

Equine Health Tips



Horse's Requirement for Copper & Zinc

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Copper and Zinc are often discussed in relation to equine nutrition. Many claims are made as to the huge requirements horses have and how we could not possibly supply these minerals with a basic diet. Amazing tales are also heard of horses suffering dreadful complaints as a result of deficiency. In reality these minerals are micro minerals – hence are only required in very small amounts in the equine diet. This month I aim to clear this misunderstanding up for all of you to assist in keeping feeding regimes logical and economical.

The Actions and interactions of Zinc and Copper:

Zinc: Zinc is a component of many enzymes that are important in bone cartilage and hoof formation, plus maintenance of skin health.

Zinc uptake is reduced by excess copper, high phytate and oxalate intake.

Copper: Copper has its importance in the growth and maintenance of bone, cartilage, elastin and hair. It also functions in the production of red blood cells, and healing.

Severe Copper deficiency is not often seen in the horse, however may be induced by feeding excess zinc and or vitamin C. High levels of molybdenum and lime in pastures can also induce copper deficiency by blocking uptake. Excess intake of copper blocks selenium uptake and also blocks copper uptake, assisting horses to be relatively tolerant of high copper levels.

However, copper cannot be excreted from the body, and as such is a cumulative poison, eventually the horse sustains liver and kidney damage and this situation is not reversible.

Copper is contained in sufficient quantities in most common horse feeds and as such supplementation is generally not required.

Requirements for Adult Horses

Zinc: 36 mg/kg of feed per day

Copper: 10 mg/kg of feed per day

Sources of Copper and Zinc:

Zinc: Lucerne, Barley, Corn, well maintained pastures.

Copper: Lucerne, brewers yeast, corn, barley, molasses.

Both are supplied in some level in common natural horse feeds. Supplements are available, however due to the issues of toxicity, supplementation is only recommended in sandy areas and other pastures where it is known that plant uptake of these minerals is low.

Signs of Deficiency or Excess:

Zinc: *Deficiency:* retarded growth, hair loss, thickened skin, reduced appetite, poor biotin absorption

Excess: Anaemia, enlarged joints and lameness in foals.

Copper: *Deficiency:* reduced cartilage formation in foals, enlarged joints, lameness in growing horses, Anaemia may occur with severe deficiency, discolouration of coat – yellowing.

Excess: Although horses are tolerant of high levels of copper for a short time, if this situation continues over a period of months the horse will suffer from kidney and liver damage which may result in death. Also may show as a selenium deficiency.

So it is clear again, a basic natural diet, that does not contain excess added minerals and vitamins as found in some commercial rations, is the safe and healthy way to feed your horses.

Until next time take care of yourselves and your equine friends. Christine