



HYGAIN®

Feed news

SUMMER

HOW IMPORTANT ARE **ELECTROLYTES** IN MY HORSE'S DIET

Horses depend on certain electrically charged minerals to maintain the balance and flow of vital body fluids, the transmission of nerve impulses and the healthy function of the muscles and the circulatory system. These minerals are called electrolytes. Their positive and negative charges help to control the body's pH (acid/base) balance and the transport of nutrients and waste products in and out of the cell. The minerals sodium, potassium, chloride, calcium, and magnesium collectively are termed electrolytes.

What do each electrolytes do?

Sodium and Chloride - NaCl, common salt, is the major electrolyte of the body. Salt is comprised of two electrolyte ions (charged particles) – sodium (Na+) and Chloride (Cl-). It is found in much higher concentration outside the cells (in the blood and other fluids surrounding the cells) than within the cell.

The saltiness of the blood is measured as it is filtered through the kidneys. This way the body knows how much water to release in the urine to keep the concentration of salt in the blood at normal levels.

When the horse becomes dehydrated and the blood sodium level is much more concentrated, sweating will slow or even stop as the body is trying to preserve the critical balance of salt to water.

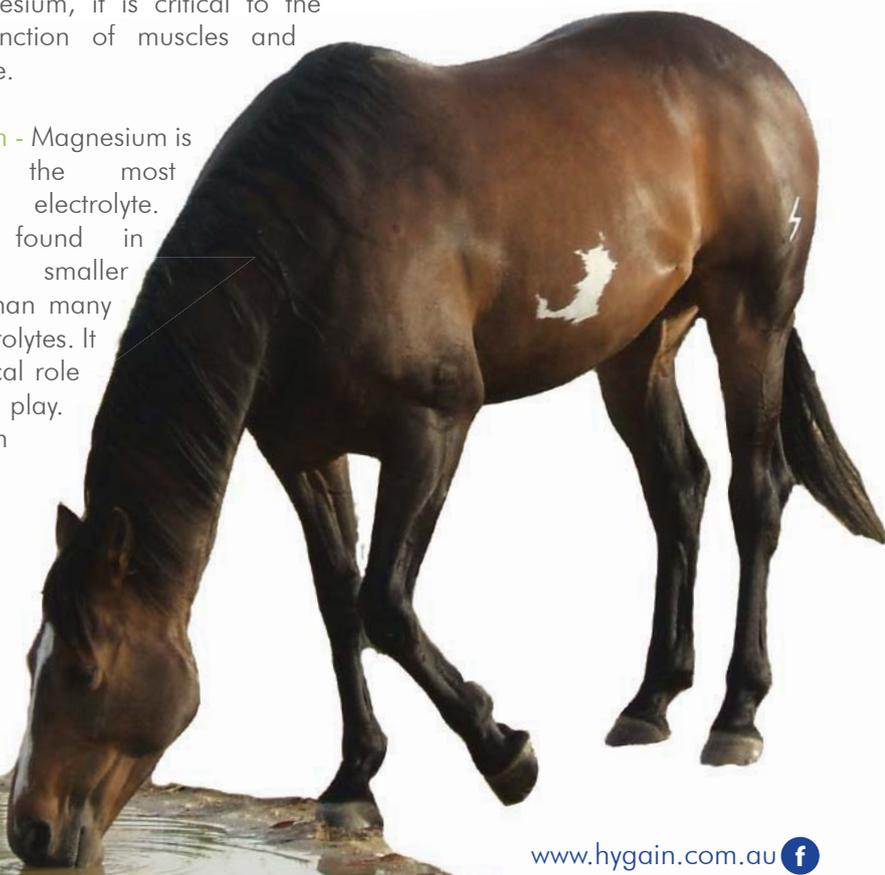
Potassium - Inside the cells, potassium (K+) assumes the role as the major positively charged electrolyte. One of potassium's major roles is to keep the sensitivity of nerves and muscles at normal levels, not under or over reactive to impulses telling them to contract. This includes both skeletal and heart muscles.

Calcium - When we hear calcium, we think of bones and teeth. This is indeed a major function of calcium in the body, and most of the calcium is found within bones and teeth. However calcium in its ionic form (Ca+) is an important electrolyte. Like potassium and magnesium, it is critical to the normal function of muscles and nerve tissue.

Magnesium - Magnesium is probably the most overlooked electrolyte. Although found in much smaller amounts than many other electrolytes. It has a critical role to play. Magnesium

functions as a co factor for over 300 enzyme reactions within the body. This means if magnesium is not present or is present in an insufficient amount, each of these 300 reactions will suffer. Magnesium is required for normal muscle function, especially for relaxation of a muscle.

Phosphorous - Phosphorous is involved in the formation of bone. About 85% of the body's phosphorous is located inside the bones in a solid form. The remainder is distributed between the blood and the interior of the cells. Inside cell, phosphorous is absolutely essential to the normal



metabolism of carbohydrates, fats and proteins, as well as the generation and storage of energy from basic fuels.

Manganese - Manganese is an electrolyte you rarely hear about. Like magnesium, manganese is present in relatively small amounts compared to many other electrolytes, but it is essential to the formation of normal connective tissues (tissues that hold your body together), and the formation of joint cartilage. Manganese plays a role in the metabolism of fat, the creation of DNA and the manufacture of cholesterol.

Copper - Copper is also present in very small amounts compared to the other electrolytes. The utilisation of iron to make red blood cells requires copper. Formation of the protective outer coating on nerves also requires copper, as does the production of skin pigments and the formation of healthy collagen – the major component of tendons and ligaments. Similarly, healthy joint cartilage can only be produced when there is adequate copper available.

Fluid Losses

Exercise generates a great deal of heat that must either be dissipated from the

Figure 1

Range of weight losses when horses were weighed before and after various events indicating sweat loss**

Type of horse	Weight loss
Standardbred Harness Horse (before and after a 1 mile race)	5 to 15kg
Eventing Horses (before and after cross-country training)	10 to 45kg
Thoroughbred horses in race training (before and after galloping)	4.5 to 7kg
Endurance horses (from the night before a race to the end of 85km)	10 to 40kg

*Note these values may not apply to all horses performing these types of events

body or stored. The dissipation of heat is very important, because if a large amount of heat is stored, body temperature will rise to dangerous levels. In the horse, the processes that contribute to the dissipation of heat during exercise include radiation, convection, conduction and evaporation. Of these, evaporation may be the most important; particularly when horses are exercised in warm conditions. To facilitate evaporative cooling, horses sweat. Sweating is certainly desirable as a means to maintain body temperature, but high sweating rates result in high rates of water and electrolyte loss. Please see Figure 1.

Horses consist of approximately 60% water, which works out to be around 270 kg of water for a 450 kg horse. Most of the water is contained in cells (intracellular water) but some is outside of individual cells (extracellular water). Blood plasma, which constitutes a large portion of the horse's blood volume, is an important component of the extracellular water pool. When horses sweat, some of the water in sweat is obtained from the plasma volume. Consequently, if sweat losses are large, the plasma volume may decrease. A reduction in plasma volume (and thus total blood volume) may affect the ability of the horse to maintain adequate blood flow to muscles during work. Progressive

POST WORKOUT NUTRITION



HYGAIN RECUPERATE®

enhanced electrolyte and B-group supplement.

A premium multi-nutrient paste formulated to aid in the rapid recovery of heavily exercised horses and horses under stress, ensuring optimum performance and health. A unique and highly concentrated blend of quality B-group Vitamins, natural Vitamin E and critical electrolytes.

30ml DOSE

- ✓ More **rapid recovery** time
- ✓ Improved **muscle** metabolism
- ✓ **Enhanced energy** production

dehydration may also result in a reduction in sweating rate and thus an increase in body temperature. This is why electrolytes are so important in the horse.

Electrolyte Losses

Equine sweat is relatively high in sodium, chloride and potassium. When horses lose large volumes of sweat, they lose considerable quantities of these electrolytes. The following table provides estimates of the sodium, chloride, and potassium losses that might be experienced by horses in various activities, given the weight losses listed earlier. Please see figure 2.

Large losses of electrolytes can result in several neuromuscular and systemic disturbances including muscle cramping, tying up, synchronous diaphragmatic flutter (thumps) and systemic alkalosis. Horses with large electrolyte losses may also have reduced sweating rates and therefore a reduced ability to manage body temperature.

Electrolyte Supplements

Generally if a horse is eating a balanced diet and is not experiencing electrolyte losses (sweating, exercise,

humid tropical conditions or disease) the benefit of these supplements is questionable. If your horse sweats, an electrolyte supplement can be beneficial, but it is important to remember that the electrolytes are not stored in the body, so if they are administered when the electrolytes are in balance, the body most likely will view them as an excess, and the kidneys will get rid of them. It is important to give electrolytes while the loss is occurring (e.g. during/post exercise) or shortly after to replenish the loss.

In the winter months, there is no question that offering room-temperature water during the cold can increase a horse's daily water intake. Keeping a horse's water intake

normal during the winter months may help reduce the incidence of impaction type colic. Contrary to popular belief horses do still sweat in the winter time this sweating can be exacerbated if the horse has a thick winter coat. Electrolyte supplementation should commence whenever sweating becomes a frequent (near-daily) occurrence. Don't wait for sweat to saturate a horse's coat before beginning supplementation. If your horse's winter coat is damp after riding, the horse is probably sweating sufficiently for an electrolyte supplementation to be added. The most appropriate way to choose a product is to compare the electrolyte content of the supplement to the electrolyte content of sweat such as **HYGAIN REGAIN**.

Figure 2

Range of Estimated Electrolyte Losses of Horses Performing Different Activities**

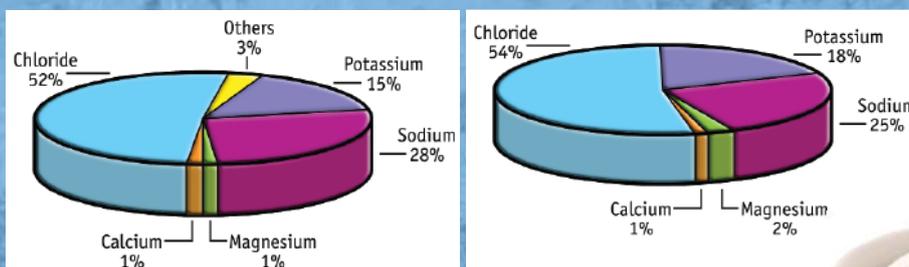
Type of horse	Sodium	Potassium	Chloride
Standardbred (during a race)	16 – 46g	6 – 17g	31 – 88g
Eventing horse (cross-country training)	33 – 148g	12 – 51g	63 – 284g
Thoroughbred (during a workout)	16 – 23g	6 – 8g	31 – 44g
Endurance horse (85km ride)	33 – 132g	12 – 48g	63 – 252g

** These values may not apply to all horses performing these types of events

REFRESH, REVIVE, REGAIN!

Let your horse regain the electrolytes he has lost through sweating with **HYGAIN® REGAIN®**. This rapid electrolyte replacer was specifically formulated for horses for every day use to replace body salts lost during exercise, hot climatic conditions and as an aid in the treatment of dehydration, hypochloreaemia and alkalosis.

Horse Sweat Vs HYGAIN® REGAIN®



MOWING HORSE PASTURE

“Mowing” is a term used to describe the cutting or trimming of grass. The mowing process cuts grass to a uniform height in a pasture or lawn. Do pastures, paddocks or fields used to graze horses require mowing? Is there a potential benefit of mowing? At what height do you mow pasture grass? Are there any risks associated with grazing horses on freshly mowed pasture? Those questions and others will be answered as we discuss “Mowing Horse Pastures”.

Benefits of Mowing

The main goal in pasture management is to maintain or to enhance grass quality. The intake of pasture grass can be a significant source of nutrition for the grazing horse if the pasture is properly managed. Mowing is one tool that can be used to better manage pasture. Some horse owners mistakenly feel that mowing pastures is simply done to make the pastures look nice. However, there are several valid reasons to consider for mowing pastures. Some potential benefits of mowing include: weed management, enhancing forage quality and reducing grazing patterns.

Controlling weeds – Repeated mowing of pasture decreases the competitive ability of a weed to survive in a grass paddock. By keeping weeds the same height as grass, the grass has the advantage and prevents weeds from shading and restricting

grass growth. Mowing also serves to prevent weeds from establishing seed heads. Eliminating seed heads prevents weeds from reproducing and spreading in the pasture. The control of weeds in a pasture does not occur with a single mowing, but instead is facilitated with multiple mowing.

Enhance pasture quality – A grass plant that is actively growing is constantly producing nutrients that horses can utilize. The mowing process keeps grass plants in a vegetative or growing state. Mowing prevents the plants from reaching a reproductive state when they develop a seed head and ultimately cease growing. Mowing also keeps plants at a shortened height which increases digestibility and palatability. As grass plants grow tall they become fibrous and less digestible. When mowing grass pastures, it is important to not cut grass plants too short since cutting too short will reduce the leaf area which is needed to stimulate growth. A grass plant that is cut too short is also prone to stress and may die. The optimum height for a cool-season grass is approximately four inches (10 cm), while the optimum height for a warm-season grass is approximately eight inches (20 cm).

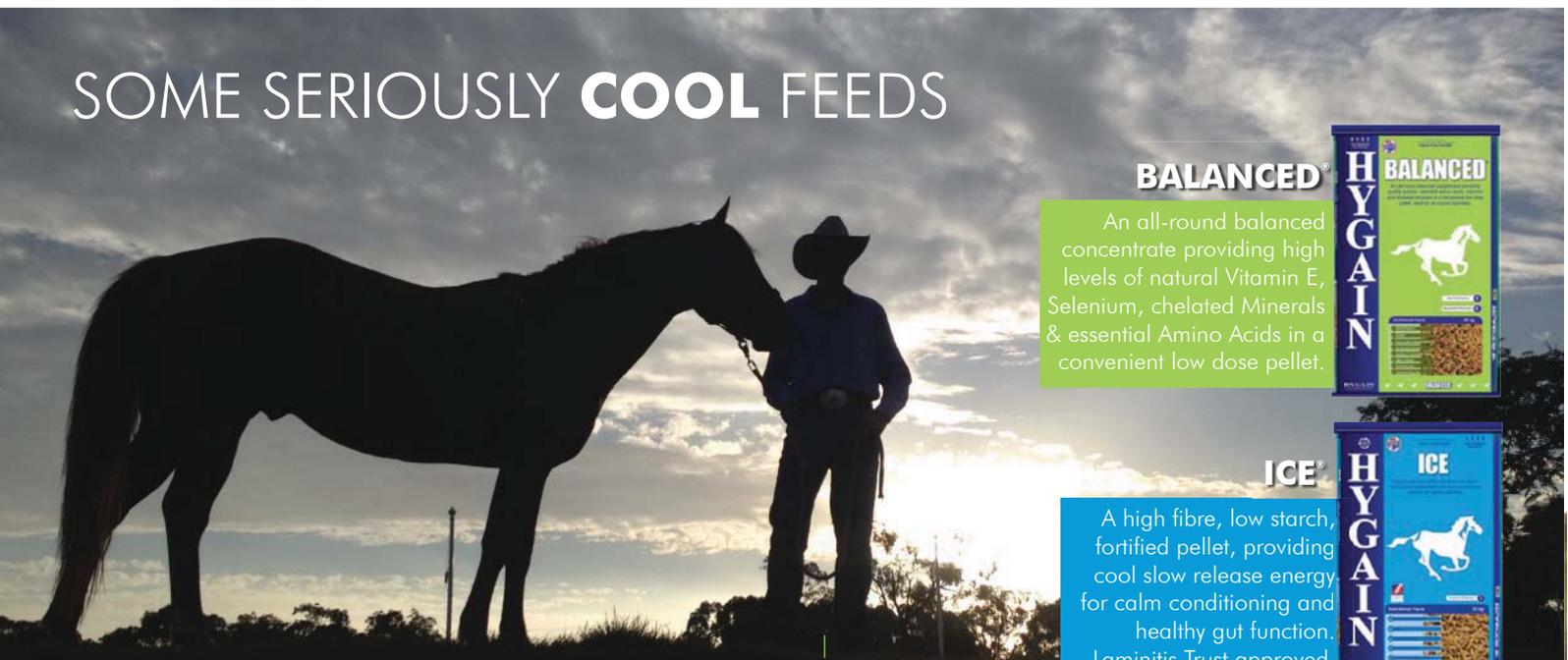
Reduce grazing patterns – Horses tend to graze in certain areas of a pasture and utilize other areas of the pastures to pass manure. The

grazed areas are very short and known as “lawns”. The non-grazed areas consist of taller grass and they are known as “ruffs”. Mowing serves to shorten the taller grass and enhance its palatability. Over time this will help to eliminate the grazing patterns that can exist in horse pastures and provide better utilization of the pasture.

Potential Risks for Horses Grazing Mowed Pasture

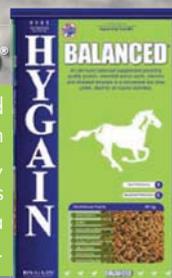
What are the risks, if any, for horses grazing mowed pasture? The single biggest risk associated with mowed pasture is the horse consuming mowed grass that has moulded. Once grass is mowed, the portion of grass that is clipped from the plant contains a high moisture content. These clippings are prone to moulding. If horses eat grass that has moulded, it can cause a variety of symptoms including coughing and nasal discharge and in extreme instances result in death due to mold toxins. Another potential risk of clipped forage is choking. If horses take in large mouthfuls of short grass clippings they can potentially choke. Both the risk for ingestion of mould and for choking can be virtually eliminated if the pasture is harrowed following mowing. The harrowing process spreads the grass clippings evenly throughout the field and dramatically decreases the likelihood of any problem

SOME SERIOUSLY COOL FEEDS



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An all-round balanced concentrate providing high levels of natural Vitamin E, Selenium, chelated Minerals & essential Amino Acids in a convenient low dose pellet.



ICE®

A high fibre, low starch, fortified pellet, providing cool slow release energy for calm conditioning and healthy gut function. Laminitis Trust approved.

