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TIME OF FEEDING BEFORE AN ENDURANCE RIDE

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The last meal should be given 4-6 hours before the ride. Unless concentrates are processed to improve digestibility or contain additional equine-specific digestive enzymes, they should be mixed with small amounts of hay to prevent even minor disturbances in stomach and small intestinal function. If raw grains are fed they should not exceed 0.5kg/100kg body weight/meal.

Rapid feeding should be avoided. Prolonging feeding time facilitates saliva production and increases the amount of moisture in the stomach contents, favouring digestion and absorption in the small intestine.

Water can be withheld no longer than 2 hours before an event and nervous horses may be preoccupied by making small amounts of hay available. Administering sucrose or glucose before the ride is contra-indicated because the subsequent insulin release may limit energy release from the liver and muscle.

Endurance capacity during a ride is affected by energy, water and electrolytes, so horses can benefit if provided with these substances. The last meal pre-ride should load liver and muscle glycogen stores and promote large intestinal absorption of fatty acids for several hours.

Improving water and electrolyte balance: It is possible to improve water and electrolyte balance in endurance horses with the right feeding and watering technique. Building a reservoir of electrolytes and water before an event can be facilitated by careful selection of the amount, type and composition of feeds offered as well as by the time of feeding and watering.

Two sample diets serve to illustrate the effect of diet on water and electrolyte reserves:

Sample diet 1: 2kg concentrate (high sodium) + 3kg hay

Sample diet 2: 2kg oats (which are low in sodium)

Water intake: is related to amount of feed and time of feeding. Within 4 hours of feeding, horses drink around 2.5 litres of water for every kg of dry matter consumed.
Sample diet 1 (SD1) yields around 4.5kg of dry matter, so on this diet a horse will drink approximately 11 litres of water within 4 hours of feeding.
Sample diet 2 (SD2) yields around 1.8 kg of dry matter and a horse on this feeding regime will drink approximately 4.5 litres over the following 4 hours.
Allowing for losses in the urine, horses on SD1 will retain around 6 litres of water, 9g of sodium and 45g of potassium, while those on SD2 will retain only 0.6 litres of water, 0.2g of sodium and 1g of potassium.

The following recommendations have a positive effect on endurance, delaying the onset of fatigue and preventing avoidable conditions:

(a) Feed around 4 hours prior to the ride

(b) Provide 0.4kg of high sodium (> 10g sodium/kg) concentrate/100kg bodyweight

(c) Give 0.4-0.6kg hay/100kg body weight - avoid hay with > 20g potassium/kg as a daily potassium intake of > 150mg/kg bodyweight can stimulate diuresis (excessive urination and thirst)

(d) Limit protein intake on the day of competition to 250g

(e) Allow free access to water

(f) Use an electrolyte formulation containing calcium during and for 48

hours following a ride

(g) Withhold alfalfa and other high calcium feeds for 4-5 days before a ride, but feed on the day of the ride. This activates the parathyroid gland which closes down in the face of excess calcium and is slow to reactivate

(h) Work up to 250ml, and preferably 500ml of oil 3 weeks prior to the ride

(i) Reduce oats to absolute minimum, if at all

(j) Avoid all chemicals that control insects and flys and coat-conditioning chemicals

(k) Ensure vitamin B, E and C intake are optimum

(l) Soak hay for 6 hours to reduce dust, fungal spores, bacterial fragments and mould levels in the stable air and feed it on the ground

After several hours of riding, the horse has lost mainly water, sodium, potassium and chloride and these losses need to be replaced. However, there are a couple of precautions which need to be observed:

- Some horses fail to drink and dehydration needs to be in the order of 6% to stimulate thirst - 3% dehydration shows few clinical signs but is sufficient to reduce performance.
- Horses usually dislike drinking water that has added potassium salts
- Most horses prefer plain water without salt or glucose added

Training horses to accept water with added molasses can assist in replacement during a ride. Molasses contains sodium and potassium.

If a horse is not drinking well, giving electrolytes is extremely dangerous as it further dehydrates the body by 'sucking' water out of the blood and into the gut. If a horse is drinking well, thirst will add water to the gut and enhance absorption. If a horse is dehydrated, administering electrolytes without water causes further dehydration.