

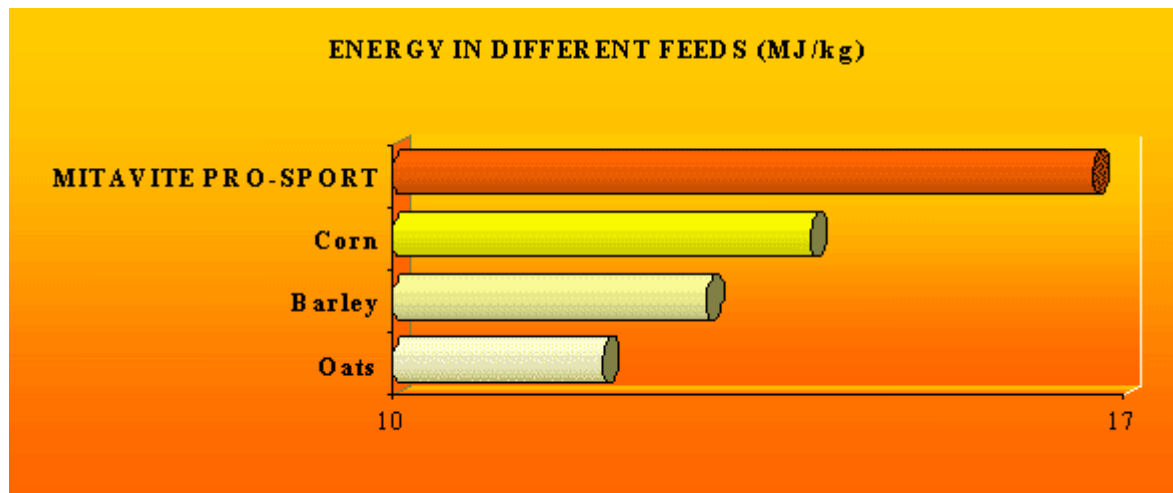
CUTTING, CAMPDRAFTING, POLOCROSSE AND STOCK HORSES FEEDING FOR PERFORMANCE

Campdrafting, Polocrosse, Cutting, Reining, Roping, Rodeo, Western Performance and stock horses: Energy efficiency and heat build up are the major limitations to performance in cutting, roping, reining, campdrafting and stockhorses. The requirements of each discipline vary, but are greater in the more physically demanding activities. The risk of fatigue, poor performance and injury is also higher because as muscles tire, they are less able to support tendons and ligaments. This adds extra load onto joints and bones - increasing the likelihood of injuries. Feeding strategies must promote muscle strength through muscle building and muscling fuelling.

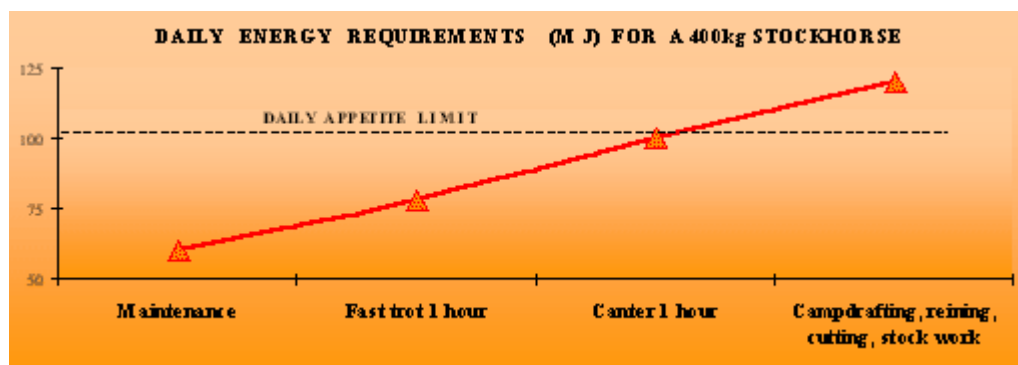
ENERGY

There are two ways in which energy may be increased in the diet:

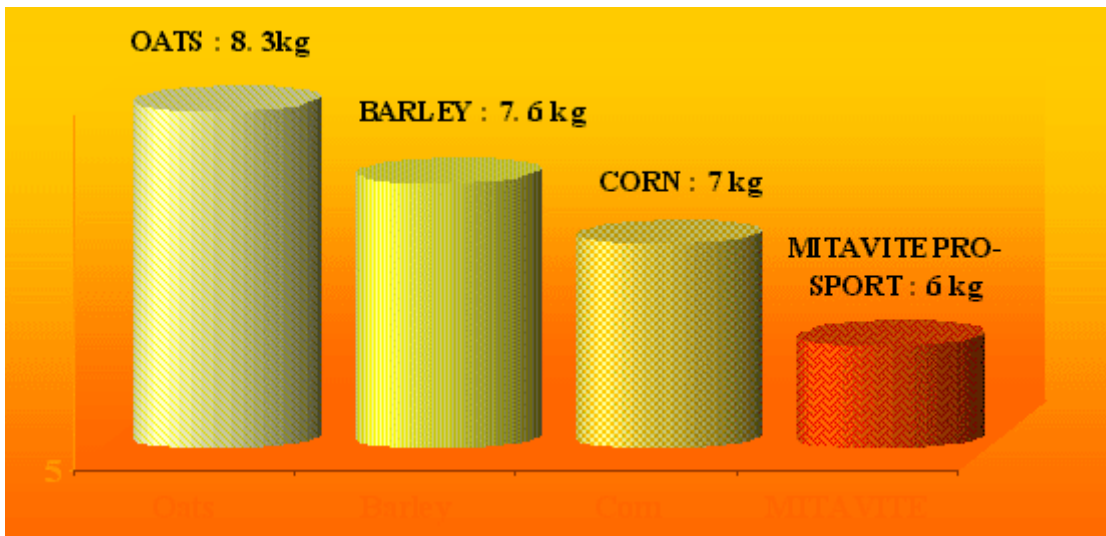
1. Increase grain intake
2. Provide a highly digestible energy-dense feed



Daily energy requirements can exceed appetite - which is often reduced due to the combined stresses of travelling and competing, especially in summer.



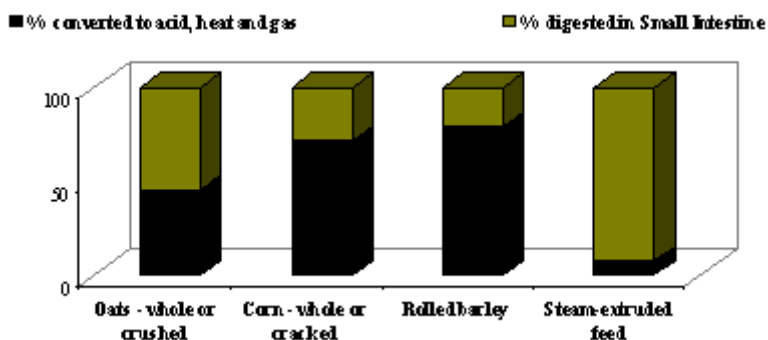
The graph below shows the weight of different feeds required to supply 100MJ of energy.



The benefits of an energy dense, oil-enriched, highly digestible feed are due to a combination of lower gut weight and more efficient digestion. Studies in America have shown improved performance times in Quarter horses fed a lower amount of highly digestible, energy-dense, oil-enriched feed, than those on traditional unprocessed raw feed. Specially formulated performance feeds supply more energy and less waste in a lower volume - supporting optimum nutrition especially if appetite is decreased.

HEAT

To cool itself by sweating, the horse must divert blood away from the working muscles, and send it to the skin - reducing muscle blood flow. Oil-rich feeds lower the heat produced by working muscles and highly digestible feeds with little waste, reduce the amount of body heat generated during digestion.



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.

OIL

Oil offers enormous benefits for temperament, gut ballast, heat load and performance. Oil provides a cool and steady supply of energy - allowing the horse to preserve blood glucose levels. This 'glucose-sparing' effect delays the onset of fatigue, so that although horses cannot increase their top speed, they can maintain it for longer. It takes about 3 weeks for the digestive system to be able to fully absorb added oils and up to 11 weeks for the muscles to adapt to using the extra oil as an energy supply.

If Omega 3 oils are included, red blood cell membranes become more supple and flexible, improving circulation and oxygen delivery.

FEEDING FOR THE DISCIPLINE

CUTTING: Riders report that cutting horses felt better, had more energy, more hind-quarter turns and worked harder on high-oil feeds. Quarterhorses doing cutting work adapt to an oil-enriched diet within 14 days.

CAMPDRAFTING AND REINING: Campdrafting and reining horses have an intense demand for energy during training and performance, particularly as 3 year olds when they undergo training for futurities. Depletion of energy stores and a state of oxygen insufficiency precipitate fatigue, poor performance and injuries. When this happens, the horse will start a reining pattern strongly and then fail to perform the last couple of manouevres correctly. These horses benefit from a high-energy diet similar to that required by racing and cutting horses.

POLO: 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.

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.

Polo horses require adequate roughage to prevent dehydration. 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 and reducing stomach ulcers.

POWER - WEIGHT RATIO:

As well as energy supply, sustained performance depends on a strong and athletic body because the ratio of lean muscle mass-to-fat affects the power-to-weight ratio. Tiredness and fatigue can be due to not enough muscle mass. Whether a horse develops muscle or lays down fat is determined by the quality and quantity of protein in the diet. The site of protein digestion also plays a major role.

The 'muscle building' power of a feed depends on:

1. Digestibility in the small intestine.
2. Protein quantity.
3. Protein quality - amino acids deficiencies place a limit on the amount of muscle and bone a horse can build and increase fat cover.

Muscle-building power is totally dependent upon protein - the amount fed, the amino acid profile, the processing method and the site of digestion. PRO-SPORT addresses the power-to-weight ratio through attention to the essential amino acid array and the steam-extrusion-related increased digestibility.

THE DUAL DEMANDS OF PERFORMANCE FEEDING: MUSCLE REPAIR & MUSCLE REFUELLING

Performance feeding protocols must address two issues:

1. Muscle refuelling - requires energy or carbohydrates
2. Muscle building - requires protein

Hundreds of tiny microscopic muscular rips and tears occur during intense exercise. In addition, exercise is a catabolic process - ie body energy and protein reserves are mobilised to meet the demands of work. The correct balance of carbohydrate, amino acids and anti-oxidants can switch the catabolic state into an anabolic (ie rebuilding of tissue) state, enabling muscles to recover and respond more quickly to training.

Correctly profiled arrays of amino acids, balanced minerals, increased Vitamin E and anti-oxidant precursors combine to support muscle repair and increasing fitness. **MITAVITE PRO-SPORT** has been formulated to meet the dual aspects of nutritional support, because nutrition is a powerful tool when used properly. **PRO-SPORT** has increased energy-density - the combination of steam-extruded corn and barley for instant energy are supported by back-up reserves from the oil-enrichment - all the raw materials for muscle refuelling.

FEEDING GUIDE#	EVENTING	SHOWJUMPING	DRESSAGE	ENDURANCE	POLO
BODY WEIGHT	WORK LEVEL	MITAVITE PRO-SPORT	LUCERNE CHAFF/HAY*	WHITE CHAFF/HAY*	
400 kg	EARLY	2- 3kg	3- 4kg	3- 4kg	
	HARD	3- 4kg	2- 4kg	2- 4kg	
500 kg	EARLY	2- 3kg	3- 4kg	3- 4kg	
	HARD	3- 5kg	2- 4kg	2- 4kg	
600 kg	EARLY	2- 3kg	3- 4kg	3- 4kg	
	HARD	3- 6kg	2- 4kg	2- 4kg	

*vary according to quality and quantity of pasture

The feeding table is intended as a general guide only - adjustments will be required according such things as workload, climate, body type, pasture, roughage quality & temperament.

EXTRUSION

Oats and other plants growing in manure indicate that horses can't fully digest unprocessed feeds. Horsemen and women have long known that feeds for horses need to be processed. For centuries, grains have been cooked, rolled, boiled, baked, steamed, flaked, cracked, crushed and pelleted to improve their digestibility and reduce the incidence of veterinary emergencies such as colic, diarrhoea and laminitis.

Lack of precise control over cooking temperature and time, meant that many heat-sensitive nutrients were lost and natural vitamins destroyed during processing. In addition, oil oxidation reduced shelf life. Continuing research has increased our knowledge and understanding of food technology and digestive function and revealed the temperature and duration for which grains should be cooked to improve digestion - without causing damage to the nutrients. This has led to the development of steam-extrusion, which fine-tunes and advanced the traditional, time-honoured practices of cooking feeds for horses.

Feed ingredients are milled, steamed, pressure-cooked and oven-roasted for a short time - achieving in 20 to 30 seconds what would take 40 times as long at atmospheric pressure. Complex structures such as starches, proteins and oils are untangled - allowing digestive enzymes to work up to 100 times faster. This has the combined effects of improving digestibility and palatability while inactivating anti-nutritional factors, weed seeds, bacteria and fungal elements.

Heat-stable vitamins and minerals are used in Mitavite feeds. Those vitamins and nutrients which are heat-sensitive are spray-coated onto the 'nuts' after processing. Moisture content is only 8% - reducing mould and rancidity (grains are 11 to 13.5% moisture). The use of stable natural proteinates and chelated minerals prevents interactions between vitamins and minerals, such as those known to occur between iron and vitamin E.

Increased digestibility means that for the same weight gain, growing horses had to eat up to 30% more pellets than steam-extruded feed. Thus 1 kg of pellets or grain mix can be replaced with 650 grams of steam-extruded feed. This allows horses to consume essential proteins, vitamins, minerals and energy in less feed - especially beneficial for horses with reduced appetites due to stress, intense training, illness, surgery, pregnancy or dental problems.

One of the essential features of pellets is that they can be eaten quickly. Certain gastro-intestinal diseases have been linked to rapid intake of feed. The increased volume of steam-extruded feed means horses take longer to eat. Veterinary emergencies such as choke, colic, and gastric rupture, decrease when pelleted feed is replaced with steam-extruded feed. Steam-extruded nuts are eaten more slowly and require greater chewing than both traditional and pelleted feed.

Mitavite Economix offers the latest in food and nutrition technology and the most cost-effective way to achieve well-conditioned horses and ponies - without fizziness. Ideal for pony club mounts, stock horses, spellers and dry mares, Economix requires only the addition of roughage. As a rule of thumb, substitute for pellets and stud, pony and museli mixes on a volume basis (dipper for dipper). This volume of ECONOMIX will weigh about 1/3 less than stud mixes or pellets - giving significant savings in feed costs. No additional supplements should be given, except on veterinary advice.

Over the last 50 years, equine nutrition and exercise research has gained momentum and the results of this can be applied. 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. Mitavite has a commitment to research, with ongoing studies into the prevention of laminitis, tying up, colic, diarrhoea, bone diseases, foal diarrhoea and the relationship between nutrition and performance. Steam-extrusion and micronization have enabled new feeding strategies which improve health and performance and offer special benefits in hot climates.

Mitavite feeds are the only steam extruded feeds in Australia - combining the latest international nutrition research with time-honoured principles. When something is good, it is often copied and presented as equivalent to the original - even though the specialist recognises the difference. A copy often costs the same as the original - but there is really no substitute. You can't beat the quality and results of Mitavite steam-extruded and micronized feeds to improve health and performance. For more information on feeding Mitavite feeds contact Mitavite toll free: 1800 025 487.