

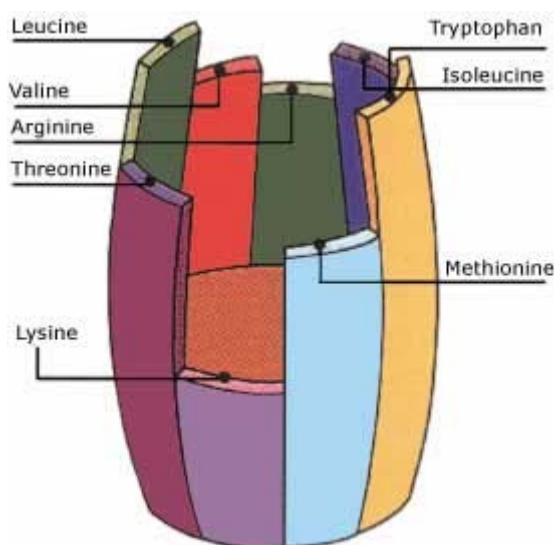
Reducing Weight Handicap

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Racehorses are handicapped by small amounts of lead, but they don't only carry the handicappers weight. Just as limiting to performance - but fortunately more easily manipulated - are the 'hidden handicappers' of body weight and gut ballast.

MUSCLE OR COVER: It is important to maximise muscle development and minimise fat deposition. When assessing the 'muscle building' power of a feed, there are 3 factors to consider: the digestability, the amount of protein and the essential amino acid levels.

- **Digestibility:** Highly digestible feeds are rapidly cleaved by digestive enzymes to yield amino acids. Feeds not easily digested are degraded to ammonia by fermentation - increasing urea and ammonia levels and wasting amino acids.
- **Percent protein:** Horses require a certain number of grams of protein a day, not a certain percent - the percent must be multiplied by the weight fed to obtain the number of grams. When horses eat more than 1600 grams of protein a day, the liver can be overloaded.
- **Lysine and other essential amino acids:** Proteins are chains of amino acids, muscle and bone require specific 'recipes' of amino acids. If one is deficient, the 'recipe' cannot be made. Picture a wooden water barrel, the water level is set by the shortest slat.



If each slat represents an amino acid, the amount of bone and muscle in the horse's body is determined by the dietary level of each amino acid. A deficiency of any one, will limit development. The remaining amino acids, which cannot be used, are converted to fat - increasing weight handicap and causing 'blowing' after work, due to overheating.

Amino acid deficiencies favour fat. Fine-tuning the amount of protein, amino acid levels and digestibility prevents deficiencies and supports muscle and bone development.

RACING FORMULAS: Several management strategies can reduce the weight handicap of the gut contents - *feeding oil* and using *oil-enriched, nutrient-dense, highly digestible feeds*. To achieve these benefits, the feed must contain between 10 and 12% oil.

Substituting oil for some of the grain in racing diets has several advantages. One litre of oil has as much energy as 3kg of oats, but because oils are highly digestible, they reduce heat load and, by preserving blood glucose levels, they delay the onset of fatigue. Although this cannot increase 'top speed', it allows the horse to maintain top speed for longer - before fatigue begins to reduce power.

Every kilo of fibre in oats and roughage holds 6-8 litres of water and electrolytes in the gut. This 'ballast' or dead weight contributes to the weight the horse must carry. Replacing some of the grain with oil can lighten the load.

The gut represents up to 25% - around 125kg - of a horse's body weight. An extra 23kg can slow speed by 0.64m/second and 66kg slows speed by up to 1.3m/second. The importance of body weight cannot be underestimated - but body weight can! When asked to estimate of horse's weight, 85% of vets and horsemen underestimated by 70 - 90kg - and there was no relationship between number of years experience with horses and accuracy of the guess.

Monitoring body weight and determining 'ideal winning weight' for individual horses can assist in keeping a horse in top racing condition. There are several ways to determine body weight, but the most accurate is scales.

Monitoring body weight is useful for:

- keeping a record so changes can be detected.
- comparing horses of similar height and bone.
- monitoring growth in 2 year olds during pre-training.
- determining ideal body weight for optimum performance - usually within a 7kg range
- preparing horses: for most horses, 'ideal' racing weight is the same from one preparation to the next and varies by only 2-4kg.
- determining how a horse is recovering after a race. The average weight loss during a race is 4-5kg. Horses that regain this within 48 hours show a better post-race recovery.

Specially formulated racing feeds and regular weighing allow closer matching of diet to exercise, giving trainers an additional strategy to fine-tune and tailor feeding and work load.

Mitavite racing feeds are constantly evolving to apply current advances in nutrition research. Mitavite racing formulas are oil-enriched and incorporate the technologically advanced grain processing techniques of steam extrusion and micronization. These feed preparation methods - increase digestibility from 30% for raw grains, to over 90% and reduce by 1/3 the weight of feed required, minimizing the dead weight on the inside, while maintaining the high nutrient intake necessary for superior performance.

Mitavite is committed to research and development, applying the latest knowledge on equine performance and nutrition to produce a range of formulations specifically prepared for racing horses.