

Formerly known as  
Laminitis Rescue



# HoofXtra mix

A premium bioavailable vitamin and mineral mix with the nutrients that may benefit laminitic horses

Copper Zinc Magnesium Selenium Biotin (B7) Pyridoxine (B6) Folic acid (B9)

It was back in 2007 that Emeritus Professor Chris Pollitt at The University of Queensland and his team (Asplin KE, Sillence MN and McGowan CM) showed that elevated blood levels of insulin (hyperinsulinaemia) is a major risk factor for laminitis. Laminitis caused by elevated levels of insulin is considered the most common dietary form. Insulin controls glucose metabolism.

Elevated insulin is known to be caused by the following mechanisms:

- Insulin resistance (IR), a state where the tissues show a reduced sensitivity to insulin resulting in an overproduction of insulin.
- Gut hormones called incretins (GLP-1 and GIP) are produced in the intestine to enhance insulin release for the purpose of stabilising blood glucose levels. Abnormal high insulin has been linked to higher levels of a type of incretin (GLP-1).

To prevent laminitis caused by elevated insulin regardless of mechanism, the key is a diet **low in sugar and starch** as it's these carbohydrates that trigger the release of insulin from the pancreas. Excellent information and help at [www.ecirhorse.org](http://www.ecirhorse.org), their IO group and Facebook page.

HoofXtra mix is not a therapy or cure for laminitis. Nothing can substitute for a low sugar + starch, low fat diet. It is a nutritional mineral and vitamin supplement that includes the B vitamin biotin, known to move nutrients into cells without insulin involved in other species (insulin

signalling) and both pyridoxine and folic acid which may assist with nitric oxide production for blood circulation, in particular perfusion in the hooves, at levels recommended by Dr Eleanor Kellon VMD.

HoofXtra also contains selenium. The standard feeding rate (17 g) contains 1 mg selenium.

Selenium is an important antioxidant for protecting cell structures and cell membranes from the effects of oxygen free radicals produced during energy generation and therefore most important for tissues with high aerobic metabolism activity like the brain/nervous system, heart, skeletal muscles and rapidly growing tissues. Acidic soils inhibit selenium uptake by plants. Alkaline soils are more likely to have adequate selenium levels though horses in work may need supplementation. A soil test will test pH, the lower the pH number the higher the acidity, 7 is neutral and the higher the number the more alkaline the soil.

More information about supplementing selenium:  
Selenium Paranoia by Dr Kellon:

<https://drkhorsesense.wordpress.com/2014/10/09/selenium-paranoia/>

This product is contraindicated for use when selenium intake from pasture is high or selenium is provided by other means (such as top dressing, vaccine, pellets or selenium drenches) if blood selenium levels at treatment are high. Users can determine selenium status by consulting their veterinarian.

# HoofXtra Mineral & Vitamin Mix

Dr Kellon recommends:

- 20 g/100 kg freshly ground linseeds/flaxseed or equivalent.  
<https://www.balancedequine.com.au/nutrition-articles/10-linseed.html>
- 3.5 IU/100 kg vitamin E, ideally supplemented with human capsules. Vitamin E added to feeds or multi ingredient supplements is oxidised very quickly so should be added separately. If In powder form, should be soaked in oil for optimal uptake.  
<https://www.balancedequine.com.au/33-info/28-about-shop.html#VitaminE>

See the emergency diet on the ECIRhorse.org website.

There is NO added iron and manganese which are harmful in excess, and can compete with the uptake of zinc and copper. Pasture and hay tests around Australia have shown that iron and manganese is often excessive, particularly iron. There is no excretory pathway for excessive iron and excessive manganese is an issue because it takes up storage space that normally is for iron, resulting in more free iron circulating in the system.

If *HoofXtra* mix doesn't help (poor coat appearance, compromised immune system, poor hoof quality), then we know ideally, the pasture/hay should be tested to see what the mineral levels and copper to zinc ratio is. This will tell us what amounts of copper and zinc are needed to

optimise the rest of the intake (and the other nutrients like protein, calcium, and phosphorus).

'Link Between Minerals and Coat Bleaching'

<https://www.balancedequine.com.au/nutrition-articles/9-minerals-and-coat-bleaching.html>

The following ingredients have been selected on the basis of premium quality and bioavailability based on research:

*Per standard feeding rate (17 grams):*

Mineral	Mineral Source
300 mg copper	Poly copper
900 mg zinc	Zinc sulfate monohydrate
1 mg selenium	Organic selenium yeast
6 g magnesium	Magnesium oxide

Plus      20 mg biotin (vitamin B7)  
              200 mg pyridoxine (vitamin B6)  
              20 mg folic acid (vitamin B9)

*HoofXtra* is a nutritional supplement product for inclusion in horse's feed. Product has no therapeutic effect and is designed to be administered in a feed for voluntary ingestion for horses.

If needing to supplement amino acids, Balanced Equine Equine Amino provides key essential amino acids at levels recommended by Dr Eleanor Kellon VMD.

**The best ratio for copper to zinc is 1:3 for the whole intake.**

**Instructions:** Feeding rate per day is **17 grams**, or 1.2 metric tablespoon (slightly heaped 20 ml volume measure).

Ponies under 300 kg, ½ tablespoon.

Best mixed thoroughly with wet feed. Start with 1 pinch to a teaspoon and build up slowly.

Don't be alarmed if your horse refuses to eat his or her feed with the mineral mix. Many horses don't object to minerals when mixed thoroughly in a feed but some do refuse initially till their palate has adjusted to the taste. This is not surprising as minerals are not palatable. If you have no improvement or have any trouble please contact me for help.

Email: [carol.layton@gmail.com](mailto:carol.layton@gmail.com)

**SAFETY DIRECTIONS:** Avoid contact with eyes and skin. Avoid breathing dust.

**FIRST AID:** If poisoning occurs, contact a doctor or Poisons Information Centre.

Phone Australia 131 126 New Zealand 03 4747 000

**Use by date:** 4/2020

Manufactured in Australia

*Horse consumption only*

**Balanced Equine Pty Ltd**  
2877 Scone Road Cobark NSW 2422

Balanced Equine  
[www.balancedequine.com.au](http://www.balancedequine.com.au)