

Nutritional Deficiencies in Australian Racehorse Rations

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This work has been published in the Proceedings of the Australian Equine Science Symposium, 2006 (1, 49).

Evaluation of a ration is often the most effective method of diagnosing and correcting nutrient imbalances and is a large part of the work carried out by Equine Consulting Services. Here, I attempt to summarise the results of analysis of average feeding programs from a total of 70 thoroughbred racehorse training stables in New South Wales, Victoria and Queensland. The diets were evaluated for energy, protein and vitamin and mineral levels, relative to the recommended nutrient requirements of horses in intense work. Individual ingredients were weighed and nutrient composition values were based on Australian and overseas literature. Total energy and crude protein were expressed as a percentage of recommended levels.

The average *energy* levels of the 70 rations was calculated at 94% of requirements and ranged between 62% - 129%. Energy is “fuel” which allows the racehorse to optimise its performance, and those rations providing less than 100% of energy requirements may be limiting the performance of horses in the stable.

Crude *protein* levels averaged exactly 100% of recommended requirements but ranged between 52% and 157%. Protein is the major structural component of muscles, blood and many other tissues and a breakdown of protein contained in muscles and other tissues occurs in horses on low protein diets. Excess protein in the diet is fermented in the hindgut, producing heat, which adds to the heat load of exercising horses. This basically means that excess protein isn't good for horses that sweat as it increases the demand for water.

The majority of trainers (67%) used a premix feed either alone or in conjunction with grains and supplements and the average energy and protein levels of rations based on these premix feeds were not different to those rations where premix feeds were not used.

Of all rations analysed, 69% contained less *sodium* than recommended (key electrolyte), while 30% of diets contained less *Vitamin E* than recommended (Vitamin E may improve cardiac efficiency and reduce lactic acid production). At least one *B Group Vitamin* was lower than recommended in 76% of diets (B Group vitamins play a role in release of energy).

According to these results, the most common nutrient deficiencies in racehorse rations are sodium, Vitamin E and B Group Vitamins. For improvements in performance, the level of energy and protein needs to be optimized in a ration. Supplying feeds containing sub-optimal potency of vitamins and minerals may also limit performance and contribute to wastage and injury in the industry.

