

FEEDING THE POLO PONY

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Polo requires bursts of intense speed and athletic agility. Energy deficiency and heat build up are the major limitations to performance and the diet must address these. Diet manipulations can assist in delaying the onset of fatigue-reducing the risk of injury and allowing horses to maintain top speed for longer.

Fatigue - How can it be reduced?

Fatigue in Polo is brought on by a combination of energy depletion and heat build up. As well as limiting performance, fatigue in muscles increases the reliance on tendons, ligaments and joints - predisposing to injury and breakdowns in these structures. Feeding strategies should increase blood and muscle glucose and minimise heat production. Oils offer enormous benefits for temperament, heat load and performance. During sprint work, polo ponies are relying on energy generated from blood and muscle glucose. Supplying an oil-enriched concentrate spares blood glucose levels and maintains the glucose supply for use during high intensity work. Although this does not enable the pony to increase top speed, it allows it to maintain top speed for longer before fatigue sets in. To receive the benefits of reduced fatigue, and fatigue-related injuries to Polo horses, a fat-supplemented diet or feed containing between 10 and 12% oil should be fed for at least 28 days prior to an event. **MITAVITE FORMULA 3**, **MUNGA** and **TURBO SUSTAINA** are oil-enriched feeds with 10.5 - 12% oil, simplifying the provision of an oil-enriched diet.

Oils offer other benefits including a reduction in the amount of grain required. In addition, feeding Omega 3 oils assists circulation, oxygen delivery and immune function. **MITAVITE PERFORMA 3** oil contains blended Omega 3 oils and has been formulated to correct the imbalances in performance horse diets.

Polo involves both low-intensity work (aerobic exercise) and phases in which energy demands are greater and necessitate anaerobic energy production. These horses benefit from a high-energy diet.

Heat: Digestion generates heat and this adds to the heat load that the exercising horse must cool. The amount of heat, acid and gas generated during digestion depends on the fibre content and whether the feed is digested in the small intestine or fermented in the caecum. Over 90% of **Mitavite steam-extruded and micronized feeds** are digested in the small intestine. This can be compared to raw grains where only 21% of barley, 29% of corn and 65% of oats is digested in the small intestine, the balance is fermented in the large intestine.

Feeding highly digestible, high oil diets, and reducing the amount of protein can reduce the heat produced by working muscles. Grain and complete feeds processed by steam-extrusion are recommended to reduce heat load and for horses needing high-energy intakes. They have also been shown to protect against 'tying up', laminitis, colic, diarrhoea and behavioural problems. **Mitavite Formula 3** is a nutrient-dense high-oil feed which helps to lower heat produced during digestion. Formula 3 is an oat free formulation, high in vitamin E which is ideal for horses which suffer from tying up.

Protein: Quantity or quality?

The quality or amino acid composition of the protein in the diet is important. Of the 22 amino acids required by horses, 10 must be supplied in the diet and hence are called 'essential amino acids'. Muscle development, the ability to repair and rebuild muscles after work and protein losses in sweat, create a need for high quality, highly digestible protein. Ideally protein is digested in the small intestine. Digestion in the large intestine ferments the feed to yield ammonia. Feed processing methods determine where feed is digested. Digestion and absorption in the small intestine increase to over 90% following steam-extrusion and micronization.

Roughage: Polo horses require adequate roughage to prevent dehydration. Aberrant behaviours such as wood chewing, windsucking and cribbing have been associated with boredom and when horses are confined, stabled and travelling during the competition season, the availability of good quality roughage can assist in ameliorating these vices. Using an energy-nutrient-dense feed means a lower weight of feed is required to match the demands of polo. This ensures that roughage intake can be maintained. Good quality hay does not need to be high in protein, in fact excess protein in the forage is not required by mature horses. The term 'good quality' means freedom from dust and mould spores and not shedded so long so that nutrient levels are reduced.

Each chukka requires bursts of speed interspersed with periods of low-intensity work. The lighter the gut contents the lower the weight handicap on the horse. Feed that is well digested in the small intestine reduces the gut ballast or dead weight carried by the horse and this, along with heat load and energy supply, affects fatigue. **Mitavite Munga** is 90% digested in the small intestine. Up to 1/3 less feed needs to be fed when feeding steam extruded and micronized feeds due to the processing methods of these feeds.

When to Feed Roughage: Recent research on the feeding of hay and grains has revealed that if hay is fed with concentrates then the digestion of the starch in the small intestine is reduced, causing side effects such as increased gas, heat and acid. During the season, when loss of appetite and weight loss can occur, small amounts of fine-tuning can offer significant benefits. It is suggested that hay is fed either two hours before or two hours later than concentrates to improve nutrient uptake and absorption.

Time of Feeding: High concentrate meals should be fed no less than 4 hours before competition. Blood glucose levels are lowest 90 minutes after feeding. If exercising at this time, fatigue comes on sooner due to low blood glucose.

Muscle Recovery: Certain diet manipulations have been shown to assist in reducing muscle damage and improve recovery from strenuous work or competition. During polo competition, horses damage muscle tissue through production of high levels of lactic acid and exertion. Short sprints cause more tissue damage than prolonged low-intensity exercise. Muscle must be repaired rapidly in order to alleviate stiffness and soreness, maintain improvement and be ready for the next competition. Feeding 0.5-1kg of **Mitavite Promita**, no more than 2 hours before or 1 hour after hard work will enhance glycogen synthesis and aid muscle recovery by supplying anti-oxidants, carbohydrates and essential amino acids. This takes advantage of the window of opportunity associated with increased muscle blood flow and high levels of the hormones required to fuel muscles.

Mitavite, maker of Mitavite feeds, is not simply a horse feed manufacturer. Nutritionists, equine veterinarians and agricultural scientists combine their fields and using the latest international research, formulate better feeds and provide technical support. Steam-extrusion and micronization have enabled new feeding strategies, which improve health and performance.