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PROBIOTICS

HELPING HORSES RESIST STRESS©

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The word 'probiotic' means 'for life', the opposite of 'antibiotic' (against life). A probiotic is a culture of bacteria, yeasts and their metabolites, which stimulates the growth of beneficial organisms in the gut. These beneficial organisms, which include bacteria, fungi, protozoa and yeasts reside in the caecum, that part of the large intestine that ferments roughage and fibre. As well as assisting in the break down and digestion of fibre, these organisms yield additional protein, energy and vitamins when they die.

The caecum can be compared to a swimming pool, in that the pH must be kept within a narrow range or it turns green and toxic. Similarly, disturbances to the delicate ecosystem of the horses caecum and large intestine can lead to acid build-up, loss of appetite, manure changes and weight loss. The racehorse in training is exposed to both physical and psychological stresses which can disturb the microflora of the gut. In addition to the stress of hard training and racing, the thoroughbred may also be exposed to transport stress, heat stress, respiratory stress, psychological stress and stress from pain and injury. Changes in weather, diet, routine teeth rasping and, for some obscure reason, a full moon, have all been associated with digestive disturbances in horses.

Psychological stress has been linked to stomach ulcers in horses. In addition to grazing for up to 16 hours and travelling over 20km each day in search of food or escaping predators, the natural horse is also a social animal. The stress of stabling can be reduced if horses are able to see each other, have constant access to forage and are fed 3-4 small meals each day - instead of 2 large ones.

The stress of transport can lead to health problems such as pneumonia and colic. The risk of 'shipping fever' or pneumonia, is related to inability to lower the head for long periods and inhalation of ammonia fumes from urine and manure, dust in feeds and vehicle exhaust. 'Shipping colic' is linked to impactions from reduced water intake, high grain diets, changes in diet or feed quality and low roughage intake.

Diets high in raw grains can lead to a grain overload of the small intestine and the dumping of semi- and undigested grain into the caecum. Meal size, method of grain processing and amount of roughage in the diet are important here. More than 2kg of grain per meal has been shown to exceed the digestive capacity of the small intestine. Unlike fibre fermentation, which results in the production of useful fatty acids, when grain ferments in the caecum, it yields lactic acid, ammonia, gas and heat – all of which upset the normal balance of a neutral pH and a healthy population of beneficial micro-organisms. Most of the beneficial micro-organisms cannot tolerate acid conditions. As the grains ferment, acid level rises, pH falls and the beneficial organisms die, allowing acid-tolerant harmful organisms to proliferate. Many of these harmful organisms predispose to and cause such digestive system upsets as colic, diarrhoea and laminitis.

The time-honoured practices of boiling, grinding, steam-rolling, flaking, cracking and pelleting feeds for horses were employed to improve feed digestion and nutrient availability and to reduce the risks of digestive upsets. Fine-tuning of these early methods of feed preparation have resulted in the advanced processes of steam-extrusion and micronization. Both these methods of feed

preparation improve digestibility in the small intestine to over 90%, minimising the amount of semi- and undigested feed that flows through to the caecum for fermentation and reducing the risk of caecal disturbances.

But not all disturbances to the gut environment lead to clinical symptoms. There are more subtle effects of a disturbed gut environment. A depleted population of beneficial organisms can lead to loss of condition and body weight – even though appetite may remain good. The reason for this is that the normal population of bacteria, yeasts and protozoa assist with digestion and synthesizing valuable nutrients. When this population is depleted, large amounts essential minerals, vitamins, proteins and sugars pass through the gut without being digested and absorbed. This can result in loose manure or very fibrous manure (indicating the hay and chaff haven't been digested) or whole grains through the manure.

Simple probiotics such as yoghurt and yeast cultures, have been used in horses since the 19th century to combat stress, improve digestion, treat diarrhoea and fight harmful, pathogenic organisms. Recent developments have resulted in probiotics such as Protexin, which contain selected bacteria and yeasts to assist the horse in maintaining a healthy gut balance in the face of stress. To minimise stress, changes in nutrient requirements must be mirrored by changes in the composition of the diet. MITAVITE has combined the benefits of probiotics with the advantages of the latest feed processing technology in the formulation of XLR8. Containing PROTEXIN, steam-extruded and micronised grains, XLR8 has been released to assist trainers in reducing the risk of digestive upsets and to assist racehorses in resisting the negative effects of stress. For more information on feeding horses contact Mitavite toll free: 1800 025 487.

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