



## Minerals –

### what's necessary and what's not.

**By The Nude Horse  
(Equine Epidemiologist)**

How many times have you heard “Horses survived in the wild for thousands of years without mineral supplements”. Or “My grandparents never fed stuff like that to their horses and they worked all day”. True, but are we able to replicate this today?

### The wild horse's way

A wild horse grazes for 15-17 hours per day, travelling often many kilometres, in search of new grassy spaces and bushy landscape to pick from trees, shrubs, lichen on rocks and natural mineral deposits on the ground.

An incredible film maker Ginger Kathrens observed and studied the Cloud band of Pryor horses in Montana over 9 years. She documented their behaviours over several generations. The Cloud foundation notes the herd likes to lick rocks, pawing and eating minerals from the ground. They noticed they like to do this at various locations. This lengthy study revealed that wild horses are capable of taking care of themselves, sourcing adequate minerals for their needs.



**Cloud's Pryor herd at a natural mineral lick**

Wild horses drink water from springs, streams and lakes. These natural sources of water sources are abundant in nutrients. A horse can obtain from 20 litres of some spring waters around 7g calcium, 2g magnesium, 2g salt

(sodium/chloride) and other micro levels of minerals each day.

Licking lichen off rocks has been observed in wild horses for up-to 32 minutes in a lactating mare and her foal while only a few minutes for the rest of the herd. Lichens offer amino acids, proteins, vitamins and polysaccharides which are normally soluble in water. Some other metabolites in lichen include some antibiotics and chemical defences against horses feeding on them.

### Horses in captivity

A typical horse in captivity will spend some time each day grazing the same limited paddocks. They often receive hay and a hard feed daily. Grazing time is usually less than ideal, and the variety of forage limited.

So how do you as the horse's carer, provide the right balance of macro and micro nutrients to meet their horses daily needs?

Have you ever seen a horse chewing on their fence? Sometimes this is attributed to boredom but often it too can be a sign that the horse is lacking in some minerals. Our soils often do not have enough minerals to naturally supply our pastures with adequate minerals either. Overgrazing can cause limited forage species to be available.

Most water we supply our horses with come from a dam, tank water or town water, completely lacking a quality natural mineral supply.



### Providing minerals

Minerals are broken down into macro and micro. Macro minerals include calcium, phosphorus, sodium, chloride, potassium, magnesium and sulphur. These are required in gram amounts in the diet. Micro or trace minerals include copper, cobalt, manganese, zinc, iron and selenium. These are required in much smaller quantities in the diet, and are measured in mg or IU.



Sourcing a commercially prepared daily vitamin and mineral feed supplement that accurately balances each mineral to its co-dependent mineral works best to ensure daily dietary needs are met. Feeding premixed feeds in volumes less than specified, results in lower than desired daily mineral supply. Hence adding a guaranteed daily vitamin and mineral supplement to your own base feeds, ensures the right volume of minerals are being delivered every day.

The National Research Guide is a trusted global body that delivers reliable percentages and ratios of mineral and vitamin needed for all horses types, age and size. However, not all horse feed supplements are created equal. In the case of minerals, organic chelated trace minerals (minerals that are tied to an amino acid) have increased bioavailability over the oxide or sulfate forms. Vitamins and minerals need to be kept in certain ratios and levels in order to keep horses healthy. For example, copper and zinc must be kept in a 4:1 ratio for proper bone growth, development and maintenance. Calcium needs to be around 4:1 to phosphorus and potassium. Calcium and magnesium absorption is dependent also on Vitamin D and Boron (A synergistic relationship). *Flowers Gold* is a quality organic/chelated vitamin and mineral supplement that meets all of these guidelines successfully while still allowing for some pasture grazing and hay to be fed alongside the daily hard feed.

Sourcing quality hays and hard feeds with good mineral profiles will further assist in supplying bioavailable additional mineral needs.

## Salt

Of interest, at trial the maximum a horse in extreme work will willingly consume is 32g of salt a day. Adding salt in larger than necessary volumes may result in gastric health disturbances and kidney stresses.



Reputable commercial mineral supplements normally would not add more than 12-15g of salt (Sodium/Chloride) to the daily feed ration. Supplying a Himalayan salt rock is the safest choice to provide a natural source of good salts and quality micro nutrients should your horse desire more salt. Trends of feeding pool salt to horses puts a horse at risk of salts that have not been prepared for consumption and cannot be guaranteed free of other chemical

compounds. Always source food grade salt for animal consumption.

The problem with commercially prepared salt lick blocks is the lure of molasses and other flavours that may interfere with the instinct of the horse, as they are no longer able to differentiate between need and taste.

## Over feeding minerals

Adding a variety of supplements can endanger your horse's health. Combining various premade feeds or multiple complete vitamin and mineral supplements can result in toxicity. **More is not better.** For example, Selenium fed at the right level promotes healthy hair growth, add too much and hair loss occurs. Vitamins and minerals also need to be kept in certain ratios and levels to be bioavailable and not rendering another unavailable. When combining multiple feeds, always be aware of levels of iron, zinc, copper, selenium and iodine to avoid toxicity.

## Improving soil mineral content

Improving your soil will greatly improve the quality of the grasses growing in your paddocks. First, you need to test your soil and obtain the recommendations of exactly what to add. Even if you don't know enough about the science yet to make fully informed decisions, you can have a starting point to begin asking questions and researching. SWEP is a reputable Australian company that offers the ST-1 Standard Soil Balance Analysis for \$110. You will never regret having that baseline information.

<https://www.swep.com.au/home/services/soil-testing/>

## How to make my own hard feeds

Making your own hard feed is not as hard as you might think. Each horse is different and being able to adapt to their individual needs often proves far more successful than trying to feed the same feed to all horses.

Quality mineral, vitamin and protein profiles are in cracked lupins, beetpulp, copra and lucerne hay/chaff. Great articles to help you design your own hard feeds are on our website to download:

- Keep It Simple Diet
- Base Feeds
- How Much Do I Feed?
- Protein
- Oils
- Electrolytes

<https://www.thecloudfoundation.org/>  
<https://wildequus.org/2013/08/19/feral-pottoka-and-lichen-licking/>  
<http://www.mineral-calculator.com/compare-waters/1955.html>