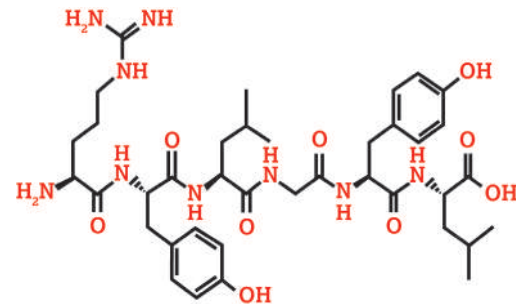


PROTEIN REQUIREMENTS

GAIN
EQUINE NUTRITION

Protein is made up of smaller building blocks called amino acids. The requirement for protein depends on the function of the horse, whether it is growing, mature, in work (and the intensity of the work it is carrying out), pregnant or lactating etc. The requirement is also dependant on not only the quantity but the quality of the protein available in the diet. This can be determined by the amino acid composition and digestibility, and this will determine the amounts of protein that you have to give the horse. The quality is of particular importance for growing horses. Lysine is usually the first limiting amino acid (the first amino acid to come into short supply in the diet). High quality sources of protein in the diet include hi-pro and full fat soya, alfalfa (Lucerne), milk based proteins (particularly useful in diet of foals/weanlings, sunflower meal and peas.



Protein in Pregnancy and Lactation

Pregnant mares that are not lactating do not require protein in excess of their maintenance requirement until the last trimester of pregnancy. The quality of protein in the diet at this time should also be given priority. Since approximately 65% of foetal growth takes place in the last 3 months of gestation, protein requirement will increase during this period. It is estimated that foetal placenta retains 77g of protein per day.



The protein content of milk is highest in the early stages of lactation, and declines gradually as lactation proceeds. Milk production (kg/day) depends on both protein and energy intake. Mare's milk contains on the average between 2.1% protein in early lactation with a drop to 1.8% protein in late lactation.

According to the NRC 2007 the protein requirement for lactation is 2.2 times that of maintenance. High quality stud feeds such as GAIN Stud Mix/Stud Cubes contain excellent sources of protein to ensure there is adequate quantity and quality of protein in the diet to optimise milk production.

Growing Horses

The requirements for higher amounts of good quality proteins are greater for growing horses than for older horses. Young horses have a smaller digestive tract in comparison to a fully grown horse and hence have a smaller feed intake than adult animals.



As a consequence, the concentration of digestible crude protein must be higher in the diets of young growing horses than of any other category. GAIN Foal Pellets contain 20% protein and are designed to be fed at a rate of 1-2kg/100kg BW per day.



An optimal ratio between energy and protein is required for a balanced growth. The demands for protein per unit of energy decrease as the horse gets older. The requirement for the amino acid lysine also declines with age. At ages of 3, 6, 12 and 18 months the requirement for lysine is 0.7, 0.5, 0.4 and 0.4 grams per MJ of digestible energy, respectively

Horses in Work

Training or work requires the same energy-to-protein ratio as maintenance. The increases in energy intake required during work therefore increases the protein requirement proportionately. For heavily exercised horses, protein allowances are more likely to become too high rather than too low. Excess protein in the diet is not desirable from both a cost and horse health perspective. Excess protein has to be filtered through the kidneys and excreted, leading to increased water intake and increased urine production. Ammonia build up in stables is then a more likely occurrence. Choose an appropriate concentrate for horses in work which will meet both their energy and protein requirements when fed at the recommended rates. There are many suitable performance products in the GAIN Equine Nutrition range, if you are unsure which product best suits your horses requirements its best of speak to one of our team of technical advisors.



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