



Feeding for endurance: A practical guide

by Dr Rensia de Wet

Glycogen loading as done by human athletes, appears to have little or no benefit for horses. Benefits of performance improvement by adding 0,9 kg of maize daily for several days before a ride has been reported, but may predispose the horse to tying up/exertion myopathy/Monday morning disease – which you definitely don't want on Saturday morning at the ride!

Increased grain intake within a few hours or less before a ride is detrimental, as blood glucose and insulin concentrations peak 2-3 hours after the horse has eaten the grain. Insulin decreases fat utilisation and increases hypoglycaemia (low blood glucose levels), which will decrease speed and endurance. In contrast, feeding grain more than four hours before a ride, and feeding small quantities of grain during an endurance ride, is not harmful

and will extend the time before fatigue or exhaustion occurs.

How is this practically applied? Start with a very good relationship with your groom, as he/she will most probably have to be the poor victim who will have to get up 4-5 hours pre-ride in the dark to feed your beloved horse. You, on the other hand, need your sleep to sit this steed the next day when all the benefits literally and figuratively kick in.

Prior feeding

Feed 1,5-2 kg of grain (I recommend 1 kg of your normal concentrate, 0,5 kg oats and 30 g of an electrolyte supplement specifically formulated for the competitive endurance horse) 4-5 hours before the ride. Allow free access to forage (good quality grass – not lucerne) and water up until the endurance ride begins.

Water and forage intake maximises the amount of water and electrolytes in the gastro-



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intestinal tract, and thus their availability to replace those lost during prolonged exercise. This is important for prolonged activity, as their loss limits the endurance horse's capacity. The grain will provide much needed energy and by 4-5 hours, the increase in blood glucose and insulin concentrations will have returned to normal.

Previous research recommended restricting forage intake for a period prior to physical exertion, to decrease gastro-intestinal fill and therefore the weight the horse must carry. The horse's gastro-intestinal tract can hold an amount equal to as much as 25% of its body weight. It has now been found that the benefit of this storage source of water, electrolytes and nutrients, offset the detriment of added weight for endurance-type activity and endurance horses should thus not be deprived of forage and water pre-ride.

It has also been said in theory that feeding before exercise may be detrimental, as it will increase blood flow to the gastro-intestinal tract (GIT) and away from the skeletal muscle. Research, however, has shown that although

feeding before exercise did result in higher blood flow to the GIT, blood flow to the skeletal muscle was also higher.

The administration of sodium bicarbonate (baking soda) prior to an endurance ride, can be detrimental. This practice is for racehorses only, to buffer the high amount of lactic acid produced during maximum exertion of a few minutes – these horses develop a metabolic acidosis (low blood pH). Endurance horses work primarily aerobic and develop a metabolic alkalosis (high blood pH). So bicarbonate can be harmful by further increasing the metabolic alkalosis and also by causing decreases in the plasma electrolytes potassium, chloride and calcium concentrations. These electrolyte concentration alterations are the same as those induced by sweating and heat stress and therefore will exacerbate these potentially deleterious alterations.

Feeding at checkpoints

Offer the horse fresh palatable water and give 30-60 g of an electrolyte supplement specifically formulated for competitive endurance horses *per os* (over the tongue) or mixed into 500 g of concentrate feed. Offer soaked lucerne and grass.

Afterwards

After the ride, offer fresh palatable water and soaked lucerne and grass *ad lib*. Wait at least 1-1½ hours before concentrates are given to allow time for horse's temperature to decrease, blood to flow to the gastro-intestinal tract and gut sounds to increase. Feed the normal amount of feed on Saturday and Sunday after the ride with added electrolytes. Thereafter feed half the concentrate intake for every day of rest the horse is given to prevent azoturia/Monday morning disease when horse starts on his exercise programme again.

Wishing you successful and well-hydrated endurance kilometers!

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