred to as low glycemic)	<ul style="list-style-type: none"> Delivers sensible calories (energy) needed for performance. Helps minimize excitability. Ideal for horses that “tie-up”. Proven to effectively regulate glycemic and insulin response. Helps minimize gut upset (colic) by preventing starch overload in the hindgut.
Contains 12% fat from vegetable sources	<ul style="list-style-type: none"> Highly digestible and energy/calorie dense. Less feed required to maintain body condition. Helps regulate glycemic and insulin response. Delays gastric emptying which aids in ulcer prevention. Clean burning fuel, does not produce lactic acid and spares glycogen levels for enhanced athletic performance.
Contains a high pectin fibre source (beet pulp)	<ul style="list-style-type: none"> A highly fermentable fibre source providing needed calories for performance. Helps maintain a healthier hindgut pH and microbial population.
Contains Athlete™, Purina’s unique extruded high fat supplement with flaxseed (an excellent source of omega-3) with a 5:1 balanced omega-6 to omega-3 ratio	<ul style="list-style-type: none"> Improves hair coat and skin condition. Supports immune functions, anti-inflammatory properties and ulcer healing. Promotes membrane integrity and cell (including red blood cells) viability. Omega-3 fatty acids shown to help enhance insulin efficiency thus reducing insulin resistance. Helps support cognitive ability.
Contains Horse Plus™, Purina’s exclusive blend of vitamins, consisting of a full complement of the 8 B-vitamins (including biotin), vitamin C, E and K	<ul style="list-style-type: none"> Essential blood-building nutrients. Supports immune function and overall health. Essential for proper utilization of energy for exercise. Vitamin K supports blood clotting. Helps protect against exercise induced stress.
Contains elevated and added amino acids including methionine	<ul style="list-style-type: none"> To maintain proper muscle tone and joint and hoof health.
Contains organic copper, zinc, manganese and selenium	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bioavailability to improve immune response. Supports immune function and overall health.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains prebiotics and probiotics	<ul style="list-style-type: none"> Helps promote good gut bacteria and protect against harmful bacteria for improved gut health.
Contains an elevated level of vitamin E (300 IU/kg) and selenium (0.4 mg/kg)	<ul style="list-style-type: none"> Important antioxidants. Helps supports immune functions and overall health. Selenium also plays a role in the control of thyroid hormones metabolism. Helps protect against exercise induced stress.

Ingredients

Fibre	Beet Pulp, Soya Hulls, Dehydrated Alfalfa Meal
Protein/Amino Acids	DL-Methionine, L-Lysine, L-Threonine
Starch	Ground Wheat
Fat	Flaxseed, Soya Oil
Prebiotic	Yeast
Probiotic	Mixture of Live Bacteria
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Mono Dicalcium Phosphate, Magnesium Oxide, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Copper, Organic Manganese, Organic Zinc, Organic Selenium, Cobalt Carbonate
Multi-Attributes	Wheat shorts, Athlete**
Flavour/Binder	Flavoring, Molasses

* Ingredients are not in order of their inclusion rate.

**Athlete™, refers to the extruded component in this product which differs from the Purina Pur-Athlete extruded supplement. Athlete is not available for sale. An ingredient list for Athlete is available upon request.

- Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. Also, depending on the hay, Optimal (35720) may be better suited as a supplement than Equilizer (35710).
- If your horse rapidly consumes this feed and/or if hydration status of your horse is questionable, we recommend adding water to this feed or using other measures to ensure an appropriate rate of intake.
- Do not provide more than 0.5% of body weight of this feed at one time.
- Provide a source of fresh, clean water at all times.
- Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

**EQUILIBRIUM
Trimax**

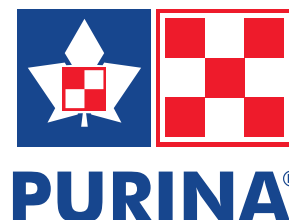


#35540 Platinum

08-2024

EQUILIBRIUM Pro Plus

#35550
Platinum



Guaranteed Analysis

Protein	14.00%	Sodium	0.60%
Fat	7.00%	Vitamin A	12 000 I.U./kg
Fibre	12.00%	Vitamin D3	1200 I.U./kg
Calcium	0.85%	Vitamin E	245 I.U./kg
Phosphorus	0.60%	Selenium	0.40 mg/kg

Directions for use

Equilibrium Pro Plus is recommended for performance horses, breeding stallions, broodmares and growing foals. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the recommendation, provide 225 grams of Purina Equilizer (35710). Provide free-choice salt. Daily ration should be divided into 2 and preferably 3 separate feedings daily.

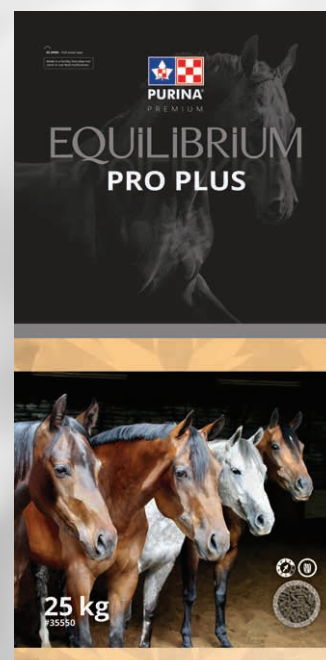
Daily amount of Equilibrium Pro Plus

kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.55	0.75
Performance		
Light Exercise	0.65	1.00
Moderate Exercise	0.73	1.13
Intense Exercise	0.82	1.25
Stallions		
Non Breeding	0.55	1.00
Breeding	0.65	1.00
Broodmares		
Gestation	0.65	1.00
Foals		
13 to 18 Months	1.33	1.33
19 Months and +	1.14	1.25

Equilibrium Pro Plus is a versatile high fat and highly fortified pelleted feed designed primarily for performance horses. It is also a valuable option for breeding and growing horses. Equilibrium Pro Plus dense nutrient content yields a versatile product suitable for situations when one feed has to meet the variable needs of every horse in the barn.

Equilibrium Pro Plus is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains 7% fat from vegetable sources	<ul style="list-style-type: none"> Highly digestible and energy/calorie dense. Less feed required to maintain body condition. Helps regulate glycemic and insulin response. Clean burning fuel, does not produce lactic acid and spares glycogen levels for enhanced athletic performance.
Contains elevated and added amino acids including methionine	<ul style="list-style-type: none"> Provides building blocks for improved muscle tone, joint health and proper growth.
Contains an elevated level of vitamin E (245 I.U./kg.) and organic selenium (0.4 mg/kg)	<ul style="list-style-type: none"> Effective antioxidants. Helps repair the oxidative stress of exercise. Helps supports immune functions and overall health.

Ingredients

Fibre	Soya Hulls
Protein/Amino Acids	Soya Bean Meal, DL-Methionine
Starch	Ground Corn
Fat	Soya Oil
Prebiotic	
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Magnesium Oxide, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Mono Dicalcium Phosphate, Cobalt Carbonate, Organic Selenium, Selenium
Multi-Attributes	Wheat shorts
Flavour/Binder	

* Ingredients are not in order of their inclusion rate.

- Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. Also, depending on the hay, Optimal (35720) may be better suited as a supplement than Equilizer (35710).
- Do not provide more than 0.5% of body weight of this feed at one time.
- Provide a source of fresh, clean water at all times.
- Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

**EQUILIBRIUM
Pro Plus**

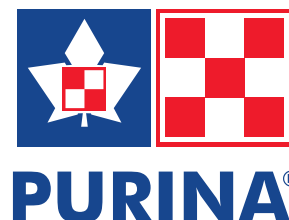


#35550 Platinum

08-2024

EQUILIBRIUM Equilizer

#35710
Platinum



Guaranteed Analysis

Protein	12.00%	Iodine	4.3 mg/kg
Fat	4.00%	Copper	240 mg/kg
Fibre	15.00%	Manganese	600 mg/kg
Calcium	3.00%	Zinc	700 mg/kg
Phosphorus	2.50%	Cobalt	2.5 mg/kg
Sodium	1.50%	Fluorine	50 mg/kg
Magnesium	0.30%	Vitamin A	39 000 I.U./kg
Sulfur	0.25%	Vitamin D3	7200 I.U./kg
Potassium	1.00%	Vitamin E	1000 I.U./kg
Iron	1000 mg/kg	Selenium	1.80 mg/kg

Directions for use

Feed Equilibrium Equilizer as the sole ration to easy keeping horses to provide minerals and vitamins without adding excess calories or proteins. Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Provide salt free-choice.

Daily amount of Equilibrium Equilizer

kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.111	0.167
Performance		
Light Exercise	0.160	0.222
Moderate Exercise	0.180	0.250
Intense Exercise	0.200	0.278
Stallions		
Non Breeding	0.111	0.222
Breeding	0.160	0.222
Broodmares		
Early / Mid Gestation	0.160	0.222

Mineral and vitamin supplement for horses

Equilibrium Equilizer is a low calorie, low sugar/starch, nutrient dense pellet with elevated minerals and vitamins, containing up to 5 times the vitamin-mineral content of most feeds. This supplement is also classified as a ration balancer. Purina makes two ration balancers: Equilibrium Equilizer and Equilibrium Optimal. The difference between the two is that Equilizer is formulated for inactive adult and performance horses, including pony and miniature horses, whereas Optimal is formulated for broodmares and growing horses. This recommendation is based on feeding Equilizer along with a typical horse hay. However, if Equilizer is fed exclusively with a low protein hay (<8% protein), then Optimal could be a better choice. If unsure on the quality of your forage (or need to have it tested), or which product best suits your needs please contact us.



Characteristics

CHARACTERISTICS	ADVANTAGES
Low sugar/starch content. Also identified as low glycemic or low NSC (nonstructural carbohydrates). Contains no whole grains or molasses	<ul style="list-style-type: none"> Ideal for insulin resistant, Cushing's and EPSM (Equine Polysaccharide Storage Myopathy) horses.
Low-calorie with elevated minerals and vitamins. Very nutrient dense	<ul style="list-style-type: none"> With the low feeding rate provides negligible caloric intake. Ideal when there is a need to cut calories but not nutrition. Easy-keepers, ponies and miniature horses. Ideal for overweight horses that maintain body weight on forage alone. Provides the nutrients lacking in a forage alone diet.
Contains added lysine	<ul style="list-style-type: none"> Provides an ideal balance of amino acids for enhanced muscle tone and joint health.
Contains organic copper, zinc, manganese and organic selenium Increases absorption and enhances trace mineral	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bioavailability to improve immune response and overall health.
Contains an elevated level of vitamin E (1000 IU/kg) and selenium (1.80 mg/kg)	<ul style="list-style-type: none"> Effective antioxidants. Helps repair the oxidative stress of exercise. Helps supports immune functions and overall health.
Contains 6 added B-vitamins (including biotin).	<ul style="list-style-type: none"> Supports optimum metabolic efficiency. Promotes hoof and overall health and vitality.

Ingredients

Fibre	Soya Hulls, Dehydrated Alfalfa Meal, Beet Pulp
Protein/Amino Acids	L-Lysine
Starch	Ground Wheat
Fat	Soya Oil
Prebiotic	
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Mono Dicalcium Phosphate, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Selenium, Organic Copper, Organic Manganese, Organic Zinc, Defluorinated Phosphate, Cobalt Carbonate
Multi-Attributes	Wheat shorts
Flavour/Binder	Flavoring, Pellet Binding Agent

* Ingredients are not in order of their inclusion rate.

- Equilibrium Equilizer may be fed as a top dress in conjunction with a Purina feed for growing, maintenance and performance horses that are not being fed the recommended amount of a Purina horse Feed. Provide 0.175 kg to 0.250 kg of Equilibrium Equilizer for every kilogram below the recommended amount of a complete Purina Horse Feed. Equilibrium Equilizer is also an ideal top dress for mares in early and mid-gestation.
- Never feed more than the recommended amount without consultation from a Purina sales consultant.
- Provide a source of fresh, clean water at all times.
- Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

EQUILIBRIUM
Equilizer



EQUILIBRIUM Optimal

#35720
Platinum



Guaranteed Analysis

Protein	30.00%	Iodine	2.9 mg/kg
Fat	3.00%	Copper	176 mg/kg
Fibre	7.50%	Manganese	400 mg/kg
Calcium	3.50%	Zinc	500 mg/kg
Phosphorus	1.75%	Cobalt	0.80 mg/kg
Sodium	1.50%	Fluorine	50 mg/kg
Magnesium	1.00%	Vitamin A	26 000 I.U./kg
Sulfur	0.40%	Vitamin D3	7000 I.U./kg
Potassium	1.50%	Vitamin E	1000 I.U./kg
Iron	850 mg/kg	Selenium	1.50 mg/kg

Directions for use

Feed Equilibrium Optimal as the sole ration to easy keeping horses including mares, foals and stallions to provide minerals and vitamins without adding excess calories or proteins. Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Provide salt free-choice.

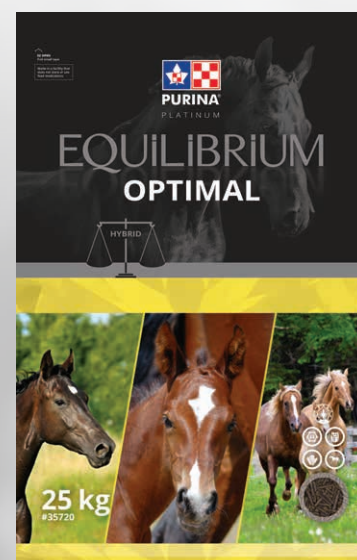
Daily amount of Equilibrium Optimal

kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.133	0.200
Performance		
Light Exercise	0.173	0.267
Moderate Exercise	0.180	0.300
Stallions		
Non Breeding	0.133	0.267
Breeding	0.173	0.267
Broodmares		
Gestation	0.231	0.267
Lactation	0.231	0.333
Foals		
4 - 6 Months	0.317	0.333
7 - 12 Months	0.249	0.333
13 - 18 Months	0.227	0.333
19 - 24 Months	0.200	0.333

Equilibrium Optimal is a low calorie, low sugar/starch, nutrient dense pellet with elevated protein (amino acids), minerals and vitamins, containing up to 5 times the vitamin-mineral content of most feeds. This supplement is also classified as a ration balancer.

Optimal is formulated for broodmares, growing horses, performance and leisure horses, including pony and miniature mares and foals. This recommendation is based on feeding Optimal along with a typical horse forage.



Characteristics

CHARACTERISTICS	ADVANTAGES
Low sugar/starch content. Also identified as low glycemic or low NSC (nonstructural carbohydrates). Contains no whole grains or molasses	<ul style="list-style-type: none"> Ideal for insulin resistant, Cushing's and EPSM (Equine Polysaccharide Storage Myopathy) horses.
Low-calorie with elevated amino acids, minerals and vitamins. Very nutrient dense	<ul style="list-style-type: none"> With the low feeding rate provides negligible caloric intake. Ideal when there is a need to cut calories but not nutrition, for example - easy keepers. Ideal for foals with signs of DODs (Developmental Orthopedic Disease) where there's a need to cut calories to slow growth rate but maintain if not increase nutrition to promote sound growth. Ideal for overweight mares and foals that maintain body weight on forage alone. Ideal for overweight, insulin resistant and laminitic horses on a low protein hay. Provides the nutrients lacking in a forage alone diet.
Contains the added amino acids, lysine and methionine	<ul style="list-style-type: none"> Provides an ideal balance of amino acids for optimal muscle and joint development and milk production.
Contains organic copper, zinc, manganese and selenium	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bioavailability to improve immune response, bone development and decrease the risk of DODs (Developmental Orthopedic Diseases). Supports the transplacental transfer of selenium during late gestation.
Contains 8 added B-vitamins (including biotin) and vitamin C	<ul style="list-style-type: none"> Supports optimum metabolic efficiency. Promotes hoof and overall health and vitality.
Contains dried brewer's yeast	<ul style="list-style-type: none"> High quality vegetable protein, equivalent to whey but without the undesirable lactose.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.

Ingredients

Fibre	Dehydrated Alfalfa Meal
Protein/Amino Acids	DL-Methionine, L-Lysine, Dried Brewers Yeast, Soya Bean Meal
Starch	
Fat	Soya Oil
Prebiotic	
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Mono Dicalcium Phosphate, Magnesium Oxide, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Copper, Organic Manganese, Organic Zinc, Organic Selenium, Cobalt Carbonate
Multi-Attributes	Wheat shorts
Flavour/Binder	Flavoring

* Ingredients are not in order of their inclusion rate.

1. Equilibrium Optimal may also be fed as a top dress in conjunction with a Purina feed for mares, foals and stallions that are not being fed the recommended amount of a Purina horse Feed. Provide 0.200 kg to 0.300 kg of Equilibrium Optimal for every kilogram below the recommended amount of a complete Purina Horse Feed.
2. Never feed more than the recommended amount without consultation from a Purina sales consultant.
3. Provide a source of fresh, clean water at all times.
4. Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

EQUILIBRIUM
Optimal



#35720 Platinum

08-2024

SUPERFIBRA

#35610
Platinum



Integri-T



Guaranteed Analysis

Protein	13.00%	Sodium	0.50%
Fat	7.00%	Vitamin A	6500 I.U./kg
Fibre	25.00%	Vitamin D3	1200 I.U./kg
Calcium	0.90%	Vitamin E	300 I.U./kg
Phosphorus	0.55%	Selenium	0.40 mg/kg

Directions for use

SuperFibra Integri-T is recommended for performance horses, broodmares as well as yearlings. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the Purina Superior recommendation, provide 225 grams of Purina Equilizer (35710) *.

Must be fed soaked.

Daily amount of SuperFibra Integri-T kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.67	0.75
Performance		
Light Exercise	0.70	1.00
Moderate Exercise	0.75	1.13
Stallions		
Non Breeding	0.67	1.00
Breeding	0.70	1.00
Broodmares		
Gestation	0.92	1.00
Yearlings		
13 to 18 Months	1.07	1.25
19 Months and +	0.92	1.25

A unique complete feed for an outstanding equine partner!

SuperFibra Integri-T is a unique and specialized feed. A market leader with a guaranteed 10% (max) sugar/starch content (NSC - nonstructural carbohydrates). SuperFibra Integri-T is a complete feed designed to meet the special nutrient requirements of maintenance, exercising, breeding horses and yearlings that require a low sugar/starch diet. SuperFibra Integri-T is ideal for horses that "tie-up" and get excited after consuming grains, have a history of laminitis or Cushing's disease or are insulin resistant.

SuperFibra Integri-T is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Guaranteed 10% (max) sugar-starch (NSC). Contains high fat and high fibre content. Contains no molasses, oats, barley and corn	<ul style="list-style-type: none"> Delivers an elevated content of sensible calories (energy) needed for performance. Ideal for horses that require a low sugar/starch diet. Proven to best regulate glycemic and insulin response. Helps minimize gut upset (colic) by preventing starch overload in the hindgut.
Contains flaxseed (an excellent source of omega 3). For an optimally balanced fatty acid profile of 5:1, omega-6 to omega-3	<ul style="list-style-type: none"> Improves hair coat and skin condition. Supports immune function and anti-inflammatory properties. Helps maintain proper cognitive ability. Omega-3 fatty acids shown to help enhance insulin efficiency thus reducing insulin resistance. Promotes membrane integrity and cell viability. Improves fertility in mares.
Contains high pectin and hemicellulose fibre. Does NOT contain economical fibre sources like oat hulls	<ul style="list-style-type: none"> A highly fermentable fibre source providing needed calories for performance. Helps maintain a healthier hindgut pH and microbial population.
Contains Horse Plus™, Purina's exclusive blend of vitamins, consisting of a full complement of the 8 B-vitamins (including biotin), vitamin C, E and K	<ul style="list-style-type: none"> Essential blood-building nutrients. Supports immune function and overall health. Essential for proper utilization of energy for exercise. Helps protect against exercise induced stress.
Contains elevated and added amino acids including methionine	<ul style="list-style-type: none"> Provides building blocks for improved muscle tone and joint health.
Contains a proprietary blend of yeast, prebiotic and probiotic	<ul style="list-style-type: none"> Improves hindgut fermentation resulting in increased energy and protein utilization. Helps promote good gut bacteria and protect against harmful bacteria for improved gut health.
Contains organic copper, zinc, manganese and selenium	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bioavailability to improve immune response and overall health.
Contains an elevated level of vitamin E (250 IU/kg.)	<ul style="list-style-type: none"> Important antioxidant needed by exercising horses.
Feed soaked. Add 2 to 3 parts water to 1 part feed let soak for around 10 minutes or till water is absorb into the product	<ul style="list-style-type: none"> With warm water creates a very palatable mash. Great way to increase water consumption and ensure in take supplemental powders.

Ingredients

Fibre	Soya Hulls
Protein/Amino Acids	DL-Methionine, L-Lysine
Starch	Ground Wheat
Fat	Flaxseed, Soya Oil
Prebiotic	Yeast
Probiotic	Mixture of Live Bacteria
Vitamins	Choline Chloride, Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic Acid, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Magnesium Oxide, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Copper, Organic Manganese, Organic Zinc, Mono Dicalcium Phosphate, Cobalt Carbonate, Organic Selenium
Multi-Attributes	Wheat shorts
Flavour/Binder	

* Ingredients are not in order of their inclusion rate.

- Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. Depending on hay analysis, Optimal (35720) may be better suited as the optional top-dress supplement.
- If your horse rapidly consumes this feed and/or if hydration status of your horse is questionable, we recommend adding water to this feed or using other measures to ensure an appropriate rate of intake.
- Do not provide more than 0.5% of body weight of this feed at one time.
- Provide a source of fresh, clean water at all times.
- Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

SUPERFIBRA
Integri-T

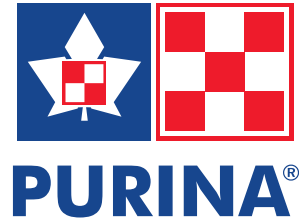


#35610 Platinum

08-2024

SUPERFIBRA

#35620
Premium



Plus



Guaranteed Analysis

Protein	13.00%	Sodium	0.60%
Fat	6.00%	Vitamin A	6500 I.U./kg
Fibre	20.00%	Vitamin D3	1200 I.U./kg
Calcium	0.85%	Vitamin E	220 I.U./kg
Phosphorus	0.55%	Selenium	0.30 mg/kg

Directions for use

SuperFibra Plus is recommended for maintenance, exercising, breeding horses and yearlings. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the recommendation, provide 175 grams of Purina Equilizer (35710). Provide free choice salt. Daily ration should be divided into 2 preferably 3 separate feedings.

Daily amount of SuperFibra Plus kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.67	1.00
Performance		
Light Exercise	0.73	1.33
Moderate Exercise	0.82	1.50
Intense Exercise	0.91	1.67
Stallions		
Non Breeding	0.67	1.33
Breeding	0.73	1.33
Broodmares		
Gestation	0.92	1.33
Yearling		
13 to 18 Months	1.33	1.67
19 Months and +	1.14	1.67

Complete feed for pleasure, sport, breeding horses and yearlings

SuperFibra Plus is a versatile feed low in sugar/starch (NSC - nonstructural carbohydrates) in a chunk format. Equilibrium Plus is a complete feed designed to meet the needs of maintenance, exercising, breeding horses and yearlings that require a low sugar/starch diet.

SuperFibra Plus is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains reduced starch and higher fat and fibre content (commonly referred to as low glycemic)	<ul style="list-style-type: none"> Delivers sensible calories (energy) needed for performance and maintaining body condition. Helps minimize excitability. Suitable for horses that "tie-up". Proven to effectively regulate glycemic and insulin response. Suitable for horses with a history of laminitis, Cushing's Disease or insulin resistant. Helps minimize gut upset (colic) by preventing starch overload in the hindgut.
Contains high pectin and hemicellulose fibre. Does NOT contain economical fibre sources like oat hulls	<ul style="list-style-type: none"> A highly fermentable fibre source providing needed calories for performance. Helps maintain a healthier hindgut pH and microbial population.
Contains 6% fat from vegetable sources	<ul style="list-style-type: none"> Highly digestible and energy/calorie dense. Less feed required to maintain body condition. Clean burning fuel, does not produce lactic acid and spares glycogen levels for enhanced athletic performance.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains elevated and added amino acids including methionine	<ul style="list-style-type: none"> Provides building blocks for improved muscle and joint development and milk production.
Unique chunk form	<ul style="list-style-type: none"> Induce chewing and slow rate of intake. Better suited for ground feeding.

Ingredients

Fibre	Soya Hulls
Protein/Amino Acids	DL-Methionine
Starch	Ground Corn, Ground Wheat
Fat	Soya Oil
Prebiotic	Yeast
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Selenium, Cobalt Carbonate
Multi-Attributes	Wheat shorts
Flavour/Binder	Pellet Binding Agent

* Ingredients are not in order of their inclusion rate.

- Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. Also, depending on the hay, Optimal (35720) may be better suited as a supplement than Equilizer (35710).
- If your horse rapidly consumes this feed and/or if hydration status of your horse is questionable, we recommend adding water to this feed or using other measures to ensure an appropriate rate of intake.
- Do not provide more than 0.5% of body weight of this feed at one time.
- Provide a source of fresh, clean water at all times.
- Observer une gestion efficace, un programme d'hygiène et de lutte contre la maladie. Si vous avez des questions, communiquez avec votre vétérinaire, votre concessionnaire ou consultant Purina.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

**SUPERFIBRA
Plus**



#35620 Premium

08-2024

SUPERFIBRA

#35630
Premium



Ultra



Guaranteed Analysis

Protein	13.00%	Sodium	0.60%
Fat	6.00%	Vitamin A	6500 I.U./kg
Fibre	18.00%	Vitamin D3	1200 I.U./kg
Calcium	0.85%	Vitamin E	220 I.U./kg
Phosphorus	0.55%	Selenium	0.30 mg/kg

Directions for use

SuperFibra Ultra is recommended for performance horses, show horses, breeding horses and yearlings. Feed according to the following table. Individual horses variance may require feeding rate adjustment of plus or minus 15% of amount indicated. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Feed according to the following table, whereby the lower quantity meets minimum vitamin and mineral requirements and the higher quantity meets Purina Superior recommendations. Ideally, feed enough to achieve desired body condition, and for every kilogram under the recommendation, provide 175 grams of Purina Equilizer (35710). Provide free choice salt. Daily ration should be divided into 2 preferably 3 separate feedings.

Daily amount of SuperFibra Ultra kg / 100 kg of body weight

	Minimum	Purina Superior
Maintenance	0.67	1.00
Performance		
Light Exercise	0.73	1.33
Moderate Exercise	0.82	1.50
Intense Exercise	0.91	1.67
Stallions		
Non Breeding	0.67	1.33
Breeding	0.73	1.33
Broodmares		
Gestation	0.92	1.33
Yearling		
13 to 18 Months	1.33	1.67
19 Months and +	1.14	1.67

SuperFibra Ultra is a versatile feed low in sugar/starch (NSC - nonstructural carbohydrates) in a pellet format.

SuperFibra Ultra is a complete feed designed to meet the needs of maintenance, exercising, breeding horses and yearlings that require a low sugar/ starch diet.

SuperFibra Ultra is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains reduced starch and higher fat and fibre content (commonly referred to as low glycemic)	<ul style="list-style-type: none"> Delivers sensible calories (energy) needed for performance and maintaining body condition. Helps minimize excitability. Suitable for horses that "tie-up". Proven to effectively regulate glycemic and insulin response. Suitable for horses with a history of laminitis, Cushing's Disease or insulin resistant. Helps minimize gut upset (colic) by preventing starch overload in the hindgut.
Contains high pectin and hemicellulose fibre. Does NOT contain economical fibre sources like oat hulls	<ul style="list-style-type: none"> A highly fermentable fibre source providing needed calories for performance. Helps maintain a healthier hindgut pH and microbial population.
Contains 4% fat from vegetable sources	<ul style="list-style-type: none"> Highly digestible and energy/calorie dense. Less feed required to maintain body condition. Clean burning fuel, does not produce lactic acid and spares glycogen levels for enhanced athletic performance.
Contains yeast culture	<ul style="list-style-type: none"> Improves hindgut fermentation which increases energy, protein and phosphorus utilization.
Contains elevated and added amino acids including DL-Methionine	<ul style="list-style-type: none"> Provides building blocks for improved muscle and joint development and milk production.

Ingredients

Fibre	Soya Hulls
Protein/Amino Acids	Soya Bean Meal, DL-Methionine
Starch	Ground Corn, Ground Wheat
Fat	Soya Oil
Prebiotic	Yeast
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Choline Chloride
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Selenium, Cobalt Carbonate, Mono Dicalcium Phosphate
Multi-Attributes	Wheat shorts

* Ingredients are not in order of their inclusion rate.

- Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. Also, depending on the hay, Optimal (35720) may be better suited as a supplement than Equilizer (35710).
- If your horse rapidly consumes this feed and/or if hydration status of your horse is questionable, we recommend adding water to this feed or using other measures to ensure an appropriate rate of intake.
- Do not provide more than 0.5% of body weight of this feed at one time.
- Provide a source of fresh, clean water at all times.
- Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

SUPERFIBRA
Ultra



#35630 Premium

08-2024

SUPERFIBRA

#35640
Premium



Classic



Guaranteed Analysis

Protein	12.50%
Fat	2.00%
Fibre	25.00%
Calcium	0.80%
Phosphorus	0.45%
Sodium	0.45%
Vitamin A	6500 I.U./kg
Vitamin D3	1200 I.U./kg
Vitamin E	100 I.U./kg
Selenium	0.30 mg/kg

Directions for use

SuperFibra Classic is recommended for mature horses that are inactive or lightly active or for horses that need the benefit of added roughage in their diet. Feed at 0.5 to 1.5 kg per 100 kg of body weight. Feed according to amount of work performed, forage quality and the horse's body condition. Feed in conjunction with water and a minimum of 1% body weight (on a dry matter basis) of a long stemmed forage (hay/pasture). Provide free choice salt. Daily ration should be divided into 2 preferably 3 separate feedings.

Complete feed with forage incorporated

SuperFibra Classic is a fortified feed with built-in roughage and low in sugar/starch (NSC - nonstructural carbohydrates) in a chunk format. SuperFibra Classic is balance for mature horses that are inactive or lightly active or for horses that need the benefit of added roughage in their diet. It can replace part of the daily hay ration.

SuperFibra Classic is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains a reduced sugar/starch content, commonly referred to as low glycemic	<ul style="list-style-type: none"> Delivers sensible calories (energy) needed for inactive to light active horses. Helps minimize excitability. Helps minimize gut upset (colic) by preventing starch overload in the hindgut.
Contains an elevated fibre content (25%) from quality roughage sources. Does NOT contain economical fibre sources like oat hulls	<ul style="list-style-type: none"> Can replace up to 50% of the hay ration when supply or quality is low. Ideal as a supplemental roughage source for senior horses with no teeth. Fed soaked.
Contains balanced amino acids	<ul style="list-style-type: none"> Provides building blocks for improved muscle tone.
Unique chunk form	<ul style="list-style-type: none"> Induce chewing and slow rate of intake. Can be fed as a nutritious treat. Suite for ground feeding.
Guaranteed nutrient analysis	<ul style="list-style-type: none"> Provide a consistent level of balance minerals and vitamins for mature inactive horses. More consistent than hay.

Ingredients

Fibre	Soya Hulls, Dehydrated Alfalfa Meal
Protein/Amino Acids	DL-Methionine
Starch	
Fat	
Prebiotic	Yeast
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Selenium, Cobalt Carbonate
Multi-Attributes	Wheat shorts
Flavour/Binder	Flavouring, Pellet Binding Agent

* Ingredients are not in order of their inclusion rate.

- Purina recommends that you have your hay analyzed and balance your ration accordingly.
- If your horse rapidly consumes this feed and/or if hydration status of your horse is questionable, we recommend adding water to this feed or using other measures to ensure an appropriate rate of intake.
- Do not provide more than 0.5% of body weight of this feed at one time.
- Provide a source of fresh, clean water at all times.
- Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

SUPERFIBRA
Classic

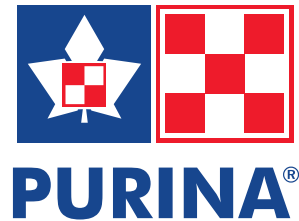


#35640 Premium

08-2024

SUPERFIBRA

#35650
Quality



Nature COMPLEMENT



Guaranteed Analysis

Protein	12.00%
Fat	2.00%
Fibre	30.00%

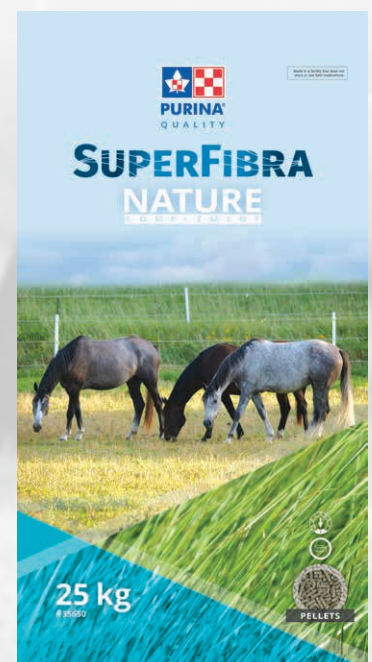
Directions for use

SuperFibra Nature Complement can be fed to all horses 6 months of age and older. A horse should consume a minimum of 1.5 to 3% body weight per day of long stemmed forage (hay/pasture). This product can replace up to 50% of the forage normally fed to an individual horse. A typical feeding rate is 0.5 to 1.5% body weight per day. For example, a 500kg horse receiving a minimum of 1.5% body weight (or 7.5 kg) in forage, can receive up to 0.75% body weight per day (or 3.75kg) of Simpli-T Nature Complement. The daily ration should be fed over a recommended 2 to 3 separate feedings. This high fibre product does not contain added vitamins or minerals, and should be fed along with a Purina complete feed. Feed in conjunction with hay and water. Provide free choice salt.

Pelleted product rich in fibre for horses over 6 months

SuperFibra Nature Complement is a pelleted feed with high levels of good quality digestible fibre. It can supplement or replace part of the daily hay ration in adult horses, senior horses and foals older than 6 months.

SuperFibra Nature Complement is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.



Characteristics

CHARACTERISTICS	ADVANTAGES
Contains a high level of fibre	• Can substitute up to 50% of daily hay ration.
Allows to decrease the amount of hay or pasture consumed	• Control the volume intake to prevent “hay bellies”.
Pelleted feed	• A dust-free feed, which is excellent for horses with respiratory conditions.
Easy to carry (compact product)	• Ideal for the travelling horse.
Guaranteed analysis	• Fibre source with consistent energy and protein levels.
Versatile feed	• Complements various nutrition program very well.
Green color	• Advantageous to the horse who is used to consuming alfalfa.

Ingredients

Fibre	Dehydrated Alfalfa Meal, Soya Hulls
Protein/Amino Acids	
Starch	
Fat	
Prebiotic	
Probiotic	
Vitamins	
Minerals	
Multi-Attributes	Wheat shorts
Flavour/Binder	Pellet Binding Agent

* Ingredients are not in order of their inclusion rate.

1. Purina recommends that you have your hay analyzed and balance your ration accordingly.
2. If your horse rapidly consumes this product and/or if hydration status of your horse is questionable, we recommend adding water to this product or using other measures to ensure an appropriate rate of intake.
3. Do not provide more than 0.5% of body weight of this product at one time.
4. Provide a source of fresh, clean water at all times.
5. Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

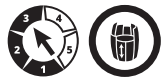
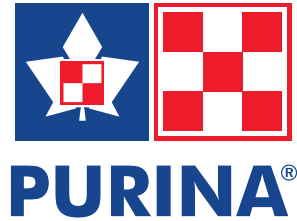
Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

SUPERFIBRA
Nature - Complement



Oatena

#3593



Guaranteed Analysis

Protein	13.00%
Fat	4.00%
Fibre	12.00%
Calcium	0.60%
Phosphorus	0.40%
Sodium	0.45%
Vitamin A	6500 I.U./kg
Vitamin D3	1200 I.U./kg
Vitamin E	220 I.U./kg
Selenium	0.30 mg/kg

Directions for use

Purina Oatena is recommended for the active leisure horse. Feed according to the following table. Individual horses may require feeding rate adjustment of plus or minus 15% of amount indicated.

Daily amount | kg

Horse Weight	300	400	500	600
Min. hay or equivalent pasture/horse/day	3.0	4.0	5.0	6.0
Purina Oatena	2.3	2.5	2.8	3.0

A versatile textured feed for the active leisure horse, it is ideal for boarding stables and riding schools.

Oatena is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.

Characteristics

CHARACTERISTICS	ADVANTAGES
Uses high quality ingredients	<ul style="list-style-type: none"> Highly palatable feed.
Convenient and versatile	<ul style="list-style-type: none"> Suitable for many types of horses. Ideal for the maintenance horse, the leisure horse and the active horse.
Available at a competitive price	<ul style="list-style-type: none"> Excellent value.
Contains balanced amino acids with added lysine and methionine	<ul style="list-style-type: none"> Provides building blocks for improved muscle and joint development.

Ingredients

Fibre	Soya Hulls
Protein/Amino Acids	Soya Bean Meal, DL-Methionine, L-Lysine
Starch	Ground Wheat, Whole Grain Oats, Flaked Barley
Fat	Soy Oil
Prebiotic	
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Choline Chloride
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Cobalt Carbonate, Calcium Iodate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Selenium
Multi-Attributes	Wheat shorts
Flavour/Binder	Molasses, Pellet Binding Agent

* Ingredients are not in order of their inclusion rate.

1. Purina recommends that you have your hay analyzed and balance your ration accordingly.
2. Do not provide more than 0.5% of body weight of this feed at one time.
3. Provide a source of fresh, clean water at all times.
4. Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

Oatena



#35902

Oleo Special



Guaranteed Analysis

Protein	13.00%
Fat	7.00%
Fibre	11.00%
Calcium	0.60%
Phosphorus	0.50%
Sodium	0.35%
Vitamin A	8400 I.U./kg
Vitamin D3	1450 I.U./kg
Vitamin E	170 I.U./kg
Selenium	0.40 mg/kg

Directions for use

Oleo Special is recommended for the pleasure or performance horse. Feed at a rate of 0.5 to 1.5 kg per 100 kg of body weight. Adjust feeding rate depending on forage quality, body condition and level of activity. Feed with good quality forage to ensure that the horse consumes 1% body weight (on a dry matter basis) in forages. Provide free choice salt.

Oiled Textured Feed

A versatile oiled textured feed for working adult horses and breeding horses. Ideal for boarding stables and recreational stables, from occasional breeding to active pleasure riding.

This feed is formulated with certified quality ingredients and is manufactured exclusively in our specialized and drug-free facility in Strathroy, Ontario.

Characteristics

CHARACTERISTICS	ADVANTAGES
Uses high quality ingredients	<ul style="list-style-type: none"> Highly palatable feed.
Contains Opti-Flakes – extruded corn	<ul style="list-style-type: none"> Highly digestible in small intestine. Helps minimize gut upset (colic) by preventing starch overload in the hindgut. Totally eliminating the negative aspect associated with whole and cracked corn. Optimally “cooked”. Reminiscent of the good old days of “cooking” grains. Palatable. No preservatives.
Convenient and versatile	<ul style="list-style-type: none"> Suitable for many types of horses. Provides essential nutrients for growth and milk production. Ideal for the pleasure horse.

Ingredients

Fibre	Soya Hulls
Protein/Amino Acids	Soya Bean Meal
Starch	Extruded Corn, Flaked Barley, Whole Grain Oats, Ground Corn
Fat	Soya Oil
Prebiotic	
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Vitamin B6, Folic acid
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Calcium Iodate, Cobalt Carbonate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Selenium, Organic Selenium
Multi-Attributes	Wheat shorts
Flavour/Binder	Molasses, Flavouring

* Ingredients are not in order of their inclusion rate.

1. These recommendations are based on feeding a forage equal or greater than 15% protein.
2. Amounts can vary depending on the hay. Purina recommends that you have your hay analyzed and balance your ration accordingly. In general, Optimal (35720) will better balance the ration of broodmares and foals than Equilizer (35710).
3. Do not provide more than 0.5% of body weight of this feed at one time.
4. Provide a source of fresh, clean water at all times.
5. Follow sound management practices along with disease and sanitation control measures. If there are any questions, contact your veterinarian, Purina dealer or Purina sales consultant.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

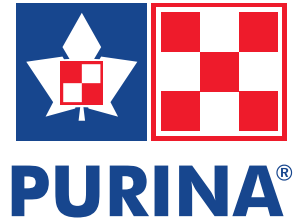
Oleo Special



SUPPLEMENTS

#35810

Pur-Athlete®



An extruded high fat supplement derived from vegetable and flaxseed (source of omega 3) and contains blood building nutrients (copper, cobalt, folic acid, Vitamin B12). In addition to improving skin, hair coat, hoof condition and muscle mass, research demonstrates that fat spares muscle glycogen. Pur-Athlete as a controlled NSC (sugars and starch) level of 17% max.

Analysis

Crude Protein (min.)	20.00 %	Phosphorus (actual)	0.60 %
Crude Fat (min.)	25.00 %	Sodium (actual)	0.25 %
Crude Fat (max.)	27.00 %	Vitamin A (min.)	13000 I.U./kg
Crude Fibre (max.)	4.00 %	Vitamin D3 (min.)	1300 I.U./kg
Calcium (actual)	0.70 %	Vitamin E (min.)	500 I.U./kg

Feeding rates

Administer 500 grams (per 500 kg body weight) orally with each meal, twice daily.

Characteristics

Formula provides a unique and innovative mix of concentrated nutrients	<ul style="list-style-type: none"> • Replenishes and maintains the animal's body stores. • Helps speed up recovery from stressors such as those caused by training, competition, illness or excessive weight loss.
High levels of protein and energy	<ul style="list-style-type: none"> • Helps build muscle mass.
Contains nutrients which promote red blood cell production (copper, cobalt, folic acid, vitamin B12)	<ul style="list-style-type: none"> • Builds cardiovascular capacity in animals under heavy exercise regimens.
Highly palatable extruded supplement	<ul style="list-style-type: none"> • Texture and taste designed to stimulate intake even after a strenuous training session or competition.
Contains 25–27% fat (vegetable oil and flax seed)	<ul style="list-style-type: none"> • Improves skin, hair coat and hoof condition. • Rich in omega-3s for optimal health and improved immune function.
Source of vitamins and trace minerals	<ul style="list-style-type: none"> • Essential for optimal metabolic function.



Ingredients

Fibre	
Protein/Amino Acids	Soybean Meal, DL-Methionine, L-Lysine, Corn Gluten Meal
Starch	Ground Corn
Fat	Soya Oil, Flaxseed
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Choline Chloride, Pantothenic Acid, Folic Acid, Vitamin B6
Minerals	Salt (Sodium Chloride), Calcium Carbonate
Multi-Attributes	Wheat shorts, Wheat germ
Flavour/Binder	

* Ingredients are not in order of their inclusion rate.

1. Purina recommends analyzing your hay and balancing the ration accordingly.
2. Feed clean and dust free hay in sufficient amount daily. Feeding poor quality hay or feeding inadequate amounts could cause colic and other digestive upsets.
3. Offer source of salt (NaCl) daily as well as plenty of fresh and clean water at all times.
4. Make any feed change gradually over a 7 to 10 days period.
5. Daily ration should be divided into 2 and pre-ferably 3 separate feedings or more.
6. Use a scale to weigh your feed so you know exactly how much your horse is being fed. Do not feed by volume.
7. Purina recommends to feed a maximum of 0,5% of body weight per meal in concentrates.
8. These recommendations are intended as a guide. They should be adjusted to variables of management, environment and individual needs. Consult your Purina Equine Consultant if necessary.
9. Follow sound management practices along with optimal preventive veterinary medicine.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

SUPPLEMENTS

#35820



BMZ[®]

BMZ is a biotin, methionine and zinc (organic) supplement. A quality hoof care topdress formulated specifically to increase hoof growth and integrity. Methionine is interchangeable with cysteine, a major amino acid of keritin, which is the main protein in connective tissue, such as hoof wall. Research has demonstrated that hoof integrity is directly related to zinc content in the hoof wall.

Analysis

Biotin (min.)	667 mg/kg
Zinc (actual)	5000 mg/kg

Feeding rates

Administer ½ scoop (15 grams per 500 kg body weight) orally with each meal, twice daily. 30 gram scoop enclosed.

Note: Feeding vitamins other than vitamin A, D, E, riboflavin, pyridoxine and thiamin to horses may not have a beneficial effect.

Characteristics

20 mg of biotin per dose	• 15 to 20 mg of biotin per day is scientifically proven to enhance hoof integrity and growth.
Contains DL-Methionine	• Methionine is interchangeable with cysteine, a major amino acid of keritin, which is the main protein in connective tissue, such as hoof wall.
Contains zinc proteinate	• Chelation ensures enhanced digestibility and research has demonstrated that hoof integrity is directly related to hoof wall zinc content.
Contains dehydrated alfalfa meal as a carrier	• Enhanced palatability.
Manufactured in a plant with high standards of biosecurity and quality	• Consistent quality feed.
Manufactured in a 100% drug-free facility	• No risk of detrimental drug contamination. • Peace of mind.
Manufactured in Canada	• Minimizes transport cost. • Optimizes freshness.



Ingredients

Fibre	Dehydrated Alfalfa Meal
Protein/Amino Acids	DL-Methionine
Starch	Ground Wheat
Fat	Soya Oil
Probiotic	
Vitamins	Biotin
Minerals	Organic Zinc
Multi-Attributes	Wheat shorts
Flavour/Binder	Flavouring

* Ingredients are not in order of their inclusion rate.

1. Purina recommends analyzing your hay and balancing the ration accordingly.
2. Feed clean and dust free hay in sufficient amount daily. Feeding poor quality hay or feeding inadequate amounts could cause colic and other digestive upsets.
3. Offer source of salt (NaCl) daily as well as plenty of fresh and clean water at all times.
4. Make any feed change gradually over a 7 to 10 days period.
5. Daily ration should be divided into 2 and pre-ferably 3 separate feedings or more.
6. Use a scale to weigh your feed so you know exactly how much your horse is being fed. Do not feed by volume.
7. Purina recommends to feed a maximum of 0,5% of body weight per meal in concentrates.
8. These recommendations are intended as a guide. They should be adjusted to variables of management, environment and individual needs. Consult your Purina Equine Consultant if necessary.
9. Follow sound management practices along with optimal preventive veterinary medicine.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

SUPPLEMENTS

#35830

Horse Plus®



Horse Plus is a broad spectrum B-vitamin supplement with added vitamins C and E. Horse Plus is a necessary blood building and anti-stress supplement to counteract the detrimental effects of intense exercise and ensure continual optimum performance. Horse Plus supports concentration and focus. Helps maintain proper immune functions and contains antioxidants.

Analysis

Vitamin B1 (Thiamine) (min.)	1 500 mg/kg	Vitamin B9 (Folic Acid) (min.)	500 mg/kg
Vitamin B2 (Riboflavin) (min.)	850 mg/kg	Vitamin B12 (min.)	3 500 mcg/kg
Vitamin B3 (Niacine) (min.)	1 500 mg/kg	Vitamin C (min.)	12 500 mg/kg
Vitamin B5 (D-Pantothenic Acid) (min.)	850 mg/kg	Vitamin E (min.)	11 100 I.U./kg
Vitamin B6 (Pyridoxine) (min.)	500 mg/kg	Vitamin K (min.)	250 mg/kg
Vitamin B7 (Biotin) (min.)	20 000 mcg/kg		

Feeding rates

Administer 1 ½ scoop (45 grams per 500 kg body weight) orally, with each meal, twice daily. 30 gram scoop enclosed.

Note: Feeding vitamins other than Vitamin A, D, E, riboflavin, pyridoxine and thiamine to horses may not have a beneficial effect.

Characteristics

Contains a full complex of B-vitamins	<ul style="list-style-type: none"> Stimulates appetite.
Contains riboflavin (B2), niacin (B3), pyridoxine (B6) and pantothenic acid	<ul style="list-style-type: none"> Essential for energy metabolism. Ensures the proper utilization of energy from the diet.
Contains thiamin (B1)	<ul style="list-style-type: none"> In addition to its role in energy metabolism, thiamin (B1) plays a role in the nervous system, which could be beneficial in horses that "tie-up".
Contains biotin	<ul style="list-style-type: none"> Essential for sound and healthy hoof growth.
Contains cyanocobalamin (B12) and folic acid	<ul style="list-style-type: none"> Essential for red blood cell (RBC) synthesis. Plays a role in the prevention of anemia.
Contains the anti-oxidants vitamin C and vitamin E	<ul style="list-style-type: none"> Combats the stress of strenuous exercise by scavenging free radicals. Enhances immune function.
Contains vitamin K	<ul style="list-style-type: none"> Essential for blood clotting. Could be beneficial to horses that bleed.
Pelleted and palatable	<ul style="list-style-type: none"> Mixes well with all feeds. Will not sift to bottom. Ensures consumption.
Manufactured in a plant with high standards of biosecurity and quality	<ul style="list-style-type: none"> Consistent quality feed.
Manufactured in a 100% drug-free facility	<ul style="list-style-type: none"> No risk of detrimental drug contamination. Peace of mind.
Manufactured in Canada	<ul style="list-style-type: none"> Minimizes transport cost. Optimizes freshness.



Ingredients

Fibre	Dehydrated Alfalfa Meal
Protein/Amino Acids	
Starch	Ground Wheat
Fat	Soya Oil
Probiotic	
Vitamins	Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Choline Chloride, Pantothenic Acid, Folic Acid, Vitamin B6, Beta-Carotene, Ascorbic Acid
Minerals	
Multi-Attributes	Wheat shorts
Flavour/Binder	Molasses, Calcium Propionate

* Ingredients are not in order of their inclusion rate.

- Purina recommends analyzing your hay and balancing the ration accordingly.
- Feed clean and dust free hay in sufficient amount daily. Feeding poor quality hay or feeding inadequate amounts could cause colic and other digestive upsets.
- Offer source of salt (NaCl) daily as well as plenty of fresh and clean water at all times.
- Make any feed change gradually over a 7 to 10 days period.
- Daily ration should be divided into 2 and pre-ferably 3 separate feedings or more.
- Use a scale to weigh your feed so you know exactly how much your horse is being fed. Do not feed by volume.
- Purina recommends to feed a maximum of 0,5% of body weight per meal in concentrates.
- These recommendations are intended as a guide. They should be adjusted to variables of management, environment and individual needs. Consult your Purina Equine Consultant if necessary.
- Follow sound management practices along with optimal preventive veterinary medicine.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

SUPPLEMENTS

#35850



Equi22[®]

Equi22 is a mineral and vitamin supplement that provides a concentrated source of magnesium, potassium, trace minerals and vitamins for growing horses 6 months of age and older.

Analysis

This feed contains added selenium at 4.00 mg/kg

Magnesium (actual)	2.50 %	Vitamin E (min.)	2 500 I.U./kg
Potassium (actual)	3.50 %	Vitamin K (min.)	50 mg/kg
Iodine (actual)	4.5 mg/kg	Vitamin B12 (min.)	500 mcg/kg
Iron (actual)	3 250 mg/kg	Thiamin (min.)	150 mg/kg
Copper (actual)	450 mg/kg	Riboflavin (min.)	100 mg/kg
Manganese (actual)	1800 mg/kg	Pantothenic Acid (min.)	250 mg/kg
Cobalt (actual)	4.5 mg/kg	Niacin (min.)	500 mg/kg
Zinc (actual)	1800 mg/kg	Folic Acid (min.)	2.5 mg/kg
Fluor (max.)	1.5 mg/kg	Biotin (min.)	5000 mcg/kg
Vitamin A (min.)	150 000 I.U./kg	Pyridoxine (min.)	150 mg/kg
Vitamin D3 (min.)	30 000 I.U./kg		

Feeding rates

Feed this vitamin and mineral enriched supplement to growing horses 6 months of age and older. Using the scoop supplied in the pail, feed up to 3 scoops per feedings, twice daily (ie. 6 scoops per horse per day) as a top dress or mix into the grain concentrate portion of the ration (each level scoop contains 30 grams). This quantity ensures that your horse receives the proper quantity of vitamins and minerals. Do not feed Equi22 on a free-choice basis, and keep stored in a safe place with the lid firmly attached.

Important

Feed salt on a free-choice basis separately. This product is designed as a supplement and not a replacement of a complete and balance grain-based feed. Feeding vitamins other than vitamin A,D,E, riboflavin, pyridoxine and thiamin may not have a beneficial effect.

Characteristics

Contains 22 added vitamins and minerals, including vitamin E	<ul style="list-style-type: none"> Increases vitamin and mineral intake for better health and appearance.
Contains highly palatable ingredients	<ul style="list-style-type: none"> Ensures palatability and consumption.
Fortified with biotin	<ul style="list-style-type: none"> Promotes healthy hooves. Promotes healthy hair coat.
Convenient and versatile	<ul style="list-style-type: none"> One product for a wide range of horses with different nutritional needs. Simplifies nutritional management of difficult horses.



Ingredients

Fibre	Dehydrated Alfalfa Meal
Protein/Amino Acids	
Starch	
Fat	
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Folic Acid, Vitamin B6
Minerals	Potassium Chloride, Magnesium Oxide, Calcium Iodate, Cobalt Carbonate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Selenium
Multi-Attributes	Wheat Shorts
Flavour/Binder	Pellet Binding Agent

* Ingredients are not in order of their inclusion rate.

- Purina recommends analyzing your hay and balancing the ration accordingly.
- Feed clean and dust free hay in sufficient amount daily. Feeding poor quality hay or feeding inadequate amounts could cause colic and other digestive upsets.
- Offer source of salt (NaCl) daily as well as plenty of fresh and clean water at all times.
- Make any feed change gradually over a 7 to 10 days period.
- Daily ration should be divided into 2 and pre-ferably 3 separate feedings or more.
- Use a scale to weigh your feed so you know exactly how much your horse is being fed. Do not feed by volume.
- Purina recommends to feed a maximum of 0,5% of body weight per meal in concentrates
- These recommendations are intended as a guide. They should be adjusted to variables of management, environment and individual needs. Consult your Purina Equine Consultant if necessary.
- Follow sound management practices along with optimal preventive veterinary medicine.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

SUPPLEMENTS

#35860

Equi-Eez[®]



Equi-Eez is a mineral and vitamin supplement with no crude protein, fat or fibre content. It provides a concentrated source of macro minerals, trace minerals and vitamins for mature horses.

Analysis

This feed contains added selenium at 10.66 mg/kg

Calcium (actual)	10.50 %	Vitamin A (min.)	250 000 I.U./kg
Phosphorus (actual)	8.50 %	Vitamin D3 (min.)	50 000 I.U./kg
Sodium (actual)	4.00 %	Vitamin E (min.)	4 506 I.U./kg
Magnesium (actual)	2.00 %	Vitamin K (min.)	93 mg/kg
Sulfur (actual)	0.50 %	Vitamin B12 (min.)	830 mcg/kg
Potassium (actual)	0.5 %	Vitamin C (min.)	500 mg/kg
Iodine (actual)	7.5 mg/kg	Thiamin (min.)	311 mg/kg
Iron (actual)	8 000 mg/kg	Riboflavin (min.)	201 mg/kg
Copper (actual)	750 mg/kg	Pantothenic Acid (min.)	452 mg/kg
Manganese (actual)	3 000 mg/kg	Niacin (min.)	898 mg/kg
Cobalt (actual)	7.5 mg/kg	Folic Acid (min.)	24 mg/kg
Zinc (actual)	3 000 mg/kg	Biotin (min.)	12 900 mcg/kg
Fluorine (max.)	500 mg/kg	Pyridoxine (min.)	271 mg/kg

Feeding rates

Feed to mature horses at a rate of 150 g/h/d. Feed as per ration recommendations from your local Purina Farm Consultant. Feeding vitamins other than A, D, E, riboflavin, pyridoxine and thiamin may not have a beneficial effect. Provide a fresh, clean source of water at all times.

Characteristics

Contains 22 added vitamins and minerals, including vitamin E	<ul style="list-style-type: none"> Increases vitamin and mineral intake for better health and appearance.
Contains highly palatable ingredients	<ul style="list-style-type: none"> Ensures palatability and consumption.
Fortified with biotin	<ul style="list-style-type: none"> Promotes healthy hooves. Promotes healthy hair coat.
Convenient and versatile	<ul style="list-style-type: none"> One product for a wide range of horses with different nutritional needs. Simplifies nutritional management of difficult horses.



Ingredients

Fibre	
Protein/Amino Acids	
Starch	Ground Corn
Fat	
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Folic Acid, Vitamin B6, Ascorbic Acid
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Potassium Chloride, Calcium Sulphate, Magnesium Oxide, Mono Dicalcium Phosphate, Calcium Iodate, Cobalt Carbonate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Selenium, Organic Selenium
Multi-Attributes	
Flavour/Binder	

* Ingredients are not in order of their inclusion rate.

- Purina recommends analyzing your hay and balancing the ration accordingly.
- Feed clean and dust free hay in sufficient amount daily. Feeding poor quality hay or feeding inadequate amounts could cause colic and other digestive upsets.
- Offer source of salt (NaCl) daily as well as plenty of fresh and clean water at all times.
- Make any feed change gradually over a 7 to 10 days period.
- Daily ration should be divided into 2 and pre-ferably 3 separate feedings or more.
- Use a scale to weigh your feed so you know exactly how much your horse is being fed. Do not feed by volume.
- Purina recommends to feed a maximum of 0,5% of body weight per meal in concentrates
- These recommendations are intended as a guide. They should be adjusted to variables of management, environment and individual needs. Consult your Purina Equine Consultant if necessary.
- Follow sound management practices along with optimal preventive veterinary medicine.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

SUPPLEMENTS

#35870



EZ Balance™

EZ Balance is a pelleted mineral and vitamin supplement for all types of horses. It is a low calorie, low sugar/starch product that contains a concentrated source of minerals and vitamins.



Guaranteed Analysis

This feed contains added selenium at 8 mg/kg

Crude Protein (min)	10 %	Fluorine (max.)	50 mg/kg
Crude Fat (min)	5 %	Potassium (actual)	1 %
Crude Fiber (max.)	5 %	Iodine (actual)	22.3 mg/kg
Calcium (actual)	9 %	Iron (actual)	3 581 mg/kg
Phosphorus (actual)	4.5 %	Copper (actual)	766 mg/kg
Sodium (actual)	1.7 %	Manganese (actual)	2 405 mg/kg
Magnesium (actual)	2.5 %	Vitamin A (min.)	150 000 I.U./kg
Sulfur (actual)	0.8 %	Vitamin D3 (min.)	40 000 I.U./kg
Cobalt (actual)	6.37 mg/kg	Vitamin E (min.)	4 000 I.U./kg
Zinc (actual)	2 535 mg/kg		

Feeding rates

Feed this mineral to horses at a rate of 150 to 200 grams/head/day. Feed as per ration recommendations from your local Purina Farm Consultant. Provide a fresh, clean source of water at all times. Important: Feed salt on a free-choice basis separately. This product is designed as a mineral and not a replacement of a complete and balanced grain-based feed.

Characteristics

Low sugar/starch content. Also identified as low glycemic or low NSC (nonstructural carbohydrates).	<ul style="list-style-type: none"> Ideal for insulin resistant, Cushing's and EPSM (Equine Polysaccharide Storage Myopathy) horses.
Low-calorie with elevated minerals and vitamins. Very nutrient dense	<ul style="list-style-type: none"> With the low feeding rate provides negligible caloric intake. Ideal when there is a need to cut calories but not nutrition. Easy-keepers, ponies and miniature horses.
Contains organic copper, zinc, manganese	<ul style="list-style-type: none"> Increases absorption and enhances trace mineral bioavailability to improve immune response and overall health.
Contains organic selenium	<ul style="list-style-type: none"> Effective antioxidant. Helps repair the oxidative stress of exercise. Helps supports immune functions and overall health.
Contains 8 added B-vitamins (including biotin)	<ul style="list-style-type: none"> Supports optimum metabolic efficiency. Promotes hoof and overall health and vitality.



Ingredients

Fibre	
Protein/Amino Acids	Soya Bean Meal, Dried Brewers Yeast
Starch	
Fat	Soya Oil
Prebiotic	
Probiotic	
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Folic Acid, Vitamin B6
Minerals	Salt (Sodium Chloride), Calcium Carbonate, Potassium Chloride, Calcium Sulphate, Magnesium Oxide, Mono Dicalcium Phosphate, Defluorinated Phosphate, Calcium Iodate, Cobalt Carbonate, Copper Sulphate, Ferrous Sulphate, Manganese Oxide, Zinc Oxide, Organic Manganese, Organic Zinc, Organic Copper, Organic Selenium
Multi-Attributes	Wheat Shorts
Flavour/Binder	Molasses, Flavouring, Pellet Binding Agent, Flow Agent

* Ingredients are not in order of their inclusion rate.

- Purina recommends analyzing your hay and balancing the ration accordingly.
- Feed clean and dust free hay in sufficient amount daily. Feeding poor quality hay or feeding inadequate amounts could cause colic and other digestive upsets.
- Offer source of salt (NaCl) daily as well as plenty of fresh and clean water at all times.
- Make any feed change gradually over a 7 to 10 days period. The ration should be served in a minimum of 2, ideally meals per day, or even more if needed.
- Daily ration should be divided into 2 and pre-ferably 3 separate feedings or more.
- Use a scale to weigh your feed so you know exactly how much your horse is being fed. Do not feed by volume.
- These recommendations are intended as a guide. They should be adjusted to variables of management, environment and individual needs. Consult your Purina Equine Consultant if necessary.
- Follow sound management practices along with optimal preventive veterinary medicine.

Caution

Directions for use must be carefully followed. Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

SUPPLEMENTS

#35880

Horse-Shield®



Horse-Shield is an immunity, vitality and digestibility supplement for horses. It is enriched with vitamins and contains viable yeast culture (*Saccharomyces cerevisiae*) and Diamond V XPC Ultra. Horse-Shield supports cognitive and behavioural functions in situations associated with travel, training and competition, red blood cell production, immune system health, cartilage and joint health, hind gut microbiome and healthy digestion and antioxidant activity in tissues. Horse-Shield is ideal for horses 6 months of age and older.



Analysis

Moisture (max.)	14.00 %
Vitamin A (min.)	52 000 I.U./kg
Vitamin D3 (min.)	10 000 I.U./kg
Vitamin E (min.)	1 000 I.U./kg

Saccharomyces cerevisiae 3.34 x 10⁸ cells/gram
(334 million) minimum CNCM I-1077

Feeding rates

Horse-Shield is an immunity, vitality and digestibility supplement for horses. 1 level scoop is 28 grams. Recommended serving is 3 scoops/500kg body mass. Provide 1.5 level scoops administered orally with the meal, twice daily.

Characteristics

Saccharomyces cerevisiae	<ul style="list-style-type: none"> Has been shown to increase fibre and phosphorus digestion and to improve protein utilization. Supports hindgut microbiome and healthy digestion.
Contains 12 added vitamins including vitamin E	<ul style="list-style-type: none"> To meet the nutritional requirements of the horse for improved performance, health and appearance. Supports antioxidant activity in tissues. Supports immune system health.
Palatable	<ul style="list-style-type: none"> To increase feed intake and maintain body condition.
Convenient and versatile	<ul style="list-style-type: none"> It can be fed to a wide range of horses.
Diamond V XPC Ultra	<ul style="list-style-type: none"> Supports cognitive and behavioural functions in situations associated with travel, training and competition. Supports cartilage and joint health.
Contains added B vitamins	<ul style="list-style-type: none"> Supports red blood cell production.

Ingredients

Fibre	Dehydrated Alfalfa Meal
Protein/Amino Acids	
Starch	Oat Flour
Fat	
Prebiotic	Yeast Culture Dehydrated
Probiotic	Live Yeast
Vitamins	Vitamin A, Vitamin D3, Vitamin E, Vitamin K, Riboflavin, Niacin, Thiamine, Vitamin B12, Biotin, Pantothenic Acid, Folic Acid, Vitamin B6
Minerals	
Multi-Attributes	
Flavour/Binder/Preservative	Dextrose, Diatomaceous Earth

* Ingredients are not in order of their inclusion rate.

- Purina recommends analyzing your hay and balancing the ration accordingly.
- Feed clean and dust free hay in sufficient amount daily. Feeding poor quality hay or feeding inadequate amounts could cause colic and other digestive upsets.
- Offer source of salt (NaCl) daily as well as plenty of fresh and clean water at all times.
- Make any feed change gradually over a 7 to 10 days period.
- Daily ration should be divided into 2 and pre-ferably 3 separate feedings or more.
- Use a scale to weigh your feed so you know exactly how much your horse is being fed. Do not feed by volume.
- These recommendations are intended as a guide. They should be adjusted to variables of management, environment and individual needs. Consult your Purina Equine Consultant if necessary.
- Follow sound management practices along with optimal preventive veterinary medicine.

Caution

Directions for use must be carefully followed.

This product is perishable. Store in a dry, well-ventilated area protected from rodents and insects.

This product should not be mixed in feeds before pelleting.



Digestive Balance

Digestive Balance is an oral gastrointestinal support supplement that supports gastrointestinal health, normal gastric pH and beneficial gut microbiome.

Guaranteed Analysis

Crude Protein (min.)	13.0%	Phosphorus (actual)	0.45%
Crude Fat (min.)	2.0%	Copper (actual)	150 mg/kg
Crude Fibre (max.)	17.0%	Zinc (actual)	550 mg/kg
Calcium (actual)	4.0%	Selenium (added)	0.1 mg/kg

Feeding rates

Administer top-dressed on the feed 360 grams per 250 kg body weight daily according to how many times per day the horse is normally fed:

Body weight (kg)	Grams top dressed on feed twice daily	Grams top dressed on feed 3 times daily	Grams top dressed on feed 4 times daily	Total grams per day
250	180	120	90	360
500	360	240	180	720
750	540	360	270	1080
1000	720	480	360	1440

Administer for 2 weeks or as recommended by a veterinarian.

Characteristics

Contains organic selenium	• Immunity and enhance absorption.
Contains zinc proteinate	• Chelation ensures enhanced digestibility.
Contains dehydrated alfalfa meal as a carrier	• Enhanced palatability.
Manufactured in a plant with high standards of biosecurity and quality	• Consistent quality feed.
Manufactured in a 100% drug-free facility	• No risk of detrimental drug contamination. • Peace of mind.
Manufactured in Canada	• Minimizes transport cost. • Optimizes freshness.

Having questions about your horse's nutrition?

Talk to one of our specialized Equine Nutrition Consultants via equipurina.ca/en/purina-connect/. We're here and happy to help.



Ingredients

Fibre	Soybean Hulls, Dehydrated Alfalfa
Protein/Amino Acids	
Starch	
Fat	Soybean Oil
Postbiotic	Yeast Culture Dehydrated
Vitamins	
Minerals	Calcium Carbonate, Calcified Red Seaweed, Copper Sulphate, Organic Zinc, Organic Selenium
Multi-Attributes	Wheat Shorts
Flavour/Binder	Vanilla Flavouring

* Ingredients are not in order of their inclusion rate.

1. Purina recommends analyzing your hay and balancing the ration accordingly.
2. Feed clean and dust free hay in sufficient amount daily. Feeding poor quality hay or feeding inadequate amounts could cause colic and other digestive upsets.
3. Offer source of salt (NaCl) daily as well as plenty of fresh and clean water at all times.
4. Make any feed change gradually over a 7 to 10 days period.
5. Use a scale to weigh your feed so you know exactly how much your horse is being fed. Do not feed by volume.
6. These recommendations are intended as a guide. They should be adjusted to variables of management, environment and individual needs. Consult your Purina Equine Consultant if necessary.
7. Follow sound management practices along with optimal preventive veterinary medicine.

Caution

Directions for use must be carefully followed.

Feed is perishable. Store in a dry, well-ventilated area protected from rodents and insects. Do not feed moldy or insect-infested feed to animals as it may cause illness, abortion or death.

BALANCING A FORAGE ONLY DIET

As equine enthusiasts, we know that providing plenty of good quality forage to your horse is essential for optimal health, both physiologically and psychologically. However, if your horse is an easy-keeper, and does not require the addition of a feed to maintain weight, is he getting all the nutrition he needs from his hay or pasture alone? What if you provide a trace mineral block in his stall or pasture?

The answer to these questions is “no”! Unfortunately, no matter what the quality of hay or pasture, there are still key nutrients that they cannot provide your horse and failing to supplement them can lead to deficiencies over time. These include vitamins, minerals and quality proteins (amino acids). Horses have a range of nutrient requirements to meet their daily needs, and if your horse is not provided these nutrients in sufficient quantities, they may experience deficiency symptoms. The severity of the symptoms depends on the degree of the deficiency and the time period over which they existed.

For the adult horse not in work, certain deficiencies can present as poor coat and hoof quality, or poor muscle tone. Others may have decreased appetite, compromised immune system, and poor performance and reproductive issues. For young and growing horses, or mares in foal or lactating, these deficiencies can inhibit healthy growth and development of the foal. It can also predispose the foal to certain diseases and or cause the mare to start depleting her own nutrient stores to meet the needs of her foal.

As a horse owner, you may realize that something is missing in the diet but may not fully understand what is missing and how to feed it. There are many options when it comes to feeding your horse. The instructions are often misinterpreted, but we can help!

THE MOST COMMONLY NEGLECTED NUTRIENTS ARE VITAMINS AND MINERALS!

Minerals can be subdivided into two groups: the macro-minerals, required in the diet and measured by grams per day, and the micro-minerals(trace), which are measured in mg per day. Macro-minerals include, calcium, phosphorus, sodium, potassium, magnesium, sulfur and chlorine. Trace minerals include iron, copper, zinc, manganese, selenium and cobalt. Defining the individual roles of each of these minerals is beyond the scope of this article, but the importance of each mineral in the right quantity and ratio to relating minerals is highly significant. The importance of the calcium/phosphorus ratio is well known. Specifically, the amount of a mineral in the diet can influence

the absorption of another. This balance between minerals must be taken into account if you want to ensure that your horse's diet is meeting it's needs.

When discussing balancing minerals, we also must discuss the hay analysis. How can you determine if your horse is getting everything it needs if you don't know what your hay is providing in terms of nutrients? The nutritional content of the minerals in hay varies from one hay to another, and the nutrient that varies the most is calcium. When feeding mares and foals, it is therefore particularly important to have their hay analyzed, if only to know the percentage of calcium and phosphorus in order to make the necessary adjustments in the ration to promote the healthy bone development of the foal.

One important trace mineral to take into consideration is selenium. In many parts of Canada, our soils contain little to no selenium and as a result, our pastures, hays and grains do not provide our horses with enough, if any, dietary selenium. Why is this important? Selenium is a key trace mineral that functions mainly as an antioxidant, working in conjunction with Vitamin E. This reduces the risk of certain muscle problems such as white muscle disease and exertional rhabdomyolysis syndrome. Please refer to our Selenium Article on our website for more detailed information or speak to your Purina Equine Nutritionist to ensure appropriate quantities are calculated.

Mineral imbalances can create deficiency symptoms as well. Too much phosphorus in a diet can create a calcium deficiency. Excess zinc can present as copper deficiency. Therefore, it is important to understand that when balancing a diet, adding one mineral without understanding it's interactions with other minerals is dangerous.

Finally, with regard to vitamins, it should be remembered that in theory, horses mainly require the fat-soluble vitamins A, D and E. Vitamin E functions within the immune system of the horse. One result of this function may be increased resistance to disease or stress. Vitamin E is highest in fresh forage, so if horses have limited access to green pastures, it will deplete their Vitamin E stored in adipose tissues, liver and skeletal muscles. In growing horses Vitamin E plays a key role in nerve and muscle development and function. Mares also have an increased requirement for Vitamin E due to rapid tissue synthesis by the foal in the last 2-3 months of gestation. Vitamin A is another fat-soluble vitamin that the horse is able to store in it's body. Fresh green forages will contain carotene, which can be converted to Vitamin A by the horse. However, once grass is cut for hay, the levels will start to deplete. Since we are required in Canada to feed hay for many months of the year, supplemental A is important to prevent deficiency. It is also important to note

that toxicity is possible with Vitamin A. Be aware of what you are feeding if you are adding vitamin supplements to already fortified products. In theory, good quality pasture can provide sufficient K and B complex. That being said, in Canada, our horses do not have access to quality pasture year-round, so supplementation could be beneficial to achieve optimum health.

Balancing the vitamins and minerals of the horse's whole food ration requires deep technical knowledge of nutrition and careful calculations that take a lot of time. A more realistic alternative to owners wishing to balance their horse's ration, is to choose a manufactured feed and or supplement specifically formulated to meet the vitamin and mineral requirements of a horse on a forage only diet.

What about that trace mineral block in the field? While they are convenient, trace mineral blocks are mostly salt (sodium chloride), and the levels of trace mineral in them are very diluted and will not meet the nutrient needs of your horse. Additionally, salt blocks will not meet your horse's sodium needs! Salt blocks are designed for cattle, who have a much rougher tongue than a horse. A horse's softer tongue cannot lick a salt block enough to meet their daily requirements. Loose salt should be provided free choice or better yet, add it to a daily ration.

So, what options do horses owners have to meet the vitamin and mineral requirements of the easy keeping horse on a forage only diet?

RATION BALANCERS - EQUILIZER and OPTIMAL offer a low calorie, low sugar and starch option in a convenient, easy to measure pellet form that will meet the vitamin, macro and micro mineral and protein needs of horses only receiving hay or pasture.

Equilizer is formulated with the mature horse in mind receiving most of their sufficient protein from their hay or pasture.

Optimal is suited for broodmares, growing horses, performance horses that require additional amino acid supplementation to

meet their elevated requirements. In some case where forage quality is very low in protein, it is also suitable for the average mature horse and senior horse.

Both products contain organic copper, manganese and zinc. This increases the absorption of these key trace minerals while both also contain organic selenium, which studies have demonstrated has increase absorption in broodmares and growing horses. Choosing a ration balancer compatible with the type of forage you have available is important. Having your Purina Equine Consultant test your hay is a good place to start and provides a lot of information.

SUPPLEMENTS: EZ BALANCE AND EQUI-EEZ

If the forages are very fortified and providing enough protein to the horse's diet, these two options will do a great job in balancing all the vitamins, micro and macro minerals your horse needs.

EZ BALANCE is a pelleted, low sugar and starch choice that is suitable for horses requiring a low NSC diet.

EQUI-EEZ is in a meal form that is economical and is flexible for people mixing on farm grains as well. Both products do not contribute any significant calorie or protein to the diet, and both contain organic selenium. Small feeding rates make them an excellent cost efficient alternative. Your Purina Equine Nutritional Consultant or Purina Connect can help you decide what product suits your horse's needs best.

In summary, no matter the quality of the hay provided, key nutrients are missing and must be supplemented to achieve optimum health and prevent deficiencies over time. It is important to pick a product formulated to meet the specific needs of your horse's life stage and activity level. Follow all feeding directions in order to ensure that your horse is getting all the nutrients he needs in sufficient quantities.

PREBIOTICS AND PROBIOTICS: THEIR IMPACT AND ROLE ON YOUR HORSE'S DIGESTIVE HEALTH

The health benefits of prebiotics and probiotics have become all the rage. For the past several years, probiotics have been added to many different kinds of yogurt, juices, and other food products found in the grocery store. It is increasingly common to find prebiotic and probiotic capsules in natural health food stores or pharmacies. But what do they contain for our four-hooved friends? How can pre and probiotics help horses?

Let's begin with a brief overview of the equine digestive system. Like humans, horses are mono gastric and possess a single stomach. That said, since horses are herbivores, their digestive systems are closer to those of cows. A horse's digestion system operates within two main sections, beginning with the stomach and small intestine and ending with the large intestine. In the stomach and small intestine, digestive enzymes do most of the work to digest the feed and assimilate the majority of nutrients. Next, in the large intestine, which includes the caecum and colon, the hay will be exposed to beneficial microorganisms and broken down through the fermentation process.

The large intestine contains billions of bacteria, protozoa, and fungi required to successfully carry out digestion (Sadet-Bourgeteau, 2012). Any source of digestive stress, including a change in food (either hay or feed), an increase in stress levels or a course of antibiotics can destroy good bacteria and stimulate lactic acid production, causing pH levels to drop. All this will lead to an imbalance of intestinal flora. Disrupted intestinal flora can trigger a wide range of problems including the taking over of pathogenic bacteria (e.g. Salmonella), founder, diarrhea and gas colic.

Knowing this, how can we maintain the health of our horse's intestinal flora? The answer lies in the gut: prebiotics and probiotics. But what exactly is a prebiotic? Basically, it's a sugar (e.g. oligosaccharide, polysaccharide) which the horse does not break down. The sugar acts as a substrate that promotes the growth of certain bacteria in the colon. When added to food, prebiotics are not digested by the small intestine. Instead, they travel to the colon where they play a key role in ensuring the proliferation of beneficial bacteria within the intestinal flora. In short, prebiotics are substances that serve as food for good bacteria (Thomas 2009). Prebiotics, which include MOS's (mannan oligosaccharides), act indirectly on intestinal flora health. When prescribed as a preventative measure, prebiotics

reduce the harmful effects of pathogenic bacteria such as E. Coli and Salmonella by preventing their adhesion to cells of the intestinal epithelium (NRC 2007). To further promote intestinal health, prebiotics also stimulate the proliferation of beneficial bacteria (Thomas, 2009). Additionally, when horses ingest grain or hay containing mycotoxins, MOS binds to the toxin and prevents the horse from absorbing the harmful substances (NRC, 2007). Studies have also shown that foals born from mothers who have been given prebiotic supplements possess increased levels of antibodies, especially the immunoglobulin M (NRC, 2007).

Now let's have a look at probiotics. According to the World Health Organization (WHO), probiotics are living microorganisms that are beneficial to the host's health when administered in sufficient quantities. For our purposes, the host is our horse. The Association of American Feed Control Officials (AAFCO) uses the term *direct fed microbials (DFM)* to designate several types of bacteria (probiotics) including *Lactobacillus acidophilus*, *Lactobacillus casei*, *Bifido bacterium bifidium* and *Enterococcus faecium*. Among their many functions, these probiotics work to improve digestive health by promoting the digestion and absorption of nutrients. This way the food the horses consume will be much more effective. By reducing variations in pH levels, DFM's also decrease the risk of the intestinal flora going out of balance due to a change in exercise or diet, especially for horses whose food intake is composed primarily of starch. Similar to prebiotics, probiotics prevent and combat pathogenic bacteria (NRC, 2007). By adhering to the intestinal membrane, probiotics prevent E. Coli, Salmonella and Clostridium from attaching to the intestinal lining and gradually destroying it. Probiotics also play a major role in breeding horses. By increasing nutrient absorption, they help to boost the mare's milk production. As the nursing foal's energy goes towards developing its gastrointestinal and immune system, it is common for it to suffer from intestinal imbalances. Foals can begin to take probiotics as early as a few weeks into life, thereby decreasing their incidence of diarrhea.

Because probiotics are living organisms, they need to be protected from the production process when they are included in a feed's ingredients. For this reason, they are not added to extruded horse feeds since they would be destroyed by the high temperatures required for extrusion.

How should we use prebiotics and probiotics? According to studies, consistent supplementation produces better results than intermittent use.

When is my horse likely to require support from probiotics? The many examples include during a stressful situation, a major

athletic feat, a long journey, following a course of antibiotics, when an older horse has difficulty maintaining its body condition, when the ration being served is high in grains, or when the gastrointestinal tract is overloaded. Thus, foals, brooding mares and older horses alike can all benefit from probiotics.

Where can I find probiotics?

Purina horse feed contains all the benefits of pre and probiotics!
Look for the following icons on our packaging!



Bibliography

National Research Council (NRC). 2007. *Nutrient Requirements of Horses* (6th revised edition). Washington, DC, United States: The National Academies Press. p. 341.

SHELTON, J. Direct-fed microbials in equine feed. *Cargill Animal Nutrition*, p. 2.

SADET-BOURGATEAU, S., & JULLIAND, V. (2012). La diversité de l'écosystème microbien du tractus digestif équin. *INRA Prod. Anim.*, 25 (5), pp. 407-418.

THOMAS H.S. (2009). Probiotics and Prebiotics. *The Horse*, p. 8

TOPLINE IS KEY TO HORSE WELL-BEING

By Katerine Pard, agr.

A poor topline is commonly viewed as a result of lack of exercise, inadequate saddle fit or genetics. However, nutrition is also an essential, and often overlooked, element to consider when looking for a solution to improve a horse's topline and overall muscling.

WHAT IS THE TOPLINE?

The topline is the group of muscles in the horse's back running from the withers to the croup. These are vital muscles that affect performance and may cause lameness.

To evaluate topline muscling, a scale ranging from A (full muscling over the entire length of the back) to D (no topline muscling) can be used. Three areas are assessed: the withers, the back and the croup. Each area is worth a point. With 3 points, the horse scores an A; with 2 points, a B; with 1 point, a C. Three negative points result in a D. **It is interesting to know that while a horse will gain fat from front to back, muscle mass increases from the back to the front. In other words, a horse will build muscle from the hindquarters to the withers.**

BODY CONDITION SCORE, MUSCLE MASS AND DIET

Body condition and muscle mass should not be confused. A horse with poor muscling might still have a good body condition score (BCS). However, if a horse is too thin, it will have a harder time gaining muscle mass. At the other end of the spectrum, a horse that is too fat may appear to have a good topline, but if it has a BCS of 7 or more on a scale of 9, the topline could be simply covered by fat, which is, quite frankly, much less useful to a working horse!

How can nutrition help muscle development? By providing the necessary building blocks! Indeed, exercise alone is not enough to build muscle mass. Exercise will stimulate the growth existing muscle fibres, but it cannot form new ones. Protein, and most importantly, quality amino acids are needed to build new muscle. A working horse which lacks sufficient quality protein may even lose muscle mass, not to mention suffer from other possible consequences, including a lack of appetite, weak hooves, a dull coat, etc.

WHAT IS QUALITY PROTEIN?

Proteins are chains of amino acids. Some of these amino acids are produced by the horse's metabolism. Others, known as limiting amino acids, must come from the horse's diet. Limiting amino acids are essential for normal body function and for the

maintenance and development of muscle mass. To be adequately absorbed by the body and to play their role, amino acids must be combined in the correct proportions. Let's take the alphabet to illustrate this. If you have many consonants but no vowels, you will not be able to form a word. The same goes for limiting amino acids; if you do not have them all, not all functions can be fulfilled.

Limiting amino acids are found in the horse's diet when it is fed quality ingredients. Such ingredients include soybean meal that is high in lysine and corn gluten that contains methionine. Hay does contain protein, but few limiting amino acids and grain contains very little protein. Amino acids in pure form may be added to feeds to increase the amount provided in the diet.

Based on a survey of American Association of Equine Practitioners (AAEP), 70% of equine veterinarians consider that adequate muscling surrounding the horse's spine is key to equine well-being.

To know if your feed contains limiting amino acids, you will need to ask for an ingredient list because the guaranteed analysis on the label reveals very little information. As a matter of fact, the calculated crude protein gives no information on the source or the quality of the protein. Mills base their assessment on the level of nitrogen in the feed to calculate the levels of crude protein. Since most proteins contain 16% nitrogen, the total nitrogen content in the product is divided by 0.16 (e.g. a food containing 1.6% nitrogen would have a crude protein content of 10%). This calculation method is dictated by the regulatory bodies.

The way the feed is processed must also be considered to make sure a feed not only contains enough limiting amino acids, but is also highly digestible. For example, if it was cubed at too high a temperature, a feed will become less digestible, and the protein will be less available. The same phenomenon occurs when hay has heated up.

The best time to serve protein is 45 minutes after exercise: this is when nutrient absorption is at its maximum, and the horse's recovery will be optimal. Serving protein before exercise will have very little impact as limited protein absorption or muscle production occurs during exercise. A horse should therefore be fed a high-quality protein meal as soon as it has resumed its normal heart and respiratory rate.

BEWARE OF MYTHS

It is a common misconception that some breeds or lines are less likely to develop a large muscle mass. Horses of all breeds can build muscle but there will be variations in the type and composition of muscle fibres they will develop.

Be cautious of so-called miracle products said to promote muscle development. Creatine, for example, has no effect on the muscle development of horses since it is not plant-sourced and therefore it is very poorly assimilated. Another product that

is sometimes used is gamma oryzanol. Studies have shown that it is not effective at increasing muscle mass, but that it may help reduce muscle damage during exercise.

IN CONCLUSION

For a strong topline and well-toned muscle, exercise and a good saddle fit count, but do not underestimate the importance of amino acids, the essential building blocks of muscle tissue!

HEALTHY HOOVES NEED GOOD NUTRITION

No hoof, no horse! Horse people understand perfectly well this old adage! But what are a horse's real nutritional needs for healthy feet, and when should adding a hoof supplement be considered?

A horse's foot is quite a complex system, with internal and external structures working in unison. The foot supports the horse's weight, while enabling the animal to be mobile; its strength and integrity begin at the cellular level thanks to the proper synthesis and organization of various nutrients.

Let's take a look at the hoof and the tissues that compose it. The hoof forms a capsule around the foot. Its structure is quite hard and strong, while remaining flexible and is therefore able to change shape under the horse's weight, while withstanding the various impacts to which it is subjected. The dermis, the part that attaches the hoof to the third phalanx (coffin bone), consists mainly of collagen, a tissue whose role is to fill, support and protect. The dermis needs to be flexible to allow the hoof and bone of the foot to move in every direction under the effect of the horse's weight. The dermis consists of nerves that control the blood flow and of numerous blood vessels that nourish the foot.

The catch phrase for healthy hooves is nutritional balance. It is important to ensure that the horse's daily diet is providing it with sufficient nutrients to prevent occurrence of the various foot-related ailments. The nutrients needed for the development and maintenance of strong healthy hooves are succinctly described here.

AMINO ACIDS AND ENERGY

- The amino acids that form the various proteins are mostly used to synthesize collagen. More specifically, certain sulfured amino acids, such as methionine, allow the synthesis of intracellular substances that help "cement" the cells together and also allow the synthesis of structural proteins such as keratin. Keratin is particularly important, since it is the main protein of the tissue forming the wall of the hoof. Also, the fact that the amino acid methionine contains sulfur is beneficial, as sulfur is responsible for the bonds that provide stiffness and resilience to the hooves.
- A methionine deficiency, in addition to affecting the integrity of the hoof, can interfere with growth and lead to poor stress tolerance as well as skin problems.
- Like protein, energy is also an essential element, since, without energy, no metabolic functions are possible. In fact, apart from water, of course, energy and protein are the main so-called "limiting" nutrients, because, if they are not provided to the horse in sufficient quantities, the quality of the hoof will be deficient no matter how many vitamins and minerals the animal receives in its feed ration. The horse's primary sources of energy are fiber (hay, pasture, soy hulls, beet pulp), starch (grains) and fat (plant source).

MINERALS

- One mineral that is especially involved in the development and maintenance of the hoof is zinc. Zinc plays a role in the health and integrity of hooves by promoting the division and protection of the cells of the dermis and the synthesis of the proteins. A clinical study has in fact shown that the quality of the hoof is directly related to its zinc content. Furthermore, zinc stimulates the synthesis of collagen present in significant quantity in the dermis.
- Other minerals that are of specific account in regard to the quality of the hoof are copper, manganese and selenium. Their action is especially beneficial to hoof health because of their antioxidant properties which protect the cell membrane. Also, copper, in addition to contributing to the formation of collagen and elastin (blood vessel membrane), contributes to the formation of disulfide bonds in the keratin which improves hoof quality.
- Clearly, if there is not a sufficient quantity of these minerals in the ration or, if their interactions are not balanced, hoof problems may arise down the road. These mineral deficiencies can also affect the horse's coat, lead to joint disorders and impair wound healing.

VITAMINS

- The topic of hooves cannot be addressed without talking about biotin. Clinical studies have shown the beneficial effects of biotin in the restructuring of the hoof horn, more specifically the hoof wall. Used over a long period of time, it contributes to repairing horn deficiencies. Served alone, biotin has shown to be somewhat effective but, served together with methionine, the results are even more conclusive. Having said this, since biotin is difficult for the horse to absorb, it is important that the horse consume enough to obtain the desired effect.
- Other vitamins also contribute to maintaining hoof quality, notably vitamin E, a powerful antioxidant which, like selenium, manganese and copper, protects the cell membrane. Vitamin C, involved in the production of collagen and the maintenance of the integrity of the blood vessels, and vitamin A, active in the maintenance of the integrity of the epithelial tissue, tissue formed of one or more layers of cells, are also essential to maintaining healthy hooves.
- For badly damaged hooves, adding a biotin, methionine and zinc-based curative supplement, such as Purina's BMZ, is necessary until the condition is resolved. Besides adding BMZ, it is important that the horse's current feed ration be analyzed to ensure that it is indeed meeting all of its nutritional requirements, especially with respect to vitamins and minerals; if the horse has serious hoof problems, it is unlikely that its nutritional needs are being met.

- A complete supplement such as Purina's Equilizer (for adults) or Optimal (for mares and foals) will need to be added to their daily diet. Do not hesitate to contact our Purina equine consultants. They will be pleased to work with you and your farrier to ensure optimal hoof health. Once the horse's daily ration is complete and balanced according to its needs, major health problems will be past history, provided, of course, that farrier care remains regular and constant and is done by professionals
- Biotin cannot be toxic to the horse since any excess will be eliminated in its urine. There is no need however to serve it to your horse if it is already receiving all the nutrients it needs in its ration in a supplement tailored to its requirements.
- Watch out for interactions between the various minerals. Supplementing with the minerals discussed in this article without taking into account their various interactions can do more harm than good. For instance, feeding too much zinc compared to copper will affect copper absorption and, conversely, too much copper in the ration in respect of the amount of zinc will reduce the absorption of the zinc. In both cases, reduced absorption can lead to serious deficiencies. When in doubt, don't hesitate to contact one of our specialized equine consultants.

KEY POINTS TO REMEMBER

- The antioxidant properties of selenium are important to the maintenance of the hoof's integrity; sufficient quantities of this mineral must therefore be served in the ration. However, be careful not to exceed the horse's specific requirements, since selenium is the first mineral to become toxic when overused. One of the symptoms of selenium toxicity is the appearance of cracks and desquamation in the hoof horn. The other main symptoms are lameness and loss of hair in the horse's tail and mane. The symptoms of selenium deficiency are muscle cramping, white muscle disease, poor stress tolerance, decreased immune function and sub-optimal performance. That being said, selenium deficiency occurs much more frequently in the horse than excess selenium.
- If the condition of a horse's hooves requires the addition of a curative supplement, recommend supplements like BMZ which, apart from biotin, contains methionine and zinc, the latter chelated to increase digestibility. Keep in mind however that, if a horse is receiving a complete and balanced daily ration tailored to its requirements, for example by using Equilizer or Optimal, a specific supplement for hooves is usually not necessary. The appropriate serving of Equilizer or Optimal will be determined by the horse's weight, level of daily exercise and the amount of complete feed it is receiving every day. Purina's equine nutrition consultant is certainly the best placed to make the appropriate nutritional recommendations.

DIFFERENT FEED TEXTURES... WHY?

Considering all the types of feed that are available to you, how do you choose the ideal one for your horse? Should you opt for a textured feed or an extruded feed? Should the textured feed be whole-grain, cracked or flaked? The aim of this article is to make it easier for you to choose by providing you with a better understanding of grain processing techniques and their effect on a horse's well-being.

To facilitate your understanding of the importance of the different grain processing techniques, let's take a look at how the horse's digestive system works. If it had a choice, the horse, like its ancestors, would eat fresh grass for up to 18 hours a day; the horse's digestive tract – stomach, small intestine, large intestine and cecum – being perfectly designed for assimilating this fibre almost continuously. However, this same digestive tract is not very efficient when confronted with a meal that is low in fibre but high in starches (grain), as is sometimes the case for horses with high calorie requirements.

GRAIN PROCESSING AND FEED TEXTURES

Mechanical grain processing principally includes the actions of rolling or cracking the grain, as in rolled oats and cracked corn. These basic types of processing break the outer seed coat, making the starch more accessible for digestion in the small intestine, particularly where corn and barley are concerned. Unfortunately, the simple mechanical processing of barley and corn, even if it improves the pre-cecal digestibility of the starches slightly, is often inadequate when the horse is fed a relatively large volume of the grain at each meal. The situation is different for oats, because it is a softer grain and the starch is more easily digested in the small intestine. In fact, the mechanical processing of oats increases the pre-cecal digestibility of starch by barely 2 to 3%. For this reason, and because it improves the feed's appearance by reducing the presence of the dust, we, at Purina, prefer to use whole oats rather than rolled oats.

THERMAL PROCESSING

Thermal processing, such as grain flaking, goes further than simple mechanical processing. Indeed, the use of steam heat during processing allows the grain to be pre-digested, so to speak. Heat gelatinizes the grain, making it more accessible for pre-cecal absorption. With corn and barley, flaking is a necessity for equine nutrition because it greatly improves digestibility of the starches in the small intestine, compared to whole and even cracked corn or barley. We are talking about 60% improvement in starch digestibility approximately, which is not to be overlooked, especially for horses with a past history of diarrhea, gas and/or gas-colic. While they cost more, feeds that contain flaked, rather than whole or cracked grain, are a wise choice.

PELLETING AND PELLET FEEDS

Pelleting feed ingredients is more complex than heat processing. It implies grinding the ingredients (grain, fibre, fats, vitamins and minerals, etc.) into fine particles, then mixing and compacting

the particles, and steam heating them at high temperatures. The resulting mash is then pushed through a pellet die. The action of grinding the grain into fine particles causes gelatinization of the starches and increases the feed's overall digestibility. One of the main advantages of pellets over textured feeds (with grains) is that it makes it impossible for the horse to sort through the feed for preferred ingredients; all of the feed ingredients are in every pellet and every bite of the ration is therefore complete. Also, pelleting allows the conscientious feed manufacturer to use fibre-rich ingredients, which improves the feed's nutritional value.

In addition, pellets are often low-dust, and since their moisture level is low, they are more resistant to mould in hot weather and won't freeze during the long winter months.

Pellet size can vary from one feed to the next. Larger pellet sizes, for example chunks, have the advantage of generally slowing the horse's feed intake. No matter what the pellet size, pelleted feeds can be moistened to make them easier to eat for young horses, senior horses, or horses with dental problems. Integri-T feed should always be served wet because of its high percentage of superior-quality fibre.

EXTRUSION AND EXTRUDED FEEDS

Extrusion is the most recent processing technique for animal feed. It is the technique most often used in dog food manufacturing. Like pelleting, extrusion begins with grinding and mixing the ingredients. The use of steam heat and pressure, in conjunction with extremely high temperatures, allows more extensive gelatinization of the grain starches than with thermal processing and pelleting. The mash that results from these various stages is forced through a machine called an extruder; and more steam and water are added to the mix. A die is used to give the particles their desired shape and when they exit the extruder and are exposed to the air, they literally pop as they expand.

Extrusion is the best process for pre-cecal digestibility of starches. It is therefore especially indicated for horses with digestive problems, such as diarrhea, gas and gas-colic. Research has also shown that because the starches are more readily available to the horse, extruded feeds in general offer superior digestibility. Indeed, cornstarch is said to be three times more digestible in the horse's small intestine if it is extruded; this means that you can feed smaller amounts of extruded feed and still maintain the same performance.

Apart from its exceptional digestibility, the advantages of extruded feed are similar to those of pellets. What's more, because of the size of the particles, extruded feed can slow the horse's feed intake by nearly 50%, thus reducing the risk of colic and choking. In some cases, extrusion, because the ingredients are cooked, leading to denaturing of the protein, is also thought to eliminate certain food allergy symptoms.

Those who worry about vitamin loss as a result of the extrusion process can relax. While this may be true, given that the ingredients are cooked during the process, the conscientious manufacturer makes up for the loss by adding more vitamins.

That being said, the different steps in the extrusion process and the sophisticated equipment that is required means higher manufacturing costs than for textured or pelleted feeds. However, for many, the higher price is amply justified by the knowledge of a lower risk of starch overload in the large intestine, and by the fact that smaller amounts are used.

TEXTURED FEEDS (SWEET FEED)

Textured feed, often called sweet feed, was the first horse feed commercially available on the market. At one time – and still today occasionally – sweet feed referred to a simple mix of oats, corn and molasses, a nutritionally incomplete product due to the vitamin and mineral deficiencies of these grains. These days, in addition to grain and molasses, textured feeds generally include a pellet containing vitamins and minerals (pre-mixes). Various other ingredients may be added depending on the type of horse it is intended to feed, among others, fat and yeast.

A quality textured feed should, at the very least, contain heat-processed grains (flaked barley and/or corn, extruded corn), round oats to avoid the dust of rolled oats, a controlled starch level, as well as a significant percentage of digestible fibre and fat. Don't hesitate to ask your feed supplier about these different elements which say a lot about product quality. And remember, textured feeds, even though they all look alike at first glance, are not all created equal! One must look beyond the percentage of protein...

The main advantage of textured sweet feed is the palatability conferred by the molasses in the product; some finicky horses, especially horses stressed by the demands of high performance, will in fact only eat sweet feed. However, because of its high moisture content, it can easily go mouldy in hot weather, and will freeze quickly when the temperature drops below zero.

MULTI-PARTICLE FEEDS

Multi-particle feeds, generally pelleted, also contain extruded particles. They therefore offer the advantages of both pelleting and extrusion. In this regard, Purina offers the Evolution line,

complete feeds that nourish the horse through every stage of life: Maternity, Juvenile, Sport Elite and Senior. Trimax is a multi-particle feed designed for performance horses. In addition to being high in fibre and fat, with a controlled starch level, all of these multi-particle feeds contain added yeast culture, prebiotics, probiotics, Omega 3 and B Vitamins, and feature extruded particles that improve the feed's overall calorie and vegetable fat content. For these reasons, these feeds remain very effective, as well very safe for the digestive health of the horse. Like extruded feeds, multi-particle feeds are high-end products and therefore cost more.

AND GRAIN SERVED AS IS?

Grains are good **ingredients** for a commercial complete feed, but the same grains, served «as is» to a horse, will not provide adequate nutrition because they are incomplete.

Take the case of oats, which in spite of affording satisfactory digestibility for the small intestine – as long as the horse has good teeth – remain low in protein and calcium. The amount of vitamins they supply is also negligible. The small percentage of calcium in oats leads to an imbalance in the calcium-phosphorus ratio which is contraindicated for the horse. What's more, the energy source available to the horse from oats is starch, known frequently to cause excitability problems in some horses. Plus the amount of fat, an extremely digestible calorie source with numerous benefits, is also negligible in oats and other grains.

In addition, serving a horse oats, or any other grain, without first having it analyzed for its nutritional quality could affect the nutritional balance of the ration. As well, not testing grains to determine the level of toxins they may contain remains very risky indeed. Depending on growing and harvesting conditions, overly high toxicity levels in grain can lead to health problems in the animal. Reputable feed manufacturers test the grain they use as their base product and if the grain does not meet pre-established quality standards, it is very simply rejected. This knowledge alone provides priceless peace of mind...

When the time comes to purchase your next bag of feed, remember that, texture aside, if the feed does not look very appetizing to you, and you have doubts about the quality of its basic ingredients, it is better not to serve it to your horses. Buy only good-quality products from reputable suppliers.

THE STARCH DIGESTION SITE

Starch, the main component of grain, is digested in the horse's small intestine but only a small quantity can be absorbed at one time. The starch that is not digested by the enzymes of the small intestine will travel to the horse's large intestine, which can unfortunately lead to a host of health problems; indeed, the large intestine, or colon, is designed for the fermentation of fibre, not starch. When there is an overload of starch in the large intestine, digestive problems can be expected, leading potentially to gas accumulation, hindgut acidosis, diarrhea, lactic acid accumulation, gas-colic and laminitis. It is precisely to minimize the risk of such digestive problems that the different grain processing techniques should be considered when selecting a feed.

CHANGES IN YOUR HORSE'S DIET

You may be thinking your horse is in need of a senior diet, or perhaps there is a new feed available that you believe is even better for your horse. Maybe you are no longer happy with your current feed. Or, your retailer no longer carries the product you were using. Whatever the reason, switching your horse to a new feed is a change that requires care and know-how.

It's important to transition your horse gradually over a 7-10 day period, gradually increasing the new feed and decreasing the old. Throughout the process, you'll want to watch your horse's body condition and adjust feeding rates as needed.

MIXING WITH CURRENT FEED – AN EXAMPLE PROCESS

If still have some of your current feed, here is an example of how to transition:

	Current Feed	New Feed
Day 1-2	80%	20%
Day 3-4	60%	40%
Day 5-6	40%	60%
Day 7-8	20%	80%
Day 9-10	0%	100%

NO CURRENT FEED AVAILABLE

Whether you just simply ran out, or your favorite feed has been discontinued or no longer carried by your retailer, sometimes you may not be able to mix their old and new feed slowly. While not ideal, if no current feed is available, you can still safely transition to the new feed.

Because you don't have any of the old feed to mix, you'll want to reduce the total amount you feed your horse, and gradually increase it again over 10 days using the new feed. It is a good idea to offer some extra hay or pasture-time during this transition, as well. Feed your horse the new feed as follows:

	% of recommend feeding rate of the new feed
Day 1-2	20%
Day 3-4	40%
Day 5-6	60%
Day 7-8	80%
Day 9	100%

While the above two scenarios provide an example, it may not be perfectly suited to all situations. Some horse owners choose to change between products by 1 cup per day, and make the transition over a longer period of time if they are feeding large quantities. If you are changing from a low non-structural carbohydrate (NSC) feed to a higher NSC feed, make the transition even more gradually. Same for a low fat to a high fat diet. Additionally, if your horse is a picky eater, or prone to digestive upsets, or colic, make the change over a longer period of time.

One other change in our horse's diets we often forget to take into account is changing hays! You would never change a feed suddenly, so why would changing hays be any different? Especially given that hays make up 60-95% of your horse's diet? Even if you always get your hay from the same supplier, hays will vary widely year to year. Moving barns? You can bet that the hays will be different, even if both barns have good quality hay. The energy and nutrient content in hay can vary drastically depending on the plant species, geography, soil conditions, plant maturity at harvest, climate conditions, baling and storage methods, etc. Even hay that comes out of the same field from consecutive cuttings can have large differences in quality and nutrient content that should be considered.

It is important to gradually transition from the previous hay to the new hay over a 2-3 week period. Just like when switching feeds, incrementally replace a small portion of "old hay" with the "new hay". Another change that should not be overlooked, it transitioning to and from pasture.

In the fall, in preparation for winter, horses that are only on pasture should have hay introduced gradually, before the pasture runs out! Pasture is very high in moisture, while hay is very low; a sudden change from pasture to hay can result in colic.

Inversely, in the spring, when starting to turn horses out on pasture for the first time, they should be fed hay first. Do not turn them out with empty stomachs! Initial grazing should be limited to 15 to 20 minutes and gradually increased each day by 15 minutes until the horses are out for about 4 or 5 hours, at which time they can be allowed unrestricted time. If horses are allowed too much initial grazing time, the risk of digestive disturbance is increased as it takes the microflora in the gut some time to adjust to the difference in forage source.

As horse owners, it is important to keep in mind that ANY sudden changes in diet, including fresh pasture and hay, can disrupt the environment in the gut where communities of microbes reside. Consequently, this disruption in the microbial population and digestive process can put the horse at risk for GI upsets (e.g. excessive gas production, colic, diarrhea, discomfort, etc.).

It takes approximately 3 weeks for the microbes in a horse's gut to adapt to dietary changes, thus making slow, gradual forage transitions over a 2-3 week period important to help prevent GI upset. When it isn't possible to make a full two week transition, then allow for as much of a gradual transition as possible even if it is only over 2-3 days. Providing dietary pre- and probiotics can also help support gut microbes through dietary changes especially if they are rapid.

In summary, no matter what the change, between different feeds, hays, or pasture, be sure to think about it ahead of time, and plan for it. Make sure you have enough of your previous feed or hay to make the transition to the new one. The more time you can give your horse's digestive system to adjust, the better it will be for their digestive health and can help reduce the risk of digestive upsets. As always, if you have any questions about making changes to your horse's diet, contact an Equine Nutrition Consultant. Purina has Equine Nutrition Consultants available through Purina Connect.

PREVENTING JOINT INJURIES IN THE PERFORMANCE HORSE

Though powerful, horses are also fragile. Since we are consistently pushing their limits, performance horses are the most vulnerable of all. The saying “illness comes on horseback but departs on foot” could easily be referring to the joint injuries that afflict far too many of our horses. Unfortunately, these injuries are quite difficult to treat. Our best option is to use nutrition as a simple and effective prevention strategy.

First off, all horses must be provided with a food program that is able to fulfill all of their nutritional needs. This includes sufficient quantities of water, energy (calories), fibre, vitamins and minerals. Each of these nutrients must not only be served in adequate quantities, but also according to the correct ratios.

Trace minerals such as copper, zinc and manganese may act as cofactors in the production of the tissues and structural materials required for building joints. Vitamin C is also necessary for the formation of collagen (Duren, 2005). Collagen is a family of fibrous proteins. The fibres in collagen allow cartilage to resist forces of tension; collagen's effect might be compared to a sort of glue. As for vitamin C, we require more research to determine its precise role.

During the first years of life, before your horse reaches performance age, ensuring adequate nutrition will prevent any developmental orthopedic problems caused by dietary deficiencies. Our equine advisers would be happy to help set you up with a complete and balanced nutritional program that meets your young horse's needs. By age two, foals are ready to gradually begin to train in preparation for their intended discipline.

Sport horses typically have higher nutritional needs, especially when it comes to vitamins and minerals whose minimum requirements increase with exercise. Compensatory supplements such as Equilizer and Optimal are excellent products which help balance your horse's ration and promote optimal health and performance.

CALORIC INTAKE

Body condition provides a clear indication as to whether or not your horse's ration contains enough energy (calories). Is your horse too fat, too thin or just right? A performance horse who expends a great deal of calories during training sessions will typically require more calories. To meet these needs, you can increase the amount of feed at each meal, add an additional meal, or choose a higher calorie feed such as the Trimax formula. Body condition is determined by evaluating the amount of subcutaneous fat present on six locations of a horse's body; using the Henneke scale, a horse will obtain a score anywhere

from 1 (emaciated) to 9 (obese). An adult horse's body condition score should fall between 5 and 6. For the performance horse, a score of 6 is desirable for beginning the competition season, allowing for a small margin of leeway in case of long journeys or other stressful situations.

Calories come in four different forms: protein, starches, fat and fibre. It is essential that the calorie source be as easily digestible as possible. Both protein and starch can cause behavioural changes in horses with stronger insulin responses. Fat and fibre provide long-term energy sources that will not affect your horse's behaviour.

Although its protein requirements are relatively low compared to other animals, a horse needs protein for the synthesis, development and repair of vital tissues such as muscles, tendons and ligaments. The majority of horses will also require a certain amount of starch in order to replenish their muscles' glycogen reserves which are expended during intense aerobic exercise. A ration that is high in fat will help horses to conserve muscle glycogen and build endurance. As a final point, fibre is necessary for maintaining a healthy digestive system.

To sum up, balancing your horse's caloric intake with these four main energy sources will allow your horse to fulfill its full potential.

OMEGA-3 INTAKE

As we have seen, fat provides an important source of energy. It is also essential in the metabolism of the liposoluble vitamins A, D, E and K. Alpha-linolenic acid (omega-3) and linoleic acid (omega-6) exist among the many fatty acids. Most commonly obtained in the form of flaxseed, omega-3 fatty acids provide an excellent source of polyunsaturated fats. Easily digested in the small intestine, omega-3s offer a cornucopia of health benefits.

Essential fatty acids should not be served in large, arbitrary quantities. Rather, you must aim to offer your horse the optimal balance of omega-6s and omega-3s. According to the most recent research, the ideal omega-6 to omega-3 ratio is said to be 3-5:1. This means that your horse's ration should contain 3 to 5 times more omega-6 fatty acids than it does omega-3s. Found in fodder and grains, omega-6s are already naturally present in your horse's food. For this reason, your horse's additional daily requirements will be higher in omega-3s. Ensuring the proper omega-6 to omega-3 ratio has many benefits, particularly when it comes to blocking intermediaries involved in the inflammation response. (Block, Katan & Van der Meer, 1996).

For anyone who owns a performance horse, one of the greatest challenges lies in preventing joint inflammation. Inflammation generally begins to affect a joint's soft tissues after the joint is subject to repetitive trauma or stress. As an example, reining consistently calls upon a horse's fetlock joints, knees and hocks. With omega-3s role in the inflammation response, a horse who regularly consumes the fatty acid will be better prepared for intense physical exercise (Wilson et al., 2003). Designed specifically for the performance horse, many of our feeds contain additional omega-3 sources. Try our Integri-T, Revelation, Trimax or Elite formulas. You will also find excellent omega-3 levels in Athlete, our specially extruded supplement. As another option, you can add flax oil or flaxseed to your horse's ration, boiled or ground for optimal results.

PURINA'S ADVICE

Protect your horses' joints by serving a preventative dose of balanced omega-3s. Opt for *Equilibrium Integri-T*, *Equilibrium Trimax*, *Omelene Sport Plus*, or any other feed from our *Evolution* line. The supplements *Equilizer* and *Optimal* also contain flaxseed. Incorporate approximately one cup of ground flaxseed to your horse's daily ration. Flaxseed should not be ground more than 5 days in advance. Your Purina equine adviser will be able to evaluate your horse's ration to determine more precise requirements.

Bibliography

- Blok, W. L., Katan, M. B. & Van der Meer J. W. (1996). Modulation of Inflammation and Cytokine Production by Dietary (n-3) Fatty Acids. *Journal of Nutrition*, 126(6), 1515-1533.
- Duren, S. (2005). Oral Joint Supplements: Panacea or Expensive Fad? In: J.D. Pagan (Ed.). *Advances in Equine Nutrition III*, 77-83.
- Wilson, K. R., Potter, G. D., Michael, E. M., Gibbs, P. G., Hood, D. M., & Scott, B. D. (2003). Alteration in the Inflammatory Response in Athletic Horses Fed Diets Containing Omega-3 Polyunsaturated Fatty Acids. *Proceeding of the 18th Equine Nutrition and Physiology Society Symposium*, 20-25.

PREVENTING RECURRENT EXERTIONAL RHABDOMYOLYSIS (RER)

Recurrent Exertional Rhabdomyolysis (RER) is a chronic, debilitating condition that can shatter all of your hopes for your competition or racehorse. Fortunately, you can take preventative measures to help your horse transcend the odds and perform at its full potential.

Although your horse may appear to be in excellent physical condition, very soon into exercise, he shows signs of discomfort and muscle stiffness, sometimes accompanied by profuse sweating. If your horse is Thoroughbred, Standardbred or Arabian, it is likely suffering from RER, better known as tying up, the generic term used to describe the incidence of hard and painful muscles during equine exercise.

WHAT IS RER?

Not to be confused with Polysaccharide Storage Myopathy (PSSM), a different form of tying up, Recurrent Exertional Rhabdomyolysis is explained by **an inability to regulate fluctuating calcium ions within skeletal muscle cells**. Quite simply, the endoplasmic reticulum, an intercellular vacuole containing calcium, releases more of the mineral than it is able to reabsorb. This excess excitability of the endoplasmic reticulum causes certain muscle fibres to remain permanently contracted, generating the typical clinical symptoms of RER. The following list describes RER's clinical signs, which may vary in intensity:

- exercise intolerance
- stiff gait
- high pulse and respiratory rate
- profuse sweating
- muscle stiffness
- muscle pain
- trembling
- refusal to move forwards
- myoglobinuria

RER is most common in physically fit and talented horses who possess a nervous or excitable temperament. Episodes of RER often seem to be provoked by a stimulating or stress-inducing event.

Thoroughbreds have the highest predisposition to RER, particularly fillies in training. That said, the syndrome also affects Standardbreds and Arabians, and to a lesser extent, Warmbloods. In racing Thoroughbreds, RER episodes tend to arise during training after the jockey has pulled back on the reins to slow down the horse or halt its gallop.

The most recent research suggests that chronic rhabdomyolysis, including RER, has genetic causes, though at this point, there is no test to confirm this. For the most part, diagnosing RER depends on analyzing each horse's history, clinical symptoms and blood levels of certain proteins including CK and AST.

SIMPLE PREVENTION METHODS

Multiple preventative approaches need to be put into place to reduce the incidence of RER episodes. The stabled horse's environment, its training program and food ration must become daily priorities for the horse owner or caregiver. The right medication at the right time can also help manage the condition. Your equine veterinarian will be able to prescribe the most suitable medication for your horse.

➤ Environment

Horses who are at risk of developing RER must absolutely be kept in a calm, familiar environment. To reduce all unnecessary stress, it is useful to maintain as much of a routine as is feasible. Whenever possible, allow the horse to keep the same stall and stable neighbours, and ensure that its outdoor companions remain consistent. We strongly recommend daily outings, during which your horse can relax and run free in its "very own" paddock. Such outings are as beneficial to the horse's physical health as they are to its mental well-being.

➤ Exercise

In addition to free time outside, horses afflicted with RER require daily exercise sessions. Days without training need to be kept to a minimum. It is important to adapt the training program so that it allows the horse to remain as relaxed and calm as possible. Exercise should be interspersed with periods of relaxation. Be sure to also include an adequate warm-up period and active recovery phase.

➤ **Food**

Because a horse's food ration plays an extremely important role in RER episodes, we must monitor nutrition very strictly. A horse's temperament seems to have a direct impact on incidences of tying up, and the muscle damage that follows. For this reason, we must ensure that the ration does not exacerbate a horse's excitability, in part by minimizing carbohydrate intake (sugars and starches). A diet high in plant-based oils and digestible fibres will help compensate for the ration's lack of carbohydrates and provide the horse with enough calories for its activity level. That said, do not reduce the ration's starch levels too drastically; starch remains essential to maintaining the correct levels of muscle glycogen, which the horse requires for performance.

Since RER causes significant oxidative damage, it is imperative that the horse's ration be complete and balanced at all levels, and that it includes vitamins and minerals. Once you have established nutritional balance, a crisis may still call for increased supplementation of vitamin E and selenium. These two powerful antioxidants will help to minimize damage in case of a RER episode.

As a final point, your horse requires a minimum of 60 g of salt per day, available in the form of salt blocks or granulated salts. Serving salt at each meal will promote water consumption and help to prevent the excitability that is sometimes caused by dehydration. On hot and humid days, it is also a good idea to incorporate sufficient quantities of commercial electrolytes.

PURINA'S ADVICE

Purina has two specialized feeds geared towards horses affected by RER: **Equilibrium Trimax** and **Equilibrium Integri-T**. Ideally, the quantity of feed should be divided into several small meals per day.

- **Equilibrium Trimax:** Made up of 12% plant-based oils, and high in digestible fibres (beet pulp), this feed meets all the needs of your racing, competitive or performance horse. Its reduced carbohydrate content (sugars and starches) still allows for the replenishment of muscle glycogen levels.
- **Equilibrium Integri-T:** This feed boasts one of the lowest starch and sugar levels on the market, perfect for the RER afflicted horse with lower energy requirements. Consisting of 6% plant-based oils and high in digestible fibres (soybean hulls and beet pulp), **Equilibrium Integri-T** offers the optimal number of effective calories.

FEEDING THE BROODMARE

For a horse owner, is there an event more special than the birth of a foal? All the effort, worry and money spent are quickly forgotten when a foal is born problem-free. Although there are many uncontrollable factors with reproduction, many problems may be prevented with proper nutrition.

BODY CONDITION

From conception through pregnancy and lactation, the broodmare should maintain a body condition score of 6 (the ribs can be easily felt but not seen). If the mare is too thin, reproduction will be the least of her worries: she is in survival mode. If she lacks the calories she needs for herself, she will not have a foal that will demand more of her. At the other end of the spectrum, an overweight mare risks developing hormonal imbalances which are linked to fertility issues.

Good body condition is essential throughout the pregnancy. Loss of condition indicates that the mare is not receiving enough calories for herself, let alone the developing foal. On the contrary, if the mare is overweight and becomes insulin resistant, the foal may develop bone growth problems which may cause OCD (osteochondrosis dissecans). In fact, in most cases of OCD, the disease appears during pregnancy and is present at birth.

During lactation, the mare's body condition must remain as stable as possible. If she lacks the calories she needs to maintain her own weight, her milk production may be disrupted. Energy requirements increase substantially during this time: a lactating mare's needs are similar to those of a race horse! On average, a mare will need approximately 2 kg additional feed during the first three months of lactation. However, there is no need for weight gain if her body condition score was acceptable at foaling –otherwise she will have to lose the excess later on anyways.

The source of calories is also important to consider. According to several studies, a feed containing high levels of carbohydrates may also affect the foal's development and increase the risk of OCD. It is thought that the insulin response following the intake of large carbohydrate-rich meals is similar to that of an insulin resistant mare. Fat and fibre are preferable energy sources.

PROTEIN

Protein quality is more important than quantity. Proteins are made of chains of amino acids (there are 22 different amino acids). Some of these can be produced by the horse (non-essential amino acids) and others must come from the diet (essential amino acids). Of these essential amino acids, lysine and methionine will be the first limiting amino acids in a pregnant mare and should ideally be added to her ration. They can be found in certain feeds and supplements and, as such, should appear in the ingredient list. Unfortunately, horse feed labels do not always provide the list of ingredients, so do not hesitate to ask your supplier for it.

These same limiting amino acids are equally essential during lactation. A deficiency will result in decreased milk production.

A good way to roughly assess a mare's protein and amino acid intake is to check her topline. Poor muscling along the topline is indicative of poor quality or insufficient protein intake. A mare with a poor topline may also have trouble carrying the weight of her foal.

MINERALS AND VITAMINS

All minerals and vitamins are important starting at conception and continuing through gestation and lactation, although in different amounts and ratios for each stage. Even when a mare's body condition and topline seem adequate, she can still suffer from deficiencies –in particular selenium and vitamins– if she is on a hay-only diet. She requires at least a complete supplement. At the time conception, the mare's diet should match her level of exercise, body condition and weight. Ideally, her nutrition should be optimal many months before conception. It may take up to three months to overcome a mineral or vitamin deficiency which may cause fertility problems. Complex B vitamins such as folic acid contribute to the development of healthy follicles and improve fertility.

During the first months of gestation, the mare's mineral and vitamin needs are similar to those of an open mare in the same level of work. It is at the end of the pregnancy (during the last five months) that her requirements skyrocket, for calcium and phosphorus especially, since this is the stage where the foal's bones are formed.

The mare's requirements will also be very high during lactation because large amounts of minerals and vitamins are excreted in her milk. The foal needs high levels of calcium and phosphorus for bone formation, selenium and vitamin E for its immune system, etc. Additionally, complete and balanced nutrition will ensure optimal immune function and the mare will produce higher quality colostrum (an antibody-rich milk).

Chelated minerals, organic selenium in particular, are especially useful in equine reproduction. Minerals in this form are more easily absorbed, cross the placental barrier more readily, and are found in higher concentrations in the mare's milk. Be sure to look for terms such as zinc methionine or selenium yeast in ingredient lists and avoid mineral sources such as zinc oxide and sodium selenite.

OTHER THINGS TO KEEP IN MIND

Some plants that can be found in hay, such as tall fescue, may contain endophytes (a fungus) which produce chemicals resembling mare hormones. This is why extra care must be given to the choice of forage plants used for broodmares. Grains like oats, barley and corn may also contain mycotoxins (toxins produced by fungi) and must be tested for toxicity levels. These toxins are known to cause diarrhea in horses in general, but in broodmares they may cause return of ovulation, irregular cycles, abortions and dystocia (placental abruption for example).

WHAT ABOUT OMEGA-3?

Omega-3 fatty acids are useful at every stage of the reproduction cycle: from conception to lactation. Among other benefits, they help improve cognitive function resulting in a smarter foal that learns quickly!

BASIC NUTRITION PROGRAM FOR THE BROODMARE

For the 7 first months of gestation:

- Provide the same feed as before the pregnancy
- Supplement with minerals and vitamins as needed, according to the amount of feed served
- Aim for a body condition score of 6

During the last trimester (three months) of gestation:

- Based on the body condition score and the requirements, gradually transition to a lactation feed
- Increase the mineral and vitamin intake significantly
- Change supplement if necessary, so that the complete ration reaches a calcium/phosphorus ratio around 2:1
- Aim for a body condition score of 6

During lactation

- Increase calorie intake (on average 2 kg of feed per day; always taking into account the mare's body condition and milk production)
- Increase the mineral and vitamin intake, aiming for a 2:1 calcium/phosphorus ratio and a 4:1 zinc/copper ratio.
- Increase the protein intake to promote milk production

Consider asking a technician or agronomist to help you establish a customized feeding program for your mare. All these variables will be much easier to calculate with a ration balancing program! We also highly recommend conducting a hay analysis so that the content of the main portion of the broodmare's ration is known.

And finally, to put the odds in your favour, don't forget to consult your veterinarian about implementing a deworming and vaccination program for both the pregnant and lactating mare and the growing foal.

UNDERSTANDING SELENIUM

Lately, the death of horses due to selenium deficiency has received quite a bit of press on social media as well as on TV. Unfortunately, the cases that made the headlines were not the only ones reported. Many questions have yet to be answered and all sorts of information has been passed around—some accurate and some less so. Let's have a closer look at the situation and try to make sense of it as scientifically as possible.

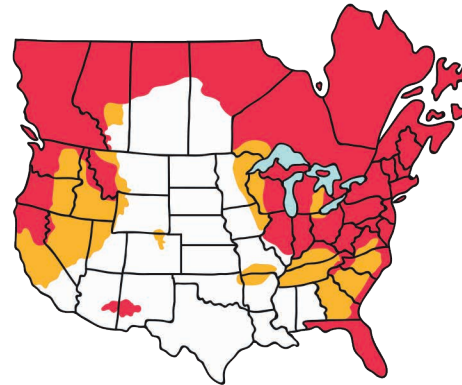
WHAT IS SELENIUM?

Selenium is a trace mineral (or micromineral), which means it is essential to bodily functions but in very small quantities as opposed to macrominerals such as calcium or magnesium which must be provided in larger amounts. Even though selenium is essential, it can quickly become toxic in excess. It should be noted, however, that **cases of deficiency are much more frequent** than cases of toxicity, especially in this province.

Selenium functions mostly as an antioxidant. It works in partnership with vitamin E to protect cell membranes from free-radical damage. Selenium and vitamin E work best when both are sufficient in the horse's diet.

The problem with selenium is that it is absent—or present in infinitesimal amounts—in our soils, as it is the case in all of Eastern North America. As a result, it is not found in plants, such as hay or grain, that grow in these areas. To find hay that contains selenium, we would have to turn to the central regions of the continent.

One question often comes up: How about wild horses? Well, there were no horses—wild or not—in America before Europeans settlers introduced them, and the breeds we've developed were chosen for their performance rather than their hardiness. Most of them wouldn't survive a year in the wild, even in the best conditions.



Selenium in American Soils

- = usually scarce
- = sometimes scarce
- = seldom scarce

WHAT ABOUT CONCENTRATES?

The large majority of concentrated feeds sold in Quebec are supplemented in selenium. But is the horse given enough concentrate to meet its needs? The recommended feeding rates printed on feed tags guarantee that the mineral and vitamin requirements will be met, **however that does not mean that your horse actually needs that much fed on a daily basis. Only body condition should determine your horse's need for concentrates.** Concentrates should mainly be a source of calories. This means that if you feed your horse less than the recommended levels and that its body condition is adequate (neither too thin nor too fat), the ration should be supplemented.

The recommended amounts of feed per horse per day may seem surprising but when formulating a feed, we must take into account the fact that some horses can be fed up to 8 kg of concentrates a day. If the selenium content was too high, some horses would risk toxicity. It is easier to supplement a ration than to remove selenium from a formula...

As for horses who are kept on hay or pasture only? Even the best quality forages in Quebec need to be supplemented. It is preferable to use a complete vitamin and mineral supplement than a simple vitamin-E-and-selenium supplement since all 17 minerals and vitamins are important and this way other deficiencies can be prevented as well.

SYMPTOMS OF DEFICIENCY

Foals are more likely to develop a deficiency than adults, and this is true for selenium as much as for other essential elements.

The effect can be dramatic: some foals die within 24 to 48 hours after birth. If the dam's selenium intake was insufficient during her pregnancy, the foal is very likely to develop what is referred to as white-muscle disease. Affected foals have malformed muscles, are weak, have difficulty standing and their heart eventually gives out. Broodmares suffering from deficiency have decreased fertility and risk retained placenta. Symptoms of deficiency in adult horses include a depressed immune system, poor performance, stiffness after exercise, more frequent episodes of recurrent exertional rhabdomyolysis (RER or tying up), impaired cardiac function, difficulty swallowing and paralysis.

ORGANIC SELENIUM OR SODIUM SELENITE?

The two main differences between these two compounds are their source and absorption rates. Sodium selenite or selenate comes from the mining industry which means they are mineral in origin. Organic selenium (also known as selenium yeast) is similar to the selenium found in plants. This type is particularly important if your water contains high concentrations of iron or sulfur. These minerals are powerful oxidizing agents that aggregate with mineral selenium and precipitate¹, thus making the selenium unavailable to the animal. Organic selenium does not react with other oxidizing minerals and stays readily available to the horse.

In addition, the organic form seems to trigger a better response in pregnant mares and foals. It crosses the placenta more readily and reaches higher concentrations in the milk than sodium selenite.

Exercise caution with organic selenium formulated for cattle because there is always a possibility for contamination by ruminant specific drugs.

WHAT ARE MY HORSE'S NEEDS?

Even though the precise selenium requirements are unknown, the NRC recommends 0.1 mg/kg DM, or approximately 1 mg/day for a 500 kg horse. The NRC's recommended values are known to prevent classic deficiencies, but a study on selenium supplementation (Janicki et al., 2001) suggested that an intake of 3 mg/day would not only prevent deficiencies, it would also result in optimum immune function. Naturally, selenium requirements increase with the level of exercise. The toxicity threshold is set at approximately 5 mg/day.

CONCLUSION

Selenium is a trace mineral essential to the horse but is practically non-existent in our soils. It must consequently be added to your horse's diet, alongside the 17 other minerals and vitamins that are crucial to its health. Sufficient supplementation is important since mild deficiencies can cause problems that are hard to detect such as a depressed immune system and reduced stamina.

¹ To precipitate: To cause a substance to separate from solution or suspension. Precipitation: The action by which a substance separates from its solvent and is deposited in solid form at the bottom of the recipient.

ALL ABOUT NUTRITION MYTHS

There are many persistent myths in the horse world. People do all kinds of things by habit or by relying on advice from friends, such as a neighbour for whom a certain solution worked, or a coach who hasn't necessarily seen the specific horse. This is particularly true in equine nutrition. Here we debunk ten of these especially tenacious myths:

MYTH #1 **OATS AND SIMPLE GRAINS ARE MORE "NATURAL" FOR HORSES THAN COMMERCIAL FEEDS**

False. These are more traditional foods, but they are not more natural! Horses originally evolved to survive on grass. Even dry hay is not quite "natural" for horses, as its water and vitamin contents are considerably different from that of fresh grass. Simple grains are good basic ingredients for a feed, but they are incomplete in themselves. Additionally, corn and barley, if served uncrimped, are not very digestible and may increase the risk of gas colic. In my practice, I often hear people say, "My father and grandfather have always fed oats and their horses have always looked fine!" And indeed, in the past, giving oats was the best option to put weight on a horse because it is the only grain that can be safely fed unprocessed. However, oats contain only little protein, few minerals and no vitamins. Nowadays, there are many ways to process grains to improve their digestibility, and other calorie sources are now available, such as vegetable oil.

MYTH #2 **MY HORSE NEEDS ONLY HAY, HE IS FAT AND IN GOOD CONDITION AS IT IS.**

False. Hay does not provide all the necessary nutrients for a horse's health. No hay produced in Quebec, no matter how high the quality, will contain selenium, sufficient trace elements (i.e., zinc), or vitamins after a just a few weeks of storage. While it is quite possible that a horse may survive several years on a hay-only diet, in the long run, the lack of selenium will have an effect. After several years, selenium deficiency may even cause death in horses and each year, unfortunately, fatal cases are in fact reported. Broodmares and foals are particularly vulnerable to such deficiencies. It is also to be noted that a fat horse is not necessarily a healthy horse.

MYTH #3 **WILD HORSES SURVIVE WITHOUT SUPPLEMENTS OR FEED AND THEY ARE PERFECTLY FINE.**

False. First of all, most wild horses probably would not survive very long without human intervention. In fact, a portion of the wild horse herds in America are rounded up each year to be fed and for population control purposes to ensure their survival. There were no horses in America before the arrival of European settlers, and the so-called wild horses that roam North America are the descendants of domesticated horses. Furthermore, nowadays, there are very few horses whose genetics really stem

from "wild" strains, such as the Mongolian Przewalski horses. European soil also contains much more selenium than in North America and the climate there allows horses to graze for a greater part of the year, conditions that are more favourable for their survival. And don't forget that horses in the wild will rarely live up to 30 years!

MYTH #4 **IT IS NORMAL FOR AN OLD OR HOT-BLOODED HORSE (LIKE A THOROUGHBRED) TO BE A LITTLE THIN.**

False. All horses can put on weight. It's not a question of age or temperament, it is a matter of providing a proper and balanced diet. To adequately feed a horse, it is important to consider its age, level of activity, temperament, the state of its teeth, etc. Of course, an older horse who has poor teeth will be more expensive to keep in good condition than a young horse, but that wouldn't be a good excuse to keep him too thin, would it?

MYTH #5 **I DO NOT NEED TO SUPPLEMENT MY HORSE; HIS FEED IS COMPLETE.**

True and false. It all depends on the amount he's fed. Theoretically, all feeds are complete when they are fed according to the recommendations printed on the label. However, very few horses will require as much feed. Of course, there is no need to overfeed them and make them obese to meet their mineral and vitamin requirements! If a horse requires less feed than the amount recommended on the label and his condition is good, simply add a vitamin and mineral supplement to the ration.

MYTH #6 **IF I DO NOT FEED CONCENTRATES TO MY HORSE, HE WILL NOT HAVE ENOUGH ENERGY TO PERFORM.**

False. Concentrated feeds are used to increase the calorie intake of a ration. If a horse stays in good condition when fed only hay, why would we add extra calories to the diet? While a mineral and vitamin supplement is necessary, and a protein source could also be beneficial in some cases, obesity will certainly not improve his performance!

MYTH #7 **IF I FEED MY HORSE RIGHT BEFORE A COMPETITION, HE WILL BE SLUGGISH AND WILL PERFORM POORLY.**

True and false. It will depend on what is fed. It is best not to give a concentrated feed right before exercise, especially if it is rich in carbohydrates, because the following insulin response will interfere with the body's use of the glucose stored in the muscles. This effect lasts four to five hours and will decrease performance, especially during anaerobic exercise (short duration and high intensity). On the other hand, if the horse has free-choice access to hay, his stomach acidity will stay under control, so he will be more comfortable and more likely to perform.

MYTH #8 **ALFALFA IS DANGEROUS FOR HORSES.**

False. Myths surrounding alfalfa are widespread: it is said to cause laminitis and excitement, and I have even heard that it could cause blood in the urine... Alfalfa is not evil! It is an excellent food source that contains more calories, protein and calcium than timothy hay. Of course, if you have a Haflinger that gets fat by simply looking at straw, it would be a poor choice since the extra calories may cause obesity and insulin resistance, which can then lead to laminitis, but alfalfa is not the problem here. However, if a horse requires high energy intakes, alfalfa is an excellent choice to reduce the amount of concentrates required. Moreover, thanks to its protein and calcium content, it will reduce stomach acidity more effectively than grass hay.

MYTH #9 **A BLOCK OF SALT IS A BLOCK OF SALT, NO MATTER WHAT COLOUR IT IS.**

False. Coloured salt blocks contain trace elements such as iodine and cobalt that can become toxic when consumed in large quantities. Salt is only sodium chloride, so it's best to use a white salt block. The problem with these salt blocks is that they frequently result in insufficient or irregular intakes. A good way to ensure that a horse regularly consumes an adequate amount of salt would be to add mixing salt or livestock salt directly into the daily ration. Two tablespoons a day will meet the needs of most average-sized adult horses.

MYTH #10 **USING BEET PULP ALONE IS A GOOD WAY TO PUT WEIGHT ON MY HORSE.**

False. Beet pulp is a source of high-quality fibre but it is low in calories. A hay that is not too mature will contain as much energy. Beet pulp is useful when we need to feed our horses with an overly mature hay since it has a prebiotic effect due to its high digestibility and its pectin content. It can therefore replace part of the hay in a ration. However, it is essential to serve it soaked precisely because it is rich in pectin. This is what causes the pulp to swell considerably on contact with water and it is imperative that this occurs before it is ingested to prevent choking and colic.

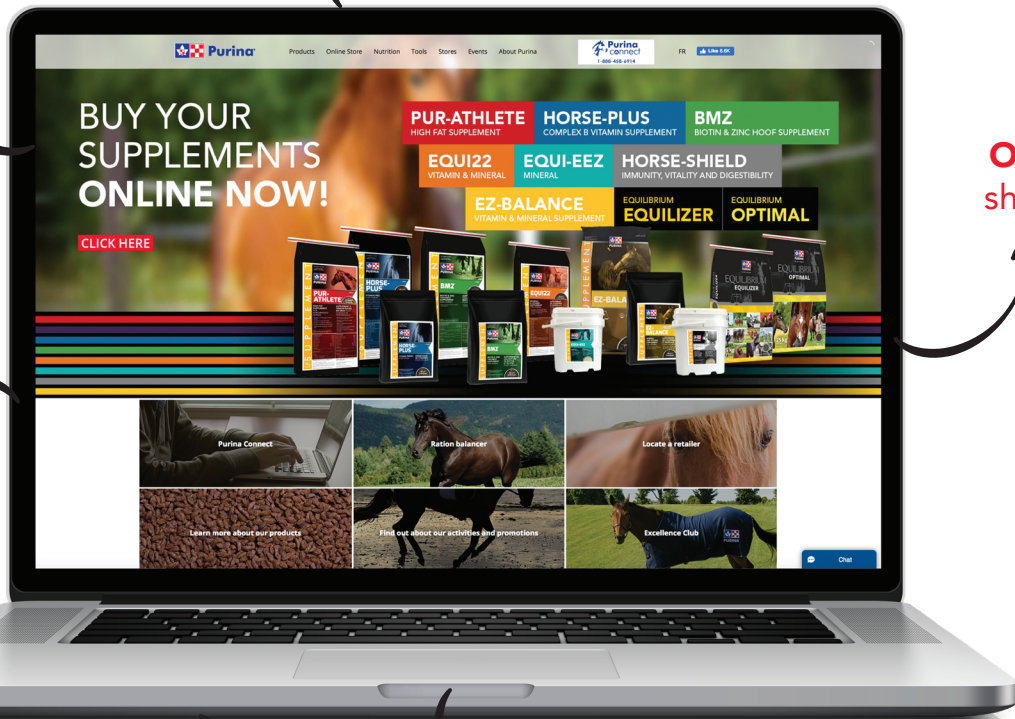
Fact; Though Beet Pulp on a dry weight measurement may appear to have a higher caloric count than an average dry first cut hay the challenge is the consumption rate that would be needed to increase weight gain. A combination of this healthy, digestible fibre source known as beet pulp can be added in addition to higher caloric nutrients to reach your weight gain goal.

These are just a few of the many myths surrounding equine nutrition. Remember to keep a critical mind, get information from credible sources, and, don't forget that agronomists are the experts in animal nutrition!

EQUIPURINA.CA

is:

All information
about our **PRODUCTS**



ONLINE
shopping

Find
A DEALER

TOOLS to simplify
your life

NUTRITIONAL
articles





WOODSTOCK

1179 Ridgeway Road
Woodstock (Ontario) N4V 1E3
Phone: 1-519-539-8561

ST-ROMUALD

1875, 2^e Rue
St-Romuald (Québec) G6W 5M6
Phone: 1-800-463-1862