

Livestock: Vitamins and Minerals - Sheep

Vitamins and minerals are vital nutrients in the diets of livestock and are required to achieve balanced nutrition for health and production.

Insufficient levels of vitamins and minerals can have serious consequences on animal health and performance in turn affecting enterprise profitability. Whilst this is the case oversupplying these does not benefit the sheep and is damaging to the environment.

Imbalances in vitamin and mineral levels can often lie undetected, and it is only when animal health and productivity is seriously compromised that action is taken. However, through effective soil and forage analysis any deficiencies and toxicities can be identified and corrected. Every farm has individual requirements and so it is extremely important to match mineral and vitamin supplementation to on-farm analysis.

Some of the more common imbalances in sheep are highlighted overleaf.



Vitamins

Vitamins are compounds that are essential for the health of the animal, but which the animal is unable to make for itself. Most vitamins have a number of functions in the body and

requirements increase with age. Both deficiencies and excesses can lead to disease. Vitamins must therefore be included in the diet. There are two types of vitamins:

- **Water Soluble = B and C**
- **Fat Soluble = A, D, E and K**

Minerals

There are a number of minerals that are essential for life and an insufficient supply of them may cause disease or even death.

However, if used indiscriminately toxicity can occur, especially to copper and selenium. Minerals are classified as major elements and trace elements.

- **Major Elements = Calcium, Phosphorus, Potassium, Sodium, Chlorine, Sulphur, Magnesium**
- **Trace Elements = Cobalt, Manganese, Iodine, Selenium, Copper, Zinc, Iron, Molybdenum**



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CONDITION	CAUSE	SYMPTOMS	PREVENTION	TREATMENT
Swayback	Copper deficiency in ewes, causing defects in the nervous system of the developing lamb.	Lambs may be born dead, die shortly after birth or may not be able to stand and are uncoordinated. Newborn lambs cannot rise and suckle.	Give copper to ewes around tupping or 10 weeks prior to lambing. Copper is available as a bolus, such as COPINOX. Other forms of copper should not be given when this product is in use. Soil analysis is recommended.	Obtain veterinary diagnosis. Treatment of affected lambs is not possible. Excess copper is toxic to sheep, supplements should not contain any additional copper.
Hypomagnesaemia (Grass staggers)	Low levels of magnesium in the bloodstream. Generally seen in sheep between lambing and peak lactation. Can also be a problem when sheep are turned out onto lush pastures low in magnesium.	Early signs include stiff walk, tremors of the face, frequent urination and agitation. Generally followed by collapse. Sheep will lie on their sides with legs straight out and head back. Convulsions and death will follow.	Use feed supplementation or boluses containing magnesium, such as RUMBUL. Encourage clover growth as this has a higher magnesium content than grass. Avoid applying high potash fertiliser at high risk periods and when stock are stressed as this can lock up soil magnesium.	Onset is very quick. The first sign may be a dead sheep. 50ml of 25% magnesium sulphate, plus treatment for hypocalcaemia, subcutaneously, over 2-3 sites. If the sheep does not respond to treatment contact a vet.
Hypocalcaemia (Lambing Sickness)	Low levels of calcium in the bloodstream, due to increased demand in late pregnancy & lactation (for colostrums & milk production). More common in older ewes as they cannot use body stores as efficiently.	Firstly excitable with nervous tremors & staring eyes. Will stagger then collapse, with hind legs stretched out behind, head down and drooling. Breathing will become shallow, extremities will become cold and death will follow. Can be confused with Twin Lamb Disease.	Ensure adequate levels of calcium in pre-lambing feed. Ewes should be gradually introduced to the diet pre-lambing (6-8wks).	50-60ml of 20% calcium borogluconate with added magnesium and phosphorus, subcutaneously, over 2-3 sites. If the sheep does not respond to treatment contact a vet.
Nutritional Muscular Dystrophy (White Muscle Disease)	Low levels of selenium or vitamin E , during pregnancy affects lambs.	Lambs are born dead or weak. Surviving lambs will be weak and uncoordinated. Animals prefer to be lying down, rise with difficulty and walk slowly and stiffly.	Crops grown on selenium deficient land may give rise to this condition. Supplement with selenium and vitamin E, especially during pregnancy. Do not over supply as can be toxic . Soil analysis is recommended.	Obtain veterinary diagnosis. Carefully treat all lambs with selenium and vitamin E boluses or injections.
Cobalt Deficiency (Pine)	Soils low in cobalt. Cobalt is essential to the synthesis of vitamin B12; lack of it also leads to deficiency of B12.	Failure to thrive can sometimes be all that is observed. Lustreless fleeces, sunken eyes, anaemia, stunted growth.	Soil analysis is recommended. Supplementation through cobalt boluses and drench, such as TracesureCo bullets.	Supplementation through cobalt boluses and drench, such as TracesureCo bullets. Poisoning can occur. Over-dosage must be avoided.