



Zinc

Never forget that minerals, vitamins and electrolytes never act in isolation. Just because a specific mineral may be important in a particular area e.g. zinc in hoof health it does not mean that just supplementing with zinc will improve poor hoof quality. It is always a complex interplay of many enzyme systems that rely on a multitude of minerals, vitamins and electrolytes at any one point in time.

Why does my horse need zinc?

Zinc is a trace mineral requirement of horses that is important in many enzyme systems in the body. It therefore has a direct effect upon insulin production, blood clotting, wound healing, bone development, coat colour and reproduction. It is also important for hoof health.

How much does my horse need in his diet?

The recommended intake is 40mg/kg dry matter in the diet. Most feeds provide from 20-40 mg/kg dry matter but more research is showing that most hays and grasses are fairly low in providing zinc in the diet. A 500 kg horse in light work requires approximately 400 mg per day of zinc.

What are the signs of a zinc deficiency?

Hair loss and anorexia are the main signs of clinical deficiency but horses that are subclinically deficient would present as poor doers. Absolute deficiency is rare but borderline deficiency could be fairly common.

What are the signs of zinc excess?

High levels of zinc are well tolerated by the horse – up to 500mg/kg dry matter can be consumed with few problems. Extremely high levels can produce lameness, stiffness and enlarged epiphyses on bones. However it is now thought that these signs are due to copper deficiency rather than excess zinc. Excessive zinc interferes with copper absorption and the relative amounts of zinc and copper in the diet are important. Unlike calcium and phosphorus where there is a set ratio it is harder to define a ratio with copper and zinc as copper is stored in the liver. The amount of copper stored will determine the ratio and this is very hard to measure. A ratio of 1:2 to 1:3 of copper to zinc has been suggested as a guide for daily intake.

What are other sources of zinc apart from plant ingestion?

Zinc can be provided as a supplement as inorganic zinc or chelated zinc. Chelated zinc is 17.2% zinc concentration while inorganic zinc is 35% zinc. More research needs to be done on the absorption of inorganic and chelated zincs but one study indicated that chelated zinc was absorbed 25% more than inorganic. Chelated zinc is much more expensive and more needs to be fed to match the absorption of inorganic zinc. Once the zinc is absorbed it acts the same way regardless of whether it was fed as inorganic or chelated.

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