

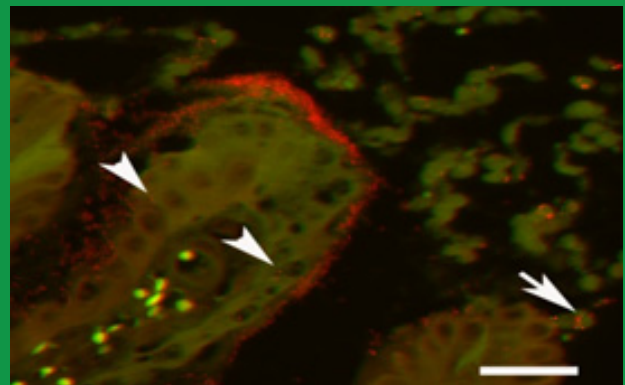


## STOMACH ULCERS

The horse's stomach constantly secretes hydrochloric acid. For a trickle eater this is essential as the acid helps prepare food for enzymatic digestion – and microbial fermentation – in the intestines. To protect the stomach lining there are also specialised secretory cells (goblet cells) that produce a mucin that coats the lining' at least in the lower half of the stomach. However, if a horse is fed individual meals, is stressed – and stabling, transport, training and unfamiliar surroundings can all be stress factors – or exercised on an empty stomach (the acid sloshes up into the unprotected portion), there is disruption in normal gastric functioning. Excess acid is not bound within the food and mucin secretion can stop. Stomach linings can be exposed and the acid can act directly on it causing acid burns, lesions and finally ulceration:



**Ulceration of the squamous portion of the stomach (arrowed).**



**Bacterial infection (in red) of mucosal portion of the stomach (arrowed).**

Another factor is the type of feed offered. Cereal based feeds do not soak up the acid well and they also encourage the growth of starch utilising bacteria. These will thrive fermenting the starch, producing lactic acid. Research has shown this acid can quickly penetrate the mucus and open up a path to infection by bacteria similar to heliobacter.

Once infection has taken hold lesions occur and ulceration follows:

Both these factors occur because the performance horse cannot spend its entire day grazing. Instead whatever forage it receives is supplemented by hard feed and so there must be times where the stomach contents are unsuitable or the stomach is empty.

Research has shown that lucerne, when fed alongside hard feed can hold back this excessive acidification of the stomach for up to 6 hours. Other data demonstrates that pectin, found in the soluble fibre of beet pulp, is released from the fibre matrix by stomach acid and, in the presence of emulsifiers can be integrated into and reinforce the mucin that lines the stomach.\*

**It is these components that have been included into Fibre-Beet Mash.**

\*Data on file.

