

## Sweating and electrolyte replacement

Water makes up around 65% of a horse's body weight and is essential to the normal functioning of the horse's body systems. During exercise, contracting muscle cells generate large amounts of heat, and the most important way to dissipate this heat is by evaporation of sweat from the skin. In moderate environmental conditions an average 500kg horse can lose 6-7 liters of sweat per hour. In hot, humid conditions fluid losses can reach the 15L mark for each hour the horse is exercising. Resting horses may also sweat freely during our summer months. As the horse sweats, electrolytes are also lost along with water. Horse sweat contains a large quantity of chloride, sodium and potassium and smaller amounts of magnesium and calcium. These electrolytes must be replaced to maintain normal body functions.

Electrolytes are body salts that are involved in many vital functions including nerve and muscle activity, metabolism, maintenance of fluid balance and kidney function. In horses the most abundant and important electrolytes include sodium, potassium, chloride, calcium, and magnesium. Your horse's body is constantly trying to correctly balance the electrolyte amounts in his system. Electrolyte imbalances have far-reaching consequences, impacting virtually every equine body system. Excessive electrolyte losses during exercise can contribute to a variety of serious performance and health hindering issues, including fatigue, muscle cramps and tying-up, thumps and heat stress.



The use of an equine electrolyte supplement has the potential to improve your horse's performance, aid recovery after strenuous exercise and avoid dehydration. The goal of electrolyte supplementation is to replace electrolytes lost through sweat and thereby restore the proper balance of electrolytes in the horse's body. Sweat and electrolyte loss varies from horse to horse and with work undertaken, weather and fitness, therefore, it is important that the electrolyte replacement you choose is designed to meet the requirements of your individual horse. Heavy sweating occurs as a result of working at moderate speeds for prolonged periods of time, particularly during warm weather.



Heavy sweating is common in pacers and other hard-working performance horses, such as endurance horses, eventers and stockhorses. Regular heavy sweating not only depletes electrolyte stores but also leads to blood alkalosis, due to a greater loss of chloride in sweat compared to sodium. This disproportionate loss of chloride leads to an increase in blood bicarbonate levels causing the blood to become alkaline. In order to correct alkalosis, choose an

electrolyte that contains higher levels of chloride, potassium and magnesium.

Light sweating is seen more commonly in gallopers as they usually work for short periods of time in the cool of the early morning, however as they work at high

intensity this can lead to the production of large amounts of lactic acid in their muscles during fast work. Lactic acid released from muscles causes a drop in blood pH or acidosis which leads to muscle fatigue and stiffness. These horses benefit from an electrolyte that contains additional alkaline salts (such as bicarbonate) which help to buffer these acids. It is also essential to feed sufficient electrolytes to replace the individual needs of your horse, and it is important to adjust the amount of electrolytes given on days when he works harder. As excess electrolytes are rapidly excreted in the urine it is best to feed half the dose in the morning feed and half in the evening feed to get optimum benefit from daily supplements.

When administering multiple supplements, which many horse owners do, determine the total amount of each supplement to administer on a daily basis to ensure the horse is not receiving more than the recommended daily amount. Some electrolytes contain high amounts of bicarbonate, therefore if used in racing or competition animals the regulations of the relevant authorities regarding medication should be observed.

