

Equine Gold & Endurance – The Inside Story

There are many factors that contribute to a winning performance in endurance competition including, what to feed. Whilst ensuring an optimum intake of energy, fibre and other nutrients is vital, feed supplements such as live yeasts can represent the icing on the cake. Biotol's equine specialist Ali Howe explains why a live yeast supplement, such as Equine Gold, should be an essential part of your performance strategy.

The horse relies upon a population of 'friendly bacteria' in the hindgut for fibre fermentation. These bacteria are capable of breaking the β -linkages found in the structure of fibre, which cannot be digested by the horses' own digestive enzymes. The fibre-digesting bacteria are part of a mixed population of microflora that includes other bacteria, yeasts, fungi and protozoa. The diversity and size of this population, changes in response to diet composition, but also to various stress factors affecting the horse from day to day. Millions of friendly fibre-digesting bacteria are lost naturally from your horses' hindgut on a daily basis. Those which have died or been passed out in the faeces, are gradually replaced by new ones as a result of multiplication. For the competitive endurance horse, factors such as the training process itself, travel to and from competition, worming or antibiotic therapy and any stressful change from the home environment will further impact on the level of friendly bacteria in the hindgut. Furthermore, endurance competition, which includes prolonged exercise and a disrupted feeding pattern, represents a significant stress factor to hindgut microflora.

Biotol Equine Gold has been scientifically proven to have a beneficial effect on '*friendly bacteria*' in the gut. Because Equine Gold contains a pure live yeast, it provides a much more concentrated source of 'live' yeast cells. It acts to improve the environmental conditions in the hindgut, which allows the proliferation of friendly bacteria, including those involved in fibre fermentation. Specifically, it stimulates the production of bacteria capable of utilising lactic acid and so keeps acidity levels in check. It also helps to control the oxygen microclimate in the hindgut, making it more favourable towards the growth of friendly fibre digesting bacteria (cellulolytic). It can also compete with less favourable bacteria for the available food source, therefore keeping their levels controlled. The positive effect that live yeasts, such as Equine Gold, have on the hindgut environment is beneficial to all endurance horses and ponies at whatever level they compete:

- **Promotes and maintains condition** – Maintaining condition can be a significant problem in endurance horses that are clocking up considerable mileage both during training and competition. Whilst a successful endurance horse should not be overweight, equally an overtly thin animal may also be at a disadvantage. Endurance horses are traditionally fed a high fibre diet, which brings benefits such as a steady supply of energy in the form of volatile fatty acids, as well as a small reserve of water and electrolytes within the hindgut. Efficient hindgut function is essential to a competitive endurance horse as this is the site of fibre fermentatin and also significant water re-absorption.

A more favourable hindgut environment and increased levels of friendly fibre-digesting bacteria ensures that fibre fermentation is improved when Equine Gold is fed daily. This allows an endurance horse to 'use' his feed more effectively, and can also stimulate his appetite, which may be crucial during the latter stages of races.



- **Maintaining hydration** – By helping to maintain normal fermentation and production of volatile fatty acids, Equine Gold contributes towards maintaining hydration both prior to and during competition. Hydration status has the single largest effect on endurance performance, assuming that soundness is maintained. Whilst provision of water at every available opportunity is important during competition, the horses' own water conservation efficiency is also vital. Large amounts of water are re-absorbed from the caecum and colon (parts of the hind gut) during normal digestion. The water content of the digesta in the small intestine amounts to about 87-93%, whilst this is reduced to about 60% in faeces, once re-absorption of water in the hindgut has occurred. This re-absorbed water is then available to help maintain the correct balance of water in the body. Water follows absorbed volatile fatty acids and electrolytes in the hindgut by a simple process of diffusion. Therefore maintaining fermentation efficiency is important for water conservation.
- **Maintaining gut sounds** – Through its effect on fermentation and water efficiency, live yeasts such as Equine Gold, may also indirectly help to maintain gut sounds. Gut sounds or motility refer to the normal sound of digestion, which can be heard with a stethoscope through the abdominal wall. Gut motility can be reduced during prolonged endurance exercise, especially where the horse has over exerted and is under stress. This is contributed to by a reduction in blood flow to the gut, as it is diverted away to other major organs such as the heart, brain and musculature. There are many ways in which an endurance rider can try to maintain those all important gut sounds in their horse. Firstly, ensure that horses are exercised within their limit of performance, i.e. don't push too hard and create a physiological emergency. Secondly, the presence of food within the gut helps to maintain blood flow for continued digestion, even when other organs such as the muscles increase their demand. Thirdly, maintaining hydration and electrolyte balance will again help to maintain blood flow to the gut effectively.
- **Supports friendly bacteria during worming and antibiotics**– The levels of friendly bacteria in the hindgut can be severely reduced following the use of anthelmintics (wormers) and certain broad-spectrum antibiotics. The use of Equine Gold can ensure that the levels of friendly bacteria are re-established quickly following these necessary treatments. This effect is supported by a research study carried out at the Royal Agricultural College. This study indicated a significant increase in body weight despite recent anthelmintic treatment in horses fed Equine Gold compared to a control group where no supplement was fed.
- **Supports natural immunity** –Your horses' digestive tract functions as a 'front line' defence against infection entering the body and so not surprisingly more than 70% of the immune cells involved in fighting infection are found within the intestines. Equine Gold helps to support these defences by boosting levels of immune fighting antibodies and by trapping and then eliminating harmful bacteria and mycotoxins, the latter of which may arise from mould in feed.

Whilst there are many factors affecting performance in the endurance horse, the key to success may come from within. Using Biotal's Equine Gold, both during training and competition will help ensure that your horse competes to his full performance potential.

