

## Dietary Management of Cushing's Disease

### What is Cushing's Disease?

Cushing's disease is a disease of the endocrine system and is caused by an abnormality in one of the endocrine glands, the pituitary, which is found at the base of the brain. Cushing's disease causes the production of excessive amounts of the hormone cortisol. Cortisol is a natural steroid hormone that is required in the body to regulate blood pressure and cardiovascular function as well as control the body's use of proteins, carbohydrates, and fats. However the continuous and excessive production of cortisol, such as that which occurs in horses affected by Cushing's is harmful.

### Feeding a horse with Cushing's disease

The management of a horse with Cushing's disease requires a holistic approach involving environmental management, the use of drug therapy (talk to your vet about this) and balanced nutrition. Good feeding practices can go a long way to preventing serious complications like laminitis and enhancing the quality of life for a Cushing's horse

### Feed a balanced diet

One of the most important considerations when feeding a horse with Cushing's disease is ensuring the horse is receiving a balanced diet with good levels of quality protein, vitamins (especially vitamin E) and minerals (including chromium). Using the recommended dose rate of a good quality vitamin and mineral supplement will help to ensure these requirements are met.

### *Do you think your horse could have Cushing's Disease?*

Horses with Cushing's disease may exhibit some or all of the following symptoms

- Increased appetite, which may also be combined with weight loss.
- Insulin resistance
- Increased susceptibility to laminitis
- Abnormal fat distribution, with a cresty neck and fat deposits over the back and tail head.
- The appearance of bulges above their eyes
- Excessive thirst
- Excretion of an unusually large volume of urine
- Profuse sweating
- A pot bellied appearance
- Loss of top line muscle
- A thick wavy hair coat in the winter that fails to shed before summer
- An increased susceptibility to infection
- Lethargy

## Cushing's Disease

### **Avoid feeds that change post-feeding blood glucose and insulin concentrations**

Because of cortisol's role in the management of blood glucose and insulin concentrations, horses suffering with Cushing's disease lose much of their ability to control the levels of glucose and insulin in their blood. The ingestion of sugars by a Cushing's affected horse causes abnormally high rises in blood insulin levels that can remain elevated for long periods of time. A recent study (Asplin *et al.* 2007) has found that high levels of circulating blood insulin can cause laminitis, which may explain why horses affected by Cushing's disease are especially prone to laminitis.

Because of the insulin resistance associated with Cushing's disease, any feeds that cause a significant increase in blood glucose and insulin concentrations post-feeding, such as high starch cereal grains, cereal grain by-products such as pollard and bran, molasses and improved pastures or pastures that are stressed or growing under sunny but cold conditions, should be avoided. Feeds and forages that are low in sugars and starches and high in fibre and/or fat, that provide readily available energy, without changing blood glucose or insulin levels are desirable for a horse with Cushing's.

### **Feed suitable, low-sugar forages**

Forages such as mature, stemmy grass hay and mature lucerne hay are suitable for most horses with Cushing's disease, though to be on the safe side you should have your hay tested by a laboratory to make sure the sugar content is less than 10%.

### **Use good feeding management practices**

Because Cushing's horses are particularly sensitive to dietary changes, always introduce any new feeds and forages (especially lucerne) into the diet slowly. Feed them in small meals and always make sure they have constant access to a salt lick and clean fresh water. And finally, manage their weight carefully as excess body fat will make their problems with insulin resistance worse.

### **The final word**

A low sugar diet is the key to managing a horse with Cushing's disease. Stay well away from anything that contains soluble sugars and starches (including processed feeds that contain any sort of grain or grain by-product) and instead use feeds that contain fats and digestible fibre. Sticking to the good basic principles of feeding a balanced diet, feeding little and often, and making any dietary changes very slowly will also go a long way to maintaining a horse with Cushing's disease in good health.

#### **CoolStance Copra**

CoolStance is a high fibre, high fat, low sugar low, starch feed that is suitable for horses with Cushing's disease. CoolStance will provide Cushing's horses with 'safe' energy and protein without altering blood glucose or insulin levels. CoolStance also contains medium-chain fatty acids that may help to ward off infection.

For more information or to order CoolStance / PowerStance, please call 803-647-1200 or e-mail [Claudia@stanceglobal.com](mailto:Claudia@stanceglobal.com)