



## ALPACA FACT SHEET #9

Welfare, Education & Training Reviewed 2018

# MINERAL AND VITAMIN SUPPLEMENTS

The main vitamin to consider in alpaca supplementation is Vitamin D and the main mineral is Selenium. Both are responsible for significant pathology when deficient and both are able to induce severe toxic signs if given at too high dosage. Vitamin D is available both as injectable and in the form of a paste. Obtaining injectable vitamin D may be difficult owners should contact their veterinary surgeon

Vitamin D	Selenium
<p>Vitamin D is essential for bone metabolism, amongst other things. Therefore growing animals have high vitamin D requirements. One of its main effects is to enhance calcium absorption from the diet.</p> <p>It seems that alpacas have higher vitamin D requirements compared to Ruminants, and this may be due to them being adapted to very high UV exposure in their native environment, as UV exposure is necessary for activation of vitamin D in the skin (transformation of a cholesterol derivative into vitamin D3). As a result, vitamin D requirements are especially high for:</p> <ul style="list-style-type: none"> <li>• Young growing animals (note that milk is essentially devoid of vitamin D).</li> <li>• Animals with darker skin or heavy coat (blocking UV light).</li> <li>• Animals not sufficiently exposed to UV light (i.e in northern latitudes or kept indoors for long periods).</li> </ul> <p>The classically recommended dose rate for cria is 1,000-2,000 international units (IU) per kg bodyweight by subcutaneous injection twice at 6 week interval, during the winter months.</p> <p>The form of vitamin D generally used in supplementation is vitamin D3 or 25-hydroxycholecalciferol. 1,000 IU of vitamin D corresponds to 25 µg. Normal values in alpaca plasma are reported as being above 25 to 30 nmol/L vitamin D3.2</p> <p>Vitamin D deficiency in growing animals leads to a bone condition called rickets. However massive doses of vitamin D can be toxic and result in the following signs:</p> <ul style="list-style-type: none"> <li>• Calcium deposits within blood vessels such as the aorta and carotids.</li> <li>• Calcium deposits on adrenals, stomach wall and parathyroids.</li> <li>• Reduced growth, hyperphosphataemia, weight loss, anorexia, debilitation.</li> </ul>	<p>Selenium deficiency is responsible for 'white muscle disease' in young animals (well documented in lambs) and for infertility in adults, especially females.</p> <p>Selenium supplementation should be implemented carefully as too much selenium can lead to severe problems including sudden death in its acute form or abnormal nail and wool growth in its chronic form.</p> <p>As the difference between the therapeutic/preventative dose and the toxic dose is narrow, it is recommended to check the selenium status of your animals before implementing a supplementation regimen in consultation with your veterinarian.</p> <p>Normal values in alpaca blood are reported as being above 0.5 to 0.7 µmol/L selenium.2</p> <p>References</p> <ul style="list-style-type: none"> <li>• DIXON R. – personal communication.</li> <li>• JUDSON G. Mineral and vitamin needs of alpacas – Proceedings of the Australian Camelid Veterinary Association, Perth, June 2000, pp 45-58.</li> <li>• Standing Committee on Agriculture and Resource Management, Ruminants Subcommittee – Feeding standards for Australian livestock, Ruminants – CSIRO, 1990.</li> </ul>

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### Copper:

This mineral is rarely deficient per se but certain areas in the UK, particularly reclaimed marshland may have high levels of Molybdenum or Sulphur which interfere with the uptake of copper. However excess copper is very toxic and so any supplementation should be carried out under veterinary supervision. This may include blood testing for copper levels.

In the UK vitamins and minerals are most often given in the form of a drench (minerals), a 'lick' (minerals), a paste or gel (Vitamins) or by injection (Vitamins). A level of vitamins and minerals may also be present in the feeds esp those formulated for camelids so it is wise to check and calculate the additional mineral and vitamins accordingly. If in doubt consult your feed supplier who will have the information and often access to a nutritionist who should be able to assist.

When administering drenches and gels one must take care not to damage the soft tissue in the mouth or inadvertently introduce the drench or gel into the airway/windpipe.

Administration of injectable vitamins should be done in conjunction with a suitably experienced camelid vet in order to ensure correct placement.

The BAS would also like to thank Dr. Graham R Duncanson for his help in checking these documents

**Disclaimer: The management practices detailed in this overview do not constitute veterinary advice. Any alpaca appearing to have an adverse condition should be assessed by a veterinarian.**